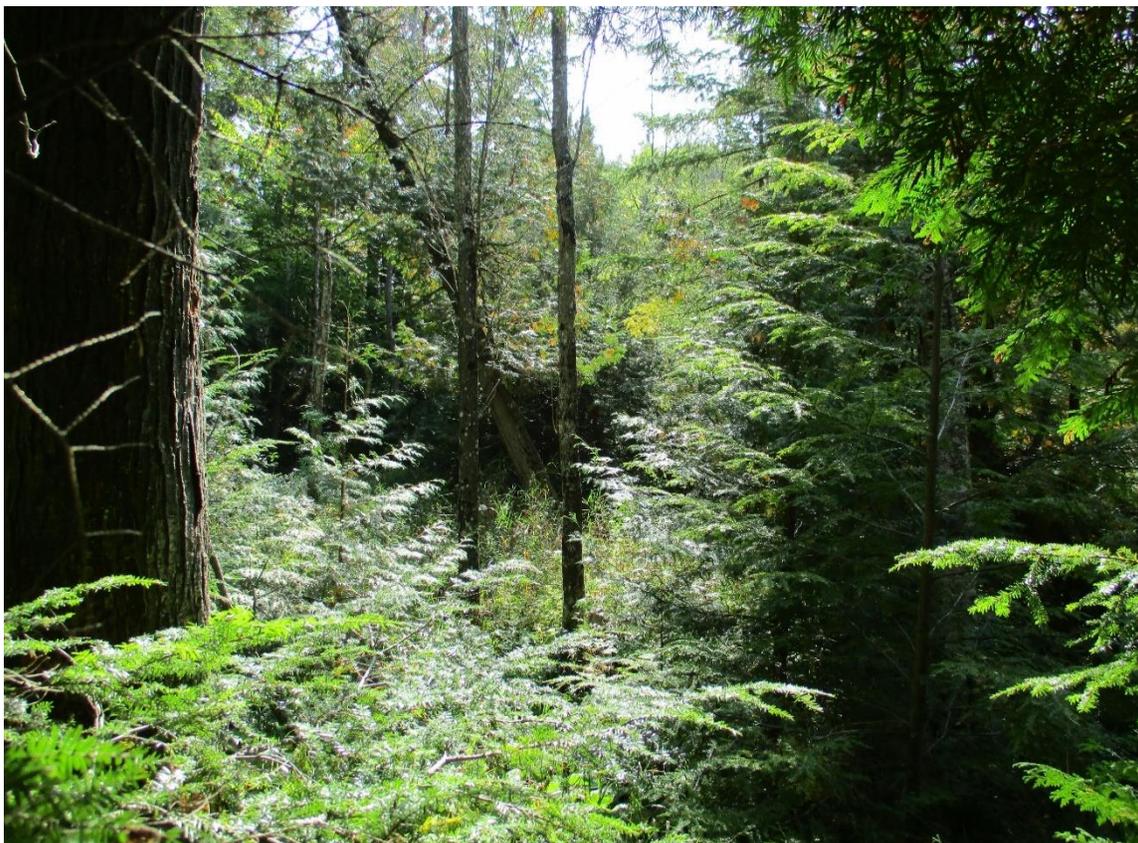


MIRAMICHI SHORES LAND DEVELOPMENT LIMITED

# MIRAMICHI SHORES - PHASE 4 ENVIRONMENTAL IMPACT STUDY UPDATE

FEBRUARY 22, 2021





# MIRAMICHI SHORES - PHASE 4

## ENVIRONMENTAL IMPACT STUDY UPDATE

MIRAMICHI SHORES LAND  
DEVELOPMENT LIMITED

PROJECT NO.: 201-06434-00  
DATE: FEBRUARY 22, 2021

WSP  
UNIT 2  
126 DON HILLOCK DRIVE  
AURORA, ON, CANADA L4G 0G9

T: +1 905 750-3080  
F: +1 905 727-0463  
WSP.COM

February 22, 2021

---

# SIGNATURES

## PREPARED BY



---

Sophie Gibbs, M.E.S.  
Terrestrial Ecologist

## REVIEWED BY



---

Erin Fitzpatrick, M.Sc.  
Project Ecologist, Ecology and EIA

WSP Canada Inc. prepared this report solely for the use of the intended recipient, MIRAMICHI SHORES LAND DEVELOPMENT LIMITED, in accordance with the professional services agreement. The intended recipient is solely responsible for the disclosure of any information contained in this report. The content and opinions contained in the present report are based on the observations and/or information available to WSP Canada Inc. at the time of preparation. If a third party makes use of, relies on, or makes decisions in accordance with this report, said third party is solely responsible for such use, reliance or decisions. WSP Canada Inc. does not accept responsibility for damages, if any, suffered by any third party as a result of decisions made or actions taken by said third party based on this report. This limitations statement is considered an integral part of this report.

The original of this digital file will be conserved by WSP Canada Inc. for a period of not less than 10 years. As the digital file transmitted to the intended recipient is no longer under the control of WSP Canada Inc., its integrity cannot be assured. As such, WSP Canada Inc. does not guarantee any modifications made to this digital file subsequent to its transmission to the intended recipient MIRAMICHI SHORES LAND DEVELOPMENT LIMITED

# TABLE OF CONTENTS

1	INTRODUCTION.....	1
2	STUDY APPROACH.....	1
2.1	<b>Background Information Collection.....</b>	<b>1</b>
2.2	<b>Agency Consultation.....</b>	<b>2</b>
2.2.1	Ministry of the Environment, Conservation and Parks.....	2
2.2.2	Ministry of Natural Resources and Forestry.....	2
2.2.3	Saugeen Valley Conservation Authority.....	2
2.3	<b>Field Surveys.....</b>	<b>2</b>
3	POLICY ANALYSIS.....	3
3.1	<b>Provincial Policy Statement.....</b>	<b>3</b>
3.2	<b>Official Plan Policies.....</b>	<b>4</b>
3.2.1	County of Bruce Official Plan (2017).....	4
3.2.2	Town of Saugeen Shores Official Plan (2014).....	5
3.3	<b>Migratory Birds Convention Act, 1994.....</b>	<b>6</b>
3.4	<b>Federal Fisheries Act, 1985.....</b>	<b>6</b>
3.5	<b>Endangered Species Act, 2007.....</b>	<b>6</b>
4	EXISTING CONDITIONS.....	6
4.1	<b>Vegetation.....</b>	<b>7</b>
4.1.1	Vegetation Communities.....	8
4.1.2	Vascular Flora.....	10
4.2	<b>Wildlife.....</b>	<b>11</b>
4.2.1	Birds.....	12
4.2.2	Amphibians and reptiles.....	13
4.2.3	General Wildlife.....	13
4.3	<b>Aquatic.....</b>	<b>14</b>
4.4	<b>Species At Risk.....</b>	<b>15</b>
4.5	<b>Natural Heritage Features.....</b>	<b>16</b>
4.5.1	Significant Woodlands.....	16
4.5.2	Significant Wildlife Habitat.....	16
4.5.3	Fish habitat.....	17

4.5.4	Habitat of Endangered and Threatened Species.....	17
4.5.5	Key Hydrological Features.....	17
4.5.6	Natural Hazards.....	18
<b>5</b>	<b>PROPOSED WORKS .....</b>	<b>18</b>
<b>5.1</b>	<b>Draft Plan of Subdivision.....</b>	<b>18</b>
<b>6</b>	<b>IMPACT ASSESSMENT .....</b>	<b>19</b>
<b>6.1</b>	<b>Vegetation .....</b>	<b>19</b>
6.1.1	Significant Woodland .....	19
6.1.2	Unevaluated Wetlands .....	20
6.1.3	Habitat for Species of Conservation Concern .....	21
<b>6.2</b>	<b>Wildlife .....</b>	<b>21</b>
<b>6.3</b>	<b>Species at Risk .....</b>	<b>22</b>
<b>6.4</b>	<b>Aquatic.....</b>	<b>22</b>
<b>7</b>	<b>MITIGATION RECOMMENDATIONS .....</b>	<b>23</b>
<b>7.2</b>	<b>Wildlife .....</b>	<b>24</b>
7.2.1	Migratory Birds .....	25
7.2.2	Other Wildlife.....	25
<b>7.4</b>	<b>Species at Risk .....</b>	<b>26</b>
<b>8</b>	<b>SUMMARY .....</b>	<b>27</b>
<b>9</b>	<b>BIBLIOGRAPHY.....</b>	<b>28</b>

---

## *APPENDICES*

<b>A</b>	<b>FIGURES</b>
<b>B</b>	<b>AGENCY CORRESPONDENCE</b>
<b>C</b>	<b>SAR SCREENING</b>
<b>D</b>	<b>SPECIES LISTS</b>
<b>E</b>	<b>REPRESENTATIVE PHOTOGRAPHS</b>
<b>F</b>	<b>ELC AND SOIL SAMPLE FIELD NOTES</b>
<b>G</b>	<b>DRAFT PLAN OF SUBDIVISION</b>
<b>H</b>	<b>TREE RETENTION PLAN</b>



# 1 INTRODUCTION

WSP Canada Inc (WSP), has been retained by the Miramichi Shores Land Development Ltd. to complete an Environmental Impact Study (EIS) update to support an application for Draft Plan Approval for the proposed residential subdivision at the property described as Part of Lots 55 and 56, Town of Saugeen Shores, Ontario. The property (16.2 ha in size) encompasses the development footprint of the proposed subdivision (3.8 ha), which is herein referred to as “the Site”. For a representation of both the larger property and the Site, refer to **Appendix A, Figure 1**. A Natural Heritage EIS was completed by Aquatic and Wildlife Services (AWS) in 2008 as a condition of the Draft Plan Approval issued by the County of Bruce for the Mary Rose Subdivision; however, as construction wasn’t initiated within the specified timeframe, the Draft Plan approval lapsed. This EIS is presented as an update to the 2008 EIS in support of a new application for Draft Plan Approval.

The portion of the Site proposed for development is zoned as Shoreline Residential, which allows for development of low-density residential houses and cottages. The Site is also partially situated within the Special Policy Area (SPA) #4 identified on Schedule A of the Town of Saugeen Official Plan (2014). SPA #4 identifies potential natural hazard features, including high groundwater and complex drainage conditions, as well as natural heritage features, including known unevaluated wetland, and significant woodland. This EIS will address applicable policies of the Provincial Policy Statement (Ontario, 2020), regional and municipal official plans, and requirements under the Endangered Species Act (ESA), 2007.

The Site occurs within the jurisdiction of the Saugeen Valley Conservation Authority (SVCA) and is within a designated Screening Area. Based on a review of existing mapping and its location within an unevaluated wetland and proximity (30 m) to a watercourse feature, it is expected that the Site, or portions of it, will be regulated by the SVCA. The EIS will consider the policies of Ontario Regulation 169/06, particularly as they relate to development within an unevaluated wetland.

The purpose of the EIS is to document natural heritage features on and adjacent to the Site, assess the potential for impacts to these features and their functions as a result of the proposed development, and provide recommendations to avoid, minimize and/or mitigate identified impacts. The EIS will also take into consideration results from other supporting technical studies, including the 2008 EIS (AWS), hydrogeological studies (Gaman Consultants Inc., 2021a and 2021b), and the geotechnical investigation (CMT Engineering Inc., 2020) and associated recommendations. Corresponding figures for this EIS are provided in **Appendix A**.

## 2 STUDY APPROACH

---

### 2.1 BACKGROUND INFORMATION COLLECTION

Background information on the natural environment in and surrounding the Site was obtained and reviewed from the following sources:

- On-line database of the Ministry of Natural Resources and Forestry’s Natural Heritage Information Centre (NHIC – squares 17MK6924 and 17MK6923);
- Ontario Breeding Bird Atlas;
- On-line database of the Cornell Lab of Ornithology, eBird;
- Ontario Reptile and Amphibian Atlas;



- Land Information Ontario (LIO);
  - Topographical Maps; and,
  - Aerial Photography.
- 

## 2.2 AGENCY CONSULTATION

All records of agency liaison can be found in **Appendix B**.

---

### 2.2.1 MINISTRY OF THE ENVIRONMENT, CONSERVATION AND PARKS

The MECP was contacted on November 17, 2020 to request available Species at Risk (SAR) records within or adjacent to the Site; an automated response was promptly received with no project specific natural heritage information. A response from MECP was received on February 1, 2021. MECP provided direction for completing a preliminary site screening but did not provide species specific lists or survey recommendations.

---

### 2.2.2 MINISTRY OF NATURAL RESOURCES AND FORESTRY

The Midhurst MNRF was contacted on September 17, 2020 to request information concerning significant species and designated natural features within or adjacent to the Site. A response was received on November 24, 2020, indicating that the information request had been reviewed and no additional information was available for the Site (Jodi Benvenuti, pers. comm. November 24, 2020).

---

### 2.2.3 SAUGEEN VALLEY CONSERVATION AUTHORITY

The SVCA has been involved in the project since the outset, reviewing and providing input to design considerations as it affects natural environmental features. The SVCA was initially contacted on June 30, 2020 to request available natural heritage information pertinent to the project limits such as regulated areas or features of significance (e.g. wetlands, woodlands).

#### *Terms of Reference*

A Terms of Reference (ToR) for the ecological scope of work to be undertaken for the EIS was prepared by WSP based on discussions between the client, SVCA and Town during a site walk, and circulated to SVCA on September 1, 2020. Comments were received on September 16, 2020, and the final TOR was approved on October 9, 2020. Records of the Correspondence with SVCA, including comments provided and all details of the TOR are available in **Appendix B**.

---

## 2.3 FIELD SURVEYS

The following field surveys were completed within the larger property:

- Three surveys to classify and map vegetation communities using Ecological Land Classification (ELC) for Southern Ontario (June 22, July 7, and September 23, 2020);
- One Amphibian Survey (June 21, 2020);
- Two Breeding bird surveys (June 22, July 7, 2020); and,
- Incidental wildlife observations were documented during all field surveys.



Descriptions of the field survey methodologies are provided under relevant subsections below.

## 3 POLICY ANALYSIS

Planning legislation and policies pertinent to the Site have been reviewed and are summarized in the following sections. An overview of key policies and implications is provided along with an assessment of the policy as it relates to natural heritage features within and adjacent to the Site.

---

### 3.1 PROVINCIAL POLICY STATEMENT

The PPS (OMMAH, 2020) is a planning document that provides a framework for, and governs development within, the Province of Ontario. In order to preserve various ecological resources deemed significant in the Province, development lands must be assessed for the presence of natural heritage features prior to construction. These natural heritage features (listed below) are both defined and afforded protections under the PPS. Linkages between natural heritage features, surface water and groundwater features are also recognized and afforded similar protections under the policy. Section 2.1.2 of the PPS also requires that the diversity and connectivity of all-natural heritage features and the long-term ecological function of natural heritage systems be maintained, restored or improved where possible. Further to this, natural heritage systems within Ecoregions 6E and 7E are to be identified as per Section 2.1.3.

Under the PPS (OMMAH, 2020), development or site alteration is prohibited within significant wetlands in Ecoregions 5E, 6E and 7E and in significant coastal wetlands, but may be allowed adjacent to these features provided the adjacent lands have been evaluated and it has been demonstrated that there will be no negative impacts to these features or their ecological functions. Development may be permitted in or adjacent to significant wetlands in the Canadian Shield north of Ecoregions 5E, 6E and 7E, significant woodlands and significant valleylands in Ecoregions 6E and 7E (excluding islands in Lake Huron and the St. Mary's River), significant wildlife habitat (SWH), significant areas of natural and scientific interest (ANSI), and coastal wetland in Ecoregions 5E, 6E and 7E provided there will be no negative impacts to these features or their ecological function due to the proposed undertaking. In addition, development and site alteration is not permitted in fish habitat, or habitat of endangered or threatened species, unless in accordance with provincial and federal legislation.

Natural heritage features as defined by the PPS (OMMAH, 2020) include:

- Fish Habitat;
- Habitats of Endangered and Threatened Species;
- ANSI;
- Significant Wetlands;
- Significant Coastal Wetlands;
- Other Coastal Wetlands in Ecoregions 5E, 6E and 7E;
- Significant Wildlife Habitat;
- Significant Woodlands in Ecoregions 6E and 7E (excluding islands in Lake Huron and the St. Mary's River); and,
- Significant Valleylands in Ecoregions 6E and 7E (excluding islands in Lake Huron and the St. Mary's River).

NHFs identified on or adjacent to the Site during the background review, including the 2008 EIS prepared by AWS, are depicted on **Figure 2 of Appendix A**. NHFs on or adjacent to the Site are discussed in greater detail in Section 4.1; descriptions include information obtained through the 2020 field investigation.

1. **Significant wetlands.** No Provincially Significant Wetlands (PSW) are present within the Site or immediate vicinity.
2. **Significant woodlands.** The County of Bruce Official Plan (2017) and the Town of Saugeen Shores Official Plan (2014) identifies the forested area within the Site as a significant woodland. This mapping is generally consistent with the Land Information Ontario (LIO; MNR, 2016) spatial information depicted as “woodland” on **Figure 2** for the Site.
3. **Significant valleylands.** No significant valleylands were identified within the Site.
4. **Significant wildlife habitat (SWH).** SWH was not identified in publicly available background information. The AWS EIS (2008) identified potential habitat for species of conservation concern, a locally significant wildlife corridor, and seasonal concentration areas (seasonal migration habitat for woodland songbirds).
5. **ANSI.** No ANSIs are present within or adjacent to the Site.
6. **Fish habitat.** Fish habitat is present within the cold water stream within the Site.
7. **Habitat of endangered and threatened species.** Four endangered or threatened species are thought to have moderate to high potential to be present on or within the vicinity of the Site, and three species of Special Concern (refer to **Section 4.4** and **Section 6.3**). There were no endangered or threatened species confirmed on or adjacent to the Site in the AWS EIS (2008).

The identified impacts and recommended mitigation measures for NHF identified on, or adjacent to, the Site is provided in **Section 7**.

---

## 3.2 OFFICIAL PLAN POLICIES

---

### 3.2.1 COUNTY OF BRUCE OFFICIAL PLAN (2017)

The environmental objective of the County of Bruce Official Plan (CBOP; Office Consolidation Sept 2017) is to protect and manage the natural resources of the County in order to maintain and preserve a healthy living environment for existing and future generations. Section 4.3.9 states that in order to achieve County objectives for the protection of the natural environment, development proponents shall be required to prepare an EIS for any proposal that is:

- i) In, or within 120 metres of, a provincially significant wetland;*
- ii) In, or within 60 metres of, a locally significant wetland;*
- iii) In, or within 120 metres of, the habitat of threatened or endangered species;*
- iv) In, or within, 120 metres of, a significant woodland, significant valleyland, significant wildlife habitat, deer wintering areas;*
- v) In, or within 120 metres of, fish habitat;*
- vi) Within the ‘100 Metre Buffer Zone’ or ‘2 Year Time of Travel (WHPA-B)’ for Wellhead Protection Areas or within a ‘Intake Protection Zone 1 (IPZ-1)’ or ‘Intake Protection Zone 2 (IPZ-2)’ for Intake Protection Zones;*



vii) *Within known areas of karst topography;*

viii) *In, or within 50 metres of Areas of Natural and Scientific Interest (ANSI) Earth Science.*

While mapping of these features is available in Schedule C (North Section) of the CBOP, mapping is not currently available for the area containing the Site (South Section). Field investigations and background review indicate that no locally or provincially significant wetlands, significant valleylands, SWH, deer wintering areas, Wellhead Protection Areas, Intake Protection Zones, known areas of karst topography, or ANSIs are within or adjacent to the Site.

A cold-water stream that provides fish habitat is present adjacent to the Site, and as per Section 4.3.2.1 of the OP, no development shall be permitted within 30 metres of the banks of a cold water stream. A 30 m buffer separating the cold-water stream and any construction activities will be maintained to address impacts to the stream.

The criteria for significant woodlands is outlined in Section 4.3.2.6 of the CBOP, and states “for Townships with less than 30% forest cover, wood lots of 40 hectares or greater are considered significant.” The woodland impacted by the proposed subdivision is ~130 ha in area and is therefore considered a Significant Woodland.

Development within locally or provincially significant wetlands is not permitted or strongly regulated. For example, Section 4.3.2.5 states that “areas such as Environmental Hazard Lands, significant habitat of threatened and endangered species and Provincially Significant Wetlands, new development and site alteration is not permitted.” Referring to locally significant wetlands (Section 4.3.2.4) the plan states “Development, which may have a significant impact on lands, located within locally significant wetlands, may require the preparation of an Environmental Impact Study... to ensure that the ecological function of the lands is not negatively impacted by the proposed development.”

Three wetland units were identified during field investigations; however, none are locally or provincially significant. It is noted in the Environment general policies (Section 4.3.2.5) that “for some environmentally sensitive areas new development may be permitted within and adjacent to them, provided it can be demonstrated that the development will not have an adverse or negative impact on the area.” Refer to **Section 6.1** for further details.

---

### **3.2.2 TOWN OF SAUGEEN SHORES OFFICIAL PLAN (2014)**

The Town of Saugeen Shores Official Plan (SSOP; 2014) aims to maintain, restore and enhance Natural Heritage Features, ecological functions and water resources within the Town. The Town achieves this through the protection of environmental features including habitat of endangered or threatened species, significant wildlife habitat, wetlands, significant valleylands, areas of natural and scientific interest, significant woodlands and fish habitat. The plan relies on the Environmental Hazard (EH) designation, Special Policy Area #4, and the Significant Woodlands Study mapping to achieve the Town’s environmental goals. New development proposed in or adjacent to the Environmental Hazard designation must also address applicable environmental feature issues.

The proposed subdivision is located within an area designated as Shoreline Residential on Schedule A: Land Use of the SSOP (2014), while the remainder of the property is identified as Environmental Hazard. Schedule A also includes the Special Policy Area #4 (SPA #4) overlay, which covers most of the property but only overlaps with the northern extent of the subdivision. SPA #4 is described as containing natural heritage features, including significant woodlands, SWH, fish habitat, wetlands, and habitat for species of conservation concern, as well as environmental hazards, including high groundwater and complex drainage conditions. Section 3.20.4.2 indicates that new residential uses are permitted within SPA#4, within Shoreline Residential areas that have been established through preliminary environmental review studies



and are considered to avoid hazardous features. Section 3.20.4.3 indicates that minor adjustments to EH boundaries may be permitted following consultation with SVCA.

The majority of the Site occurs within the Shoreline Residential area, which allows for development of low-density residential houses and cottages (per Section 3.20.4.2 of the Plan), given certain conditions including the avoidance of hazardous features, preparation of an EIS, a tree retention plan and a hydrogeological study. Conditions also include the avoidance of hazardous features and minimization, to the extent possible, of impacts on the environment using proper site design to address surface and sub-surface drainage. The Site is also zoned as R1-2, which defers to R1 (Residential First Density) zoning uses, which includes an allowance for single detached dwelling where the lot can accommodate both a water supply and sewage system.

---

### 3.3 MIGRATORY BIRDS CONVENTION ACT, 1994

This legislation protects the nests and nesting activities of bird species listed in regulations under the Act. It applies to the majority of the bird species recorded in the Site during the field surveys. Mitigation measures to protect for Migratory Birds (i.e., clearing and grubbing timing windows, and pre-screening nest surveys) are identified to avoid contraventions to the MBCA and provided in **Section 7.2.1**.

---

### 3.4 FEDERAL FISHERIES ACT, 1985

The focus of the Fisheries Act is to protect the productivity of recreational, commercial and Aboriginal fisheries by focusing protection on real and significant threats to the fisheries and the habitat that supports them. Section 35 (1) of the Fisheries Act states: “No person shall carry on any work, undertaking or activity that results in serious harm to fish that are part of a commercial, recreational or Aboriginal fishery, or to fish that support such a fishery.” The Act interprets ‘serious harm to fish’ as “the death of fish or any permanent alteration to, or destruction of, fish habitat.” Proponents that plan to undertake activities in or near water have potential to negatively affect fisheries, as such, are responsible for avoiding, mitigating, and offsetting ‘serious harm to fish.’

---

### 3.5 ENDANGERED SPECIES ACT, 2007

Species listed under the Endangered Species Act, 2007 (ESA) extirpated, endangered or threatened have protection from being killed, harmed, or harassed. Species listed as endangered or threatened also have habitat protection, which may be identified specifically in regulation or more generally in a general habitat description.

Four individuals of one SAR species, Eastern Wood-pewee (*Contopus virens*; Special Concern), were found to be breeding within the site during field investigations.

Habitat of species of Special Concern is not protected under the ESA, however, is protected as SWH under the PPS (OMMAH, 2020) (refer to **Section 4.5.2**).

The SAR screening table is provided in **Appendix C** with further information is provided in **Section 4.4**.

## 4 EXISTING CONDITIONS

The Site is located in the Lake Fringe Sub-watershed of the Saugeen River watershed. The Lake Fringe is a narrow strip of land along Lake Huron extending from north of Kincardine to Southampton. This



watershed is 254 km<sup>2</sup> in size, with numerous tributaries flowing into Lake Huron. The land use in the sub-watershed is primarily agricultural (60%), with large forest tracts with forest interior close to the lakeshore (Saugeen Conservation, 2018). The rest of the forest in the sub-watershed is limited to small fragmented forests at the back of farm lots. Directly adjacent to the shoreline and extending into forest tracts are extensive residential house and cottage development. Bruce Nuclear Power Development is also present in this sub-watershed. The physiography in the area consists of 44% till plain (undrumlined), 39% sand plain, 15% beaches and shore cliffs, 2% peat and muck (Saugeen Conservation, 2018).

The Site is generally mature deciduous or mixed forest and swamp, with a cold-water stream that drains into Lake Huron. Anthropogenic influences in the forest tract are limited to a few invasive species and the presence of a network of trails used for hiking, mountain biking, and horseback riding.

---

## 4.1 VEGETATION

Vegetation surveys were conducted by WSP ecologists to document the characteristics of the natural and culturally influenced vegetation communities. Three visits were completed in three different seasons (spring summer and fall) to capture the greatest variety of vegetation at appropriate times of year. Surveys were completed on the following dates; June 22, July 7, and September 23, 2020. Vegetation field work and associated data assessment involved:

- Classifying and mapping vegetation communities according to the Ecological Land Classification (ELC) System for Southern Ontario (Lee et.al., 1998) for all natural and cultural vegetation communities within the entire property, including the Site. For mapping of the identified ELC units, refer to **Appendix A, Figure 3**.
- Vegetation community significance was evaluated using Natural Heritage Resources of Ontario: Vegetation Communities of Southern Ontario (Bakowsky, 1996; NHIC website);
- Botanical inventory and analysis, including the preparation of a vascular plant species list (**Appendix D-1**);
- Evaluating the sensitivity and significance of vegetation species and vegetation communities using the MNRF’s NHIC website for provincial rarity ranks (i.e., S-Ranks); the Species at Risk in Ontario (SARO) list (updated periodically) for provincial status designations; the Committee on the Status of Endangered Wildlife in Canada (COSEWIC), the Species at Risk Act (SARA) Public Registry websites for national status designations (updated periodically), and The Vascular Plants of the Bruce Peninsula (Johnson, 2016);
- Evaluating habitat potential for locally rare vegetation and SAR known or thought to exist in the general vicinity of the project limits;
- Compiling a photographic record documenting terrestrial habitat conditions during the field visit (**Appendix E**)
- WSP augmented and refined the vegetation communities first classified and delineated by AWS in 2008. Potential wetland units were initially classified using methods from the Ontario Wetland Evaluation System (OWES), namely, the “50% wetland vegetation rule,” which includes an assessment of the relative abundance of wetland versus terrestrial plant species to determine a wetland classification (OMNR, 2013). Soil sampling, and the presence of hydric substrates was then used to confirm the wetland classification.

#### 4.1.1 VEGETATION COMMUNITIES

The Site supported a variety of wetland and upland areas, of deciduous, mixed and coniferous vegetation communities, and two small marsh inclusions. The property was bisected by a watercourse, with the subdivision development proposed south of the watercourse. The forested areas on the Site are a relatively small portion of 155.4 ha tract of similar habitat extending from Concession Road 10 northward beyond the Site. Another partially connected 110.8 ha forest tract occurs south of Concession 10 (**Figures 1 and 5**).

Five vegetation community types were identified and delineated within the project limits. These communities are discussed below, ELC mapping is provided in **Appendix A, Figure 3**, representative photographs are provided in **Appendix E**, and ELC and soils sample field notes are available in **Appendix F**. Many of the classifications determined in 2020 are changes from the original ELC classifications determined in 2008. Most of these changes are based on dying canopy species (i.e. Ash death due to Emerald Ash Borer) and additional information gathered through soils work completed in 2020.

##### **Unit 1: Fresh-Moist Sugar Maple Hemlock Mixed Forest (FOM3-2) (AWS Unit 2)**

This forested unit made up the majority of the Site and was comprised of a complex of dry hills and small wet depressions. Drier areas made up approximately 75% of the unit, and wet depressions were too small to be considered inclusions, at approximately 100-300 ft<sup>2</sup> in size each. Except in the wettest of depressions, the canopy and subcanopy species were uniform throughout the unit, consisting of abundant Sugar Maple (*Acer saccharum*), Eastern Hemlock (*Tsuga canadensis*), Paper Birch (*Betula papyrifera*), and frequent Red Maple (*Acer rubrum*), occasional Green Ash (*Fraxinus pennsylvanica*), and rare Large-toothed Aspen (*Populus grandidentata*), Black Cherry (*Prunus serotina*) and American Beech (*Fagus grandifolia*). Also present in one small, particularly wet depression was Black Ash (*Fraxinus nigra*; assessed by COSEWIC [2018] as Threatened). The understory layer in the drier areas was dominated by Canada Yew (*Taxus canadensis*), with occasional Canada Fly Honeysuckle (*Lonicera canadensis*), and Running Strawberry-bush (*Euonymus obovatus*) and in wet depressions, was a mixture of Red-osier Dogwood (*Cornus sericea*), Red Raspberry (*Rubus idaeus*), and Common Winterberry (*Ilex verticillata*). The ground layer vegetation included a similar mixture of upland and wetland species, including Red Baneberry (*Actaea rubra*), Wild Sarsaparilla (*Aralia nudicaulis*), Jack-in-the-pulpit (*Arisaema triphyllum*), Woodland Sedge (*Carex blanda*), Long-stalked Sedge (*Carex pedunculata*), Small Enchanter's Nightshade (*Circaea alpina*), Large-leaved Aster (*Eurybia macrophylla*), Grass-leaved Goldenrod (*Euthamia graminifolia*), Purple-stemmed Aster (*Symphyotrichum puniceum*), Northern Water-horehound (*Lycopus uniflorus*), Northern Starflower (*Lysimachia borealis*), Wild Lily-of-the-valley (*Maianthemum canadense*), Large False Solomon's Seal (*Maianthemum racemosum*), Partridgeberry (*Mitchella repens*), Sensitive Fern (*Onoclea sensibilis*), Green-flowered Pyrola (*Pyrola chlorantha*), White Trillium (*Trillium grandiflorum*), and Stinging Nettle (*Urtica dioica*).

The forest was mature with abundant standing snags and occasional canopy gaps; however, early successional species were still present within the canopy. The wet depressions may serve as vernal pools in the early spring, however little or no water was observed during the late June visit suggesting they would provide limited habitat for breeding woodland amphibians. When species in both dry hills and wet depressions were considered, only 23% are considered wetland indicators. Soil samples showing pure sand to ~50 cm with a dry-fresh moisture regime also indicated the upland nature of the unit. Refer to **Appendix F** for detailed results of soil sampling efforts. This unit was originally classified as Unit 2: Dry-Fresh Sugar Maple-White Birch-Poplar Deciduous Forest (FOD1-10) in the AWS EIS (2008). It was reclassified by WSP based on soil moisture regime, and because Eastern Hemlock has been judged to be more abundant than Paper Birch, perhaps due to death of this shade intolerant, early successional species.



### **Unit 2a and 2b: White Cedar-Hardwood Organic Mixed Swamp (SWM4-1; Old Unit 3) with a Cattail Organic Shallow Marsh Inclusion (MAS3-1; AWS Unit 6)**

These two units were very similar in character and were located along the watercourse that runs through the property; however, they were separated by Unit 3. These units are riparian-associated swamps with marsh vegetation located directly adjacent to the watercourse. The canopy and subcanopy were open (~40% cover) and supported abundant Eastern White Cedar (*Thuja occidentalis*), occasional Red Maple, and infrequent Eastern Hemlock, Yellow Birch (*Betula alleghaniensis*), and Paper Birch. The understory layer contained Balsam Fir (*Abies balsamea*), Black Ash, Mountain Maple (*Acer spicatum*) American Black Currant (*Ribes americanum*), Red-osier Dogwood, and Glossy Buckthorn (*Frangula alnus*). The ground layer was similar between the two units with one notable exception; the marsh vegetation in Unit 2a consisted of a dense patch of highly invasive European Reed (*Phragmites australis* ssp. *australis*), with other native forbs within and surrounding the European Reed. In comparison, the marsh vegetation in Unit 2b was dominated by Broad-leaved Cattail (*Typha latifolia*). Otherwise, both units contained Marsh Marigold (*Caltha palustris*), Lake Sedge (*Carex lacustris*), Awl-fruited Sedge (*Carex stipata*), Marsh Horsetail (*Equisetum palustre*), Common Boneset (*Eupatorium perfoliatum*), Spotted Joe Pye Weed (*Eutrochium maculatum*), Spotted Jewelweed (*Impatiens capensis*), Watercress (*Nasturtium officinale*), Giant Goldenrod (*Solidago gigantea*), Purple-stemmed Aster, Coltsfoot (*Tussilago farfara*), and American Speedwell (*Veronica americana*).

These units were both mature bottomlands with organic soils. The AWS EIS (2008) identified seeps in Unit 2b, which were not observed by WSP. However, given the cold water nature of the watercourse, it is likely seeps were still present in the eastern portion of the property. The AWS EIS (2008) originally classified this unit as two separate Units; Fresh Moist White Cedar-Balsam Fir Coniferous Forest (FOC4-3) and White Cedar-Hardwood Mineral Mixed Swamp (SWM1-1). Considering the additional soils work completed in 2020 that confirmed hydric organic soils in both units, the change in classification is only a minor shift from the AWS classifications.

### **Unit 3: Hemlock Mineral Coniferous Swamp (SWC2-2; AWS Unit 4)**

This coniferous swamp bordered the watercourse on both sides and extended 5m to 30 m on either side. The canopy and subcanopy were variable throughout the unit, though Eastern Hemlock was consistently and frequently present. Frequent Red Maple, Yellow Birch, and Eastern White Cedar as well as infrequent Green Ash, Eastern Hop-hornbeam (*Ostrya virginiana*), and Balsam Fir, were present sporadically throughout. The understory layer, similarly variable, contained frequent Glossy Buckthorn (*Frangula alnus*) with infrequent European Buckthorn (*Rhamnus cathartica*), Red-osier Dogwood, Mountain Maple, American Mountain-ash (*Sorbus americana*), and Virginia Clematis (*Clematis virginiana*). The ground layer supported a great diversity of wetland forbs, grasses and sedges including Broad-leaved and Small Enchanter's Nightshade (*Circaea canadensis*, *C. alpina*), White Snakeroot (*Ageratina altissima*), Jack-in-the-pulpit, Lesser Clearweed (*Pilea fontana*), Heart-leaved Foamflower (*Tiarella cordifolia*), Yellow Clintonia (*Clintonia borealis*), Dwarf Scouring-rush (*Equisetum scirpoides*), Woodland Horsetail (*Equisetum sylvaticum*), Meadow Horsetail (*Equisetum pratense*), Bebb's Sedge (*Carex bebbii*), Awl-fruited Sedge (*C. stipata*), Golden Sedge (*C. aurea*), Graceful Sedge (*C. gracillima*), Eastern Star Sedge (*C. radiata*), Drooping Woodland Sedge (*C. arctata*), Porcupine Sedge (*C. hystericina*), Retrorse Sedge (*C. retrorsa*), Bladder Sedge (*C. intumescens*), Hop Sedge (*C. lupulina*), Fowl Mannagrass (*Glyceria striata*), Rice Cutgrass (*Leersia oryzoides*), Sensitive Fern (*Onoclea sensibilis*), Bulblet Bladder Fern (*Cystopteris bulbifera*), Common Lady Fern (*Athyrium filix-femina*), Spinulose Wood Fern (*Dryopteris carthusiana*), Royal Fern (*Osmunda regalis*), and Purple-stemmed Aster.

This unit was mature, with abundant standing snags and deadfall logs. The soils in this unit varied depending on distance from the watercourse; however, they generally consisted of an average of 50 cm of organics above sand, with the water table present at an average of 40 cm. Mottling was present in most of the samples.

Evidence of disturbance to this unit included the presence of two highly invasive shrub species present throughout; Glossy and European Buckthorn. The AWS EIS originally classified this unit as two separate Units; Fresh Moist White Cedar Coniferous Forest (FOC4-1) and Fresh Moist White Cedar-Hardwood Mixed Forest (FOM7-2). While patches of White Cedar were frequent throughout the Unit, the presence of Eastern Hemlock was more consistent, and the change to wetland can be explained by the additional soils work conducted in 2020.

**Unit 4: Red Maple-Conifer Organic Mixed Swamp (SWM5-1; AWS Unit 7)**

This mixed swamp unit was narrow (approximately 10 – 15 m in width) and linear, with upland ridges on either side. The canopy was more open than the surround forest due to the death of the previously dominant Green and Black Ash. With these Ash (*Fraxinus* sp.) dead, the canopy was composed of frequent Red Maple, occasional Eastern Hemlock and living Ash, and infrequent Yellow Birch. The subcanopy was very similar but also contained occasional Balsam Fir and Eastern White Cedar. The understory supported wetland shrubs such as Dwarf Raspberry (*Rubus pubescens*), Glossy Buckthorn, Western Poison Ivy (*Toxicodendron radicans* var. *rydbergii*), Highbush Cranberry (*Viburnum opulus* ssp. *trilobum*), and Riverbank Grape (*Vitis riparia*). The ground layer vegetation consisted of a variety of almost entirely wetland species, often occurring in small single species patches. Species include Broad-leaved and Small Enchanter's Nightshades, Yellow Marsh Marigold, Spotted Jewelweed, Sensitive Fern, Giant Goldenrod, Jack-in-the-pulpit, Marginal Wood Fern (*Dryopteris marginalis*), Bulblet Bladder Fern, Spinulose Wood Fern (*Dryopteris carthusiana*), Bladder Sedge (*Carex intumescens*), Dwarf Scouring-rush (*Equisetum scirpoides*), Reed Canarygrass (*Phalaris arundinacea* var. *arundinacea*), Royal Fern (*Osmunda regalis*), Kidney-leaved Buttercup (*Ranunculus abortivus*), Meadow Horsetail (*Equisetum pratense*), and Stinging Nettle (*Urtica dioica*). The northern end of the unit was slightly more wet than the southern portion, as evidenced in both soils and ground layer vegetation, however the canopy was constant throughout. The soils in this unit generally consisted of an average of 43 cm of organics above sand, with the water table present at an average of 36 cm. Mottling was present in most of the samples, strongly indicating hydric soils. The AWS EIS (2008) originally classified this unit as Fresh Moist Ash Lowland Deciduous Forest (FOD7-2). Changes in classification can be explained by the use of OWES methods described above, including soil sampling and the confirmation of hydric soils, the death of the previously dominant Ash in the canopy layer, and potential changes in the ground layer vegetation between 2008 and 2020.

**Unit 5: Dry-Fresh Sugar Maple Deciduous Forest (FOD5-1; AWS Unit 8)**

This unit was very similar to Unit 1 in that it contained a complex of dry hills and small wet depressions, however drier areas made up a larger portion the Unit, at approximately 95%. The canopy and subcanopy were uniform throughout and consisted almost entirely of dominant Sugar Maple with rare Black Cherry and Eastern Hemlock. The understory layer was dominated by Canada Yew, with infrequent Canada Fly Honeysuckle, and Running Strawberry-bush. Ground layer species were relatively sparse, and consisted of infrequent Wild Lily-of-the-valley, Large False Solomon's Seal, Partridgeberry, Cut-leaved Grapefern (*Sceptridium dissectum*), and White Trillium. This unit classification remains unchanged from the original AWS EIS (2008).

---

**4.1.2 VASCULAR FLORA**

There were 124 vascular plants observed within the property. Of these, one genus (*Viola* sp.) was not identified to species as the timing of the survey did not coincide with the presence of preferred identification characteristics or these characteristics were unavailable. Of the identified species, 110 (89%) are native and

14 (11%) are exotic. Of the native species observed for which coefficient of conservatism<sup>1</sup> (CC) values are provided, values range from 0 – 10 and most are within a CC value of 4 – 6. A moderate to low CC value is indicative of low habitat selectivity and a tolerance for disturbance. Therefore, species with a high CC value typically indicates habitat with low disturbance levels, which are of higher botanical quality. A full plant list is provided in **Appendix D-1**.

The majority of native species observed within the property are considered common and widespread locally, provincially, and globally. No SAR or globally rare species were noted within the property; however, one species is considered provincially rare (S-Rank of less than S4); Black Ash (*Fraxinus nigra*; S3). As of November 2018, Black Ash was designated Threatened by COSEWIC due to anticipated population decline in response to continued range expansion of Emerald Ash Borer across Canada. This species was observed in low numbers in Units 1, 2a, and 4. Although this species has been identified as Threatened by COSEWIC, it is not listed as a SAR under the ESA or federal Species at Risk Act (SARA). Therefore, although Black Ash preservation is encouraged to protect Ontario’s biodiversity, it is not currently required under these two Acts. However; the presence of Black Ash does result in the SWH designation, as Habitat for Special Concern and Rare Wildlife Species, which applies to ELC communities in which it is found to occur.

The majority of native species observed within the Site are considered common; however, four species observed within the Site are considered locally rare (Johnson, 2016); Woodland Sedge (*Carex blanda*), Meadow Horsetail (*Equisetum pratense*), Tall Mannagrass (*Glyceria grandis*), and Cut-leaved Grapefern (*Sceptridium dissectum*). Two additional species, Lesser Clearweed (*Pilea fontana*), and Marsh Horsetail (*Equisetum palustre*), were observed within the property though not within the subdivision footprint.

A greater number of vascular flora were identified by AWS in 2008 (137 species), likely due to the greater area that was surveyed; AWS completed more extensive surveys in the northern portion of the property, and WSP focused on the area proximate to the proposed subdivision. The floristic quality assessment indicated similar percentages of native / non-native species, and level of disturbance indicated by CC values. One locally rare species that was noted in the 2008 EIS, is Male Fern (*Dryopteris filix-mas*), was not observed during the 2020 surveys, despite specific effort to relocate this species. Given the extensive three-season botanical inventory surveys undertaken by WSP, it is likely this species was either present in the northern portion of the property or is no longer present.

---

## 4.2 WILDLIFE

Habitat features present within the property, as discussed above, include mostly forested habitat with wooded swamps and small marsh patches. The broader landscape includes residential properties, Lake Huron and the associated shoreline, agricultural fields. Habitats within the property are relatively undisturbed by anthropogenic influences with the exception of recreational trails throughout. The suite of wildlife species found was expected and typical of forest habitat that provide interior habitat. open field habitats and smaller, more isolated natural / semi-natural forest patches. The Site is a relatively small portion of a larger (~155.4 ha) tract of similar habitat extending south and north beyond the Site (**Figure 5**).

During the 2020 field investigations, a total of 38 avifauna, three mammals and two herpetofauna (total of 43 wildlife species) were recorded within the property. Previous field investigations by AWS in 2008 had identified a total of 23 avifauna, and no other wildlife species. A breeding bird species list for the property

---

<sup>1</sup> Coefficient of Conservatism: Rank of 0 to 10 based on plants degree of fidelity to a range of synecological parameters: (0-3) Taxa found in a variety of plant communities; (4-6) Taxa typically associated with a specific plant community but tolerate moderate disturbance; (7-8) Taxa associated with a plant community in an advanced successional stage that has undergone minor disturbance; (9-10) Taxa with a high fidelity to a narrow range of synecological parameters (Oldham et al., 1995)

(2020) is presented in **Appendix D-2**, while all other wildlife species are listed in appropriate sections below.

Survey results are discussed in the following sections.

#### 4.2.1 BIRDS

Breeding bird surveys were conducted according to standard protocols established in the Ontario Breeding Bird Atlas (Cadman et al. 2007). Two survey visits were completed during appropriate timing (early morning surveys; June and early July) and suitable weather conditions (low wind and no precipitation). Additional species were also recorded during the fall vegetation surveys, although these observations do not provide any evidence of breeding. Breeding bird surveys were conducted by qualified, experienced staff and involved walking transects throughout each vegetation unit within the property, with frequent listening / observation stops. Species, abundance and level of breeding evidence were recorded for all avifauna observations.

Surveys were conducted on June 22, and July 7, 2020. In total, 38 species were recorded within the property (See **Appendix D-2**). Species include generalists which tolerate some human disturbance (such as American Goldfinch [*Spinus tristis*], American Robin [*Turdus migratorius*], Black-capped Chickadee [*Poecile atricapillus*]), as well as forest interior, and wetland grassland specific species (such as Yellow-bellied Sapsucker, Black-throated Green Warbler, Black-throated Blue Warbler, Ovenbird, Winter Wren, and Common Yellowthroat [*Geothlypis trichas*]). Eight species observed during the 2008 field investigations were not observed in 2020: Veery, Eastern Phoebe (*Sayornis phoebe*), Ruffed Grouse (*Bonasa umbellus*), Yellow Warbler (*Setophaga petechia*), Eastern Screech-owl (*Megascops asio*), Chipping Sparrow (*Spizella passerina*), Baltimore Oriole (*Icterus galbula*), and Rose-breasted Grosbeak (*Pheucticus ludovicianus*).

Species with potential sensitivities are outlined below.

- **Breeding Species:** 33 species are considered ‘breeding’ (i.e., ‘possible’, ‘probable’ or ‘confirmed’ breeding evidence)<sup>2</sup>. One species, Ring-billed Gull (*Larus delawarensis*), observed flying overhead, is a potential breeder within the local landscape but with no evidence of nesting within the property. All other species were observed during fall migration, and do not breed in the broader landscape.

<sup>2</sup> **Ontario Breeding Bird Atlas - Breeding Evidence Codes:**

**OBSERVED**

X Species observed in its breeding season (no breeding evidence).

**POSSIBLE**

H Species observed in its breeding season in suitable nesting habitat.

S Singing male(s) present, or breeding calls heard, in suitable nesting habitat in breeding season.

**PROBABLE**

P Pair observed in suitable nesting habitat in nesting season.

T Permanent territory presumed through registration of territorial behaviour (song, etc.) on at least two days, a week or more apart, at the same place.

D Courtship or display, including interaction between a male and a female or two males, including courtship feeding or copulation.

V Visiting probable nest site

A Agitated behaviour or anxiety calls of an adult.

N Nest-building or excavation of nest hole.

**CONFIRMED**

DD Distraction display or injury feigning.

FY Recently fledged young (nidicolous species) or downy young (midifugous species), including incapable of sustained flight.

AE Adult leaving or entering nest sites in circumstances indicating occupied nest.

FS Adult carrying fecal sac.

CF Adult carrying food for young.

NY Nest with young seen or heard.

- **Species at Risk:** One SAR species with breeding evidence was recorded within the property; Eastern Wood-pewee (Probable Breeding; Special Concern), 2 individuals were observed within the Site and an additional 2 were observed within the larger property, singing in appropriate habitat during the breeding season. Details concerning the observation these species are discussed further in **Section 4.4**.
- **Nationally / Provincially Significant:** None of the species observed are provincially or nationally rare species (i.e., Srank S1-S3; Grank G1-G3).
- **Area Sensitive:** Of the species considered to be breeding within the property, eight are classified as *Area Sensitive* per criteria in MNR (2015): Yellow-bellied Sapsucker, Red-breasted Nuthatch, Blue-headed Vireo, Northern Parula, Black-throated Green Warbler, Black-throated Blue Warbler, Ovenbird and Winter Wren. One additional area sensitive species (Veery [*Catharus fuscescens*]) was observed in 2008, but not in 2020.

Great Egret was noted in the background review completed for the AWS EIS (2008); however, it was not observed during that study, nor was it observed in 2020. There is no suitable breeding habitat within or adjacent to the Site. The Lake Huron shoreline provides foraging and dispersal habitat, however the only known breeding record in the area is Chantry Island, located 2.5 km to the northwest (Owen Sound Field Naturalists 2004).

---

#### 4.2.2 AMPHIBIANS AND REPTILES

Amphibian calling activity was assessed using the Marsh Monitoring Program (MMP) protocol (Bird Studies Canada 2008). Due to timing restriction related to project start date, only one of the normal three rounds of surveys were completed during the spring, on June 21, 2020. Following guidelines of the MMP, the survey was conducted during a suitable time of the year and under appropriate weather conditions: low wind and night time air temperatures were greater than 17°C. Calling activity from the station was assessed using 3 minutes of passive listening. Surveys started one half hour after sunset and were completed before midnight.

- Surveys were completed at one station within the Site; the station was selected to best cover an area with potential amphibian breeding habitat within the subdivision footprint.
- Using the MMP, amphibian calling activity was rated using three levels: Level 1 (individual calls can be counted with no overlap), Level 2 (some calls can be counted or estimated, some overlap) or Level 3 (calls continuous and overlapping, individuals not distinguishable).
- Incidental amphibian observations were also noted during other surveys.

No amphibians were heard or otherwise observed during the single amphibian calling survey. Two anuran species were recorded incidentally during other surveys; Green Frog (*Lithobates clamitans*) and Wood Frog (*Hyla versicolor*). Habitat conditions observed in the Site, combined with available background data (ORAA, No Date), suggest that there is potential for other common amphibian species to occur in the Site, such as Eastern Red-backed Salamander (*Plethodon cinereus*), American Toad (*Bufo americanus*).

One reptile species was observed, Eastern Gartersnake (*Thamnophis sirtalis sirtalis*), and there is potential for common reptile species, including, Dekay's Brownsnake (*Storeria dekayi*), and Red-bellied Snake (*Storeria occipitomaculata*).

---

#### 4.2.3 GENERAL WILDLIFE

In addition to the targeted surveys described in the preceding sections, a general wildlife survey and habitat assessment was undertaken during all field surveys, as follows:

- Recording all direct wildlife observations and wildlife signs (including browse, track / trails, animal scat, bird nesting activity, tree cavities, burrows and vocalizations) and identifying potential wildlife usage and habitat functions associated with vegetation communities;
- Assessing SAR habitat availability; and
- Assessing potential for Significant Wildlife Habitat (SWH) features within the property.

In addition to breeding birds and herpetofauna results described above, three mammal species were observed within the property during the field surveys; Eastern Chipmunk (*Tamias striatus*), White-tailed Deer (*Odocoileus virginianus*), and Porcupine (*Erethizon dorsatum*). Unidentified bats were also observed foraging in forest gaps during the amphibian survey. The species of bat was not confirmed; however, forested habitats in the Site are likely to support suitable habitat for SAR bats (Little Brown Bat [*Myotis lucifugus*], Small-footed Bat [*M. leibii*], Northern Long-eared Bat [*M. septentrionalis*], and Tri-colored Bat [*Perimyotis subflavus*]), including potential maternity roost habitat. SAR bats and potential for habitat are discussed further in **Section 4.4**. Although not observed, it is likely that other common mammal species such as Eastern Cottontail (*Sylvilagus floridanus*), Groundhog (*Marmota monax*) and Red Fox (*Vulpes vulpes*), Striped Skunk (*Mephitis mephitis*), Raccoon (*Procyon lotor*) and other rodent species inhabit the Site.

---

### 4.3 AQUATIC

Aquatic surveys were not completed by WSP as part of the field program. It was determined, through consultation with SVCA (**Appendix B**), that detailed habitat assessments would only be required if the stormwater treatment was less than ‘enhanced’ and/or a buffer of less than 30 m was proposed for the watercourse. As an enhanced treatment system is proposed for the development and a 30 m buffer has been maintained to the watercourse aquatic surveys were not completed.

Lake Huron is located approximately 120 m west of the proposed subdivision and provides habitat for an assemblage of cool and cold water fish species, including Atlantic Salmon (*Salmo salar*), Brook Trout (*Salvelinus fontinalis*), Brown Bullhead (*Ameiurus nebulosus*), Banded Killifish (*Fundulus diaphanus*), Black Bullhead (*Ameiurus melas*), Black Crappie (*Pomoxis nigromaculatus*), among numerous others (Government of Ontario, 2015). A small watercourse is identified in LIO spatial data and is shown on **Appendix A, Figure 2** as ‘watercourse (MNR)’. Work completed by AWS (2008) confirmed that this watercourse is a lowland area with periodic sheet flow and no defined stream channel.

The permanent watercourse identified adjacent to the Site and shown on **Appendix A, Figure 2** does not appear in LIO data or other background review sources. Mapping included within this report was drawn from the Draft Plan of Subdivision (2009) and the description provided herein was drawn largely from the 2008 EIS Report prepared by AWS, with some additional detail gathered during botanical inventories completed by WSP in 2020. This watercourse flows along the northern perimeter of the proposed subdivision in a northwesterly direction on the eastern boundary of the subdivision and then generally flows in a westerly direction until it drains into Lake Huron. The watercourse is thought to provide habitat for a variety of resident and migratory Cyprinidae species (AWS, 2008); additional fisheries data was not found through the review of background sources or agency consultation. Observations made during the 2020 field investigations completed within the bounds of the property, supported the designation of the stream as permanent, however, several areas with intermittent secondary channels were also noted (**Appendix A, Figure 4**). Two groundwater upwellings were identified by AWS staff (2008) and contributed to the designation of this watercourse as a cold-water system. The location of these seeps could not be verified by WSP field staff given the absence of GPS coordinates, though it is assumed that the seeps are still present.

## 4.4 SPECIES AT RISK

SAR are defined here as species that are “designated” by the COSEWIC and / or listed under the SARA and species “designated” by the Committee on the Status of Species at Risk in Ontario [COSSARO], including those Endangered and Threatened species listed and regulated under Ontario’s ESA [2007]).

A SAR screening exercise was completed to identify SAR that have potential to occur on the Site, in order to identify the need for additional targeted SAR surveys, and to inform mitigation, and / or ESA requirements. This screening exercise involved compiling a list of potential SAR for the property based on a review of the background data provided by the MNR and MECP as well as the NHIC database, Ontario Breeding Bird Atlas, eBird and Ontario Reptile and Amphibian databases. In summary, there were 16 potential SAR identified through agency consultation and review of background sources for the property and general area.

These 16 potential SAR were screened in **Appendix C** for likelihood of presence and likelihood of impact from the project works. Nine of these species were deemed to have minimal potential to occur within the project limits based on extremely limited and / or well documented species range, or the absence of suitable habitat conditions and are not discussed further in this document. For details on all species identified in the background review refer to **Appendix C**. The remaining seven species are discussed below.

### CONFIRMED SPECIES AT RISK

The following SAR species was confirmed within the Site and wider property:

- **Eastern Wood-pewee** (Special Concern, COSEWIC and COSSARO): two individuals were observed singing in appropriate habitat during both breeding bird surveys, indicating probable breeding. Abundant suitable habitat is present throughout much of the property, and in the rest of the forest tract located outside of the Site. Approximate locations of all individuals, including 2 additional individuals observed within the larger property, are indicated in **Appendix A, Figure 4**.

### POTENTIAL SPECIES AT RISK

Six SAR are moderately to highly likely to occur within or adjacent to the Site:

- **Wood Thrush** (Special Concern, COSEWIC and COSSARO): There is moderate potential for this species to occur within the Site, despite not being observed during either 2008 or 2020 field investigations. The majority of the property supports deciduous and mixed forests with an open subcanopy / understory vegetation, which lack the well-developed understory preferred by this species. Nevertheless, small pockets of dense forest are present in Units 2a, 2b and 3. Similar habitat is likely available in the retained forest tract to the north of the proposed development.
- **Canada Warbler** (Special Concern, COSEWIC and COSSARO): There is moderate potential for this species to occur within the Site, despite not being observed during either 2008 or 2020 field investigations. The majority of the property supports deciduous and mixed forests and swamps with an open subcanopy / understory vegetation which lack the dense shrub layer preferred by this species, however small pockets of dense wet forest are present in Units 2a, 2b, 3, and 4. Similar habitat is likely available in the retained forest tract to the north of the proposed development.
- **SAR bats** (Little Brown Bat, Small-footed Bat, Northern Myotis, and Tri-coloured Bat; Endangered, COSEWIC and COSSARO); These species have moderate to high potential in the forest tract, both within and adjacent to the Site. Bats were observed during the nocturnal amphibian survey, although the species was not confirmed. Suitable maternity roost trees are likely present throughout the forest tract and foraging habitat is present over the forest and in forest gaps, as well as the fields and shoreline of Lake Huron outside of the Site.



The ESA protects Threatened and Endangered species, as well as their habitats. Habitats for species of Special Concern are granted protection as SWH, specifically *Special Concern and Rare Wildlife Species*, refer to **Section 4.5.2**.

See **Section 7.4** for recommended mitigation measures and next steps regarding SAR.

---

## 4.5 NATURAL HERITAGE FEATURES

Based on the background review, several designated features were determined to be present within or adjacent to the Site. As impact assessment is provided in **Section 6**, and mitigation recommendations for these features are provided in **Section 7**.

NHF within, or adjacent to the Site included significant woodlands, significant wildlife habitat, fish habitat, habitat of threatened and endangered species, in addition to key hydrological features and natural hazards.

---

### 4.5.1 SIGNIFICANT WOODLANDS

The CBOP (2017) and the SSOP (2014) identifies the forest tract that contains the Site as significant. This tract extends north to South Street, and south to County Rd. 10, though it is almost entirely bisected by the Collard Way / Carter Drive and Pegasus Trails subdivisions. This forest area is also located within the MNRF's Natural Heritage System (NHS) limits.

---

### 4.5.2 SIGNIFICANT WILDLIFE HABITAT

In accordance with the Significant Wildlife Habitat Technical Guide (OMNR 2000) and Ecoregion Criteria Schedules for Ecoregion 6E (MNRF, 2015), candidate and confirmed SWH were identified within or adjacent to the Site.

SWH is broadly categorized as seasonal concentration areas (e.g., conifer forests for deer wintering), rare vegetation communities or specialized habitats for wildlife, habitats of species of conservation concern (excluding the habitats of endangered and threatened species), and animal movement corridors. The following four types of SWH were identified within or adjacent to the Site during field investigations:

#### Seasonal Concentration Areas

- Candidate (unconfirmed) Bat Maternity Colony: Bat maternity colonies are typically located in mature deciduous or mixed forest stands of >10/ha, where trees with large diameter (>25cm DBH) are present. Given the mature nature and large forested area, bat maternity colony SWH is likely present throughout the Site. Further surveys (i.e. acoustic monitoring or exit surveys) would be required to determine if the habitat is 'confirmed' (i.e. use by >10 Big Brown [*Eptesicus fuscus*] or >5 Silver-haired bats [*Lasionycteris noctivagans*]).

### Rare vegetation communities or specialized habitats for wildlife

- Confirmed Woodland Area-Sensitive Bird Breeding Habitat: Certain woodland bird species require large, natural blocks of mature woodland habitat that provide sensitive interior forest habitat. Candidate habitat includes large mature (>60 years old) forest stands or large woodlots (>30 ha) where interior forest breeding birds are present and breeding. To confirm SWH, the presence of nesting or breeding pairs of 3 or more of the listed wildlife species are required. During the 2020 site investigations, 8 of the listed 12 species were present, namely, Yellow-bellied Sapsucker (*Sphyrapicus varius*), Red-breasted Nuthatch (*Sitta canadensis*), Blue-headed Vireo (*Vireo solitarius*), Northern Parula (*Setophaga americana*), Black-throated Green Warbler (*Setophaga virens*), Black-throated Blue Warbler (*Setophaga caerulescens*), Ovenbird (*Seiurus aurocapilla*) and Winter Wren (*Troglodytes hiemalis*). One additional area sensitive species (Veery [*Catharus fuscescens*]) was observed in 2008 by AWS, but not in 2020.

### Habitat for Species of Conservation Concern

- Confirmed Special Concern and Rare Wildlife Species (Eastern Wood-Pewee, Black Ash): Eastern Wood-pewee was confirmed with breeding evidence in various locations in Unit 1. Black Ash was observed in small numbers in Units 1, 2a, and 4. The SWH includes the entire ELC vegetation polygon in which the Special Concern Species was located. Details concerning habitat requirements and abundance of Eastern Wood-pewee species are provided in **Section 4.4**, and **Appendix C**.

### Specialized Habitats of Wildlife Considered SWH

- Seep and Springs: Seeps were identified in the eastern portion of the property by AWS during field investigations in 2008. Although not observed by WSP in 2020, the seeps are likely still present.

Candidate and confirmed SWH habitats outlined above are associated with woodland habitats on and adjacent to the Site. As a result, the entire woodland polygon is considered SWH, though specialized habitats may only be associated with specific ELC polygons.

### 4.5.3 FISH HABITAT

Fish habitat is present in and within 120 m of the Site. Habitat for cool and cold-water species is found in Lake Huron, and the unnamed permanent watercourse adjacent to the Site is thought to provide cold water habitat. Additional information is provided in **Section 4.3**.

### 4.5.4 HABITAT OF ENDANGERED AND THREATENED SPECIES

The likelihood of endangered and threatened species and habitat present on or adjacent to the Site was determined using field observations and a SAR screening table (**Appendix C**). Four Endangered or Threatened species were assessed to have a moderate to high likelihood of being present on or within the vicinity of the Site. In addition, three species listed as Special Concern on the Species at Risk in Ontario (SARO) List also have potential to occur in or adjacent to the Site. Eastern Wood-pewee, a species of Special Concern, was the only SAR confirmed on or within 120 m of the Site. For more detailed information regarding SAR, refer to **Section 4.4**.

### 4.5.5 KEY HYDROLOGICAL FEATURES

A cold-water stream bisects the property; the AWS EIS (2008) mapped and identified the stream channel as permanent from Lake Huron to the eastern portion of the property. WSP did not survey the entire channel, however general field investigations are in line with these findings; the only observed intermittent side

branches were located in Unit 2. Additionally, groundwater seeps were observed during the 2008 field investigations, and approximate locations are shown in **Appendix A, Figure 4**.

Three wetland units have been identified within the Site, including two that flank the watercourse outside of the Site (Units 2 and 3), and two narrow linear wetlands within and directly adjacent to the Site (eastern and western Unit 4). In addition, multiple small depressions that may support vernal pooling in early spring are present in Unit 1.

---

#### 4.5.6 NATURAL HAZARDS

The Environmental Hazard designation within the SSOP (2014) is applied to areas where there are one or more of the following: floodplains, steep and unstable slopes, wetlands, erosion prone lands, organic and unstable soils, low-lying areas, poorly drained soils, surface water features, as well as flooding, erosion and dynamic beach hazards associated with Lake Huron. These natural hazards may be severe enough to cause property damage and may pose a risk to public health and/or safety if the lands were to be developed.

The subdivision is located largely within an area designated as Shoreline Residential, while remaining portions of the property have been identified as Environmental Hazard on Schedule A of the SSOP (2014). As per Section 3.20.4.2 of the SSOP, areas designated as Shoreline Residential have been delineated to avoid hazardous features through preliminary environmental review studies. New residential uses are permitted provided that impacts to the environment are minimized to the extent possible, and surface and subsurface drainage are addressed. A geotechnical investigation (CMT Engineering Inc., 2020) was completed in support of the application for draft plan approval to assess the existing soil and groundwater conditions on the Site and to make recommendations for safe building design and construction. The report indicates that wet and saturated soils were encountered in the boreholes and identifies measures to manage surface and subsurface drainage during and after construction. Provided that recommendations in the geotechnical report (CMT Engineering Inc., 2020) are considered during the design phases, concerns related to Natural Hazards are expected to be addressed and will not be discussed further in this report.

## 5 PROPOSED WORKS

---

### 5.1 DRAFT PLAN OF SUBDIVISION

The proposed subdivision includes the creation of 14 low-density residential houses of similar character to those located in the adjacent Collard Way / Carter Drive and Pegasus Trails subdivisions. The 3.7 ha subdivision is to be located in the southern portion of the property in the lands currently designated as Shoreline Residential and occupies approximately 23% of the 16.1 ha property. The lot fabric and subdivision limits are consistent with the earlier Draft Plan of Subdivision that was approved in 2009. Refer to the Draft Plan of Subdivision (**Appendix G**) for details concerning the proposed development.

The low-density nature of the proposed subdivision is intended to facilitate servicing by individual septic systems and will also aid with tree retention. The subdivision boundaries respect a 30 m setback from the watercourse, as per the CBOP (2017), and a 10 m setback has been applied to unevaluated wetland units flanking the watercourse (**Figure 4**). Servicing for the subdivision will include construction of a perforated storm sewer system (PSS) designed by Cobide Engineering Inc. (2021b). The PSS is designed to handle storm flows from the road and manage subsurface drainage.

A hydrogeological evaluation was completed by Gaman Consultants Inc. (2021a) to determine the zone of influence of the PSS and to assess the potential for permanent negative impacts to sensitive receptors (e.g., wetlands and watercourses) adjacent to the proposed subdivision. The study indicated that a 30 m



zone of influence from all edges of the PSS will fall fully within the limits of the proposed subdivision, and as such, long-term negative impacts are not anticipated. The potential temporary impacts associated with construction dewatering were also assessed and are detailed in a separate report in support of a Category 3 Permit to Take Water (Gaman Consultants Inc., 2021b). Findings of these technical studies are considered in the impact assessment and mitigation recommendations provided in this report.

## 6 IMPACT ASSESSMENT

This section reviews potential impacts or condition changes to natural heritage features within or adjacent to the Site, based on construction activities (e.g., vegetation clearing and grading), as well as post-development occupancy activities (e.g., dumping of waste material or creation of indiscriminate trails). Direct and indirect impacts to designated natural heritage features, vegetation, wildlife, SAR, and aquatic habitat are reviewed in terms of immediate potential impacts and residual effects. For recommended mitigation measures, refer to **Section 7.0**.

---

### 6.1 VEGETATION

Development of the proposed subdivision will result in direct impacts to existing forest and wetland communities located within the Site. Potential direct and indirect, long- and short-term impacts to associated Natural Heritage Features and ecological functions are discussed in detail below.

---

#### 6.1.1 SIGNIFICANT WOODLAND

The wooded areas on the Site are part of a larger Significant Woodland. Potential impacts to the Significant Woodland include vegetation removals, the removal of the existing forest edge and the creation of a new edge, the removal of a small number of locally rare species, and indirect impacts to interior forest habitat. The subdivision will impact approximately 3.8 ha, which constitutes approximately 2.4% of the 155.4 ha contiguous woodland block on the north side of Concession 10 (**Figure 5**). A second woodland block approximately 110.8 ha in size occurs immediately south of Concession Road 10.

The anticipated impacts will be lessened by a number of factors:

- The implementation of a Tree Retention Plan that maintains 25% tree cover within the subdivision, will limit vegetation removal in each building lot and will provide a buffer to remaining forest, wetlands and aquatic habitat beyond the limits of the subdivision. It will also reduce the footprint of impact to approximately 2.85 ha or 1.8% of the larger woodland block.
- While the existing forest edge (approximately 200 m) will be impacted by the proposed development, the portions retained through the implementation of the Tree Retention Plan will continue to provide ecological functions of woodland edge habitats, including rain water interception and infiltration, erosion protection, nutrient cycling, improved aesthetics and carbon storage. Tree retention areas at the rear of the lots will create a treed buffer to the newly created forest edge, lessening the impacts of windthrow, introduction of invasive species, and predator access to the forest.
- The proposed subdivision is directly adjacent to the existing Collard Way / Carter Drive subdivision and recreational trails. This placement of the subdivision reduces fragmentation of the larger woodland block and allows for the maintenance of the wooded corridor connecting the coastal woodland blocks on either side of the Collard Way/ Carter Drive and Pegasus Trails subdivisions.

- Tree removal within the proposed subdivision does not directly impact interior woodland habitat (based on a 200 m buffer from the edge); however, by creating a new edge, it will indirectly impact approximately 4.2 ha (or 8%) of the interior woodland within 2 km of the Site. Approximately 46.6 ha of interior woodland habitat will remain within the forested blocks north and south of the Site (**Figure 5**). Impacts to interior woodland habitat have been minimized by locating the proposed subdivision adjacent to the Collard Way / Carter Drive subdivision.

With most construction activities, there is also potential for indirect impacts to adjacent retained vegetation features during and following construction, including vegetation clearing / damage beyond the Site, and spills of contaminants, fuels and other materials that may reach natural areas. Mitigation measures for these indirect impacts are outlined in **Sections 7.1** and **7.3**.

Although partial removal of the Significant Woodland is proposed, the location of the development directly adjacent to an existing residential area, the relatively small removal area compared to the overall size of the forested area, and the plans for tree retention minimize the impacts of the proposed subdivision and maintain the ecological functions of the wider Significant Woodland.

---

### 6.1.2 UNEVALUATED WETLANDS

The unevaluated wetlands within and adjacent to the Site have not been identified as provincially or locally significant. Anticipated direct impacts to unevaluated wetlands include the removal of approximately 0.16 ha of the western Unit 4 where it overlaps with subdivision (**Figure 4**). The western Unit 4 wetland proposed for removal is small and linear, and based on field observations is determined to provide limited ecological function. Although it possesses hydric soils and is characterized by wetland vegetation, it does not act as a wetland linkage, there is no evidence of seeps or springs, no permanent or temporary channel through the unit, limited evidence of spring vernal pooling, and no evidence of amphibian breeding habitat. The proposed setbacks to the watercourse and remaining wetlands shown on **Figure 4**, will protect more ecologically valuable wetland units along the stream corridor (Units 2 and 3). Efforts have also been made to protect the eastern Unit 4 which is more closely linked to the riparian corridor. Both the eastern and western Unit 4 wetlands likely convey shallow groundwater to the watercourse; however, given its small size, and absence of defined flows or seeps, the contribution from the western Unit 4 is expected to be minimal. Development of the subdivision will result in the removal of the western unit; however, it is expected that hydrological contributions to the watercourse will be maintained, albeit by the PSS which will intercept shallow groundwater and discharge into the watercourse slightly further downstream, ultimately still outletting into Lake Huron. The Lake Fringe Sub-watershed Report Card scores an “A” grade for wetland cover, suggesting that wetland communities are not limited in the broader landscape (Saugeen Conservation 2018), and minor removals, such as proposed here will not have significant impacts on the quality or quantity of wetlands within the wider area.

Potential changes in drainage patterns and moisture regimes have the potential to indirectly impact the form and function of remaining (Units 2, 3 and the eastern Unit 4). In particular, temporary impacts associated with construction dewatering and the permanent zone of influence associated with the PSS have been reviewed for their potential to impact remaining wetlands adjacent to the Site. The hydrogeological assessment conducted by Gaman Consulting Inc. (2021a) indicates that the zone of influence for the PSS is entirely contained within the proposed subdivision and will as such will not have long-term impacts on the retained wetland units. Temporary construction-related impacts from dewatering activities may extend as much as 87 m from the PSS location under the worst-case scenario and may overlap with the retained Unit 4 at the eastern limit of the subdivision. Potential lowering of the ground water table during dewatering may reduce soil moisture and availability of water for plant growth in this area. The community within Unit 4 is expected to be relatively tolerant of temporary drying, given that

dominant trees species, including Red Maple, Eastern Hemlock, Green Ash, and Eastern White Cedar, are tolerant to a wide range of moisture regimes (CW values of 0 to 3). Herbaceous plants, which are more vulnerable to drying, are present in great diversity (N = 26), and only five of these herbaceous species are obligate wetland species (CW = -5). Given that the dewatering period is expected to be less than a month, potential impacts to the wetland community are expected to be temporary. Some minor shifts in relative abundance of ground cover species may be observed favouring species more tolerant to fluctuating water levels; however, significant long-term changes are not anticipated.

The seeps / springs observed by AWS in 2008 are outside the zone of influence for both temporary dewatering activities as well as permanent groundwater changes from the PSS and will not be impacted.

---

### 6.1.3 HABITAT FOR SPECIES OF CONSERVATION CONCERN

Potential impacts to Habitat for Species of Conservation Concern are limited to the removal of a small number of provincially rare Black Ash (S3) in Vegetation Units 2 and 4.

It is likely that even with tree retention plans, some Black Ash will be removed. These species are likely to occur throughout the forest tract to the north of the Site and impacts to the its population are not considered significant.

Ultimately, the total area to be impacted by the proposed subdivision development is small, directly adjacent to an existing development, and significant similar forest and wetland habitat will be retained to the north of the Site. Ecological functions of the landscape are not anticipated to be significantly negatively impacted by the proposed subdivision development. Mitigation measures to further reduce impacts to Natural Heritage Features are outlined in **Section 7**.

---

## 6.2 WILDLIFE

As outlined above in the vegetation discussion, there will be partial removals of forest vegetation within the Site and the wildlife habitat associated with this vegetation will therefore also be affected. Potential impacts to Wildlife and associated Natural Heritage Features are discussed below.

### *Significant Wildlife Habitat*

The following SWH types identified within the Site are discussed in detail in their respective sections; Candidate Bat Maternity Colony (**Section 6.3**), Confirmed Woodland Area-Sensitive Bird Breeding Habitat (**Section 6.1**), Confirmed Special Concern and Rare Wildlife Species (Eastern Wood-pewee) (**Section 6.3**), and Confirmed Specialized Habitats of Wildlife Considered SWH (Seep and Springs) (**Section 6.1**).

### *Breeding Bird Habitat*

The removal of vegetation within the breeding bird season has the potential to impact nests, eggs and young of numerous species. Specific mitigation measures to address the protection of breeding birds as per the MBCA are outlined in **Section 7.2.1**.

### *Other Wildlife*

The removal of vegetation within the Site, as well as other construction activities, has the potential to impact other resident wildlife, such as turtles and snakes, that inhabit or travel into the construction zone. General mitigation measures to address the protection of all other wildlife are outlined in **Section 7.2.2**.

These Natural Heritage Features are present throughout the Site and overlap with the Significant Woodland area. Impacts discussed in **Section 6.1** above are generally applicable to SWH within the Woodland.

Ultimately, the total area to be impacted by the proposed subdivision is small, directly adjacent to an existing development, and significant greater similar wildlife habitat will be retained to the north of the Site. Wildlife habitat functions of the landscape are not anticipated to be significantly negatively impacted by the proposed subdivision development. These potential impacts to wildlife and Natural Heritage Features can be managed through implementation of the wildlife mitigation measures outlined in **Section 7.2**, and SAR mitigation measures outlined in **Section 7.4**.

---

## 6.3 SPECIES AT RISK

In addition to the above noted impacts to general wildlife, the background review and field investigations identified seven SAR which have moderate to high potential to occur on or adjacent to the Site. Only one SAR, Eastern Wood-pewee, a species of Special Concern was confirmed during the field investigations. These seven species have the potential to be impacted by the proposed works, as described below.

- **Eastern Wood-pewee** (Special Concern) - Breeding evidence was recorded in deciduous forest habitat in Unit 1, within the Site where tree removals are required. This species is not particularly area sensitive and is known to occur in a variety of forest types, including relatively small woodlots adjacent to developments. Although the works will reduce the areas of suitable nesting habitat the overall effect on local populations is expected to be minimal. The number of breeding pairs in the forested tract reduced slightly, due to loss of forest habitat.
  - **Wood Thrush and Canada Warbler** (Special Concern) – No evidence of these species was recorded in either 2008 or 2020, however some potential habitat is present in Units 2a and 2b. There is minimal potential for impacts on the species as abundant suitable habitat will be retained north of the Site, and habitat within the Site is marginal.
  - **Endangered bats** (Little Brown Bat, Northern Myotis, Eastern small-footed Myotis and Tri-coloured Bat): Although Little Brown Myotis typically use buildings for maternity habitat, all species roost in large trees within forested habitats. Trees with features such as cavities, crevices, knots, cracks, loose bark or leaf clusters could potentially provide suitable bat maternity roosting habitat. Given that tree removals are required for construction of the proposed subdivision, there is potential for direct impacts to roosting bats, including lactating females and young, if tree removal, or construction occurs within the sensitive period for bats. Although the habitat to be removed is of high quality, abundant similar habitat is present in the remainder of the forested tract to the north. Additionally, no particularly suitable trees were observed during field investigations. These species receive species and general habitat protection under the ESA and mitigation measures for these Endangered bats are outlined in **Section 7.4**.
- 

## 6.4 AQUATIC

Construction activities for the proposed works have the potential to result in both permanent and temporary impacts to the aquatic habitat within the property and downstream. Potential long-term impacts may include the following:

- thermal impacts from loss of shade cover;
- water quality impairment to the watercourse and Lake Huron from the transport of deleterious substances, such as excessive nutrient loading from septic systems;
- the interruption of groundwater input for watercourse base flows due to water flux with the PSS; and,



- impacts to water quality and thermal regime associated with the stormwater discharge into the watercourse.

With appropriate design considerations and mitigation, these potential impacts are expected to be effectively mitigated, so as to avoid long-term negative impacts on the watercourse and associated fish habitat. Specifically:

- The watercourse setback limit has been developed to provide a minimum buffer of 30 m with most areas buffered at > 30 m (**Appendix A; Figure 4**) which will maintain canopy cover along the watercourse and reduce the potential for thermal impacts.
- Private septic systems are to be designed to ensure that impacts to down-gradient aquatic features do not occur.
- The permanent zone of influence associated with the PSS is expected to be approximately 30 m from all edges of the PSS and is entirely contained within the proposed subdivision (Gaman Consultants Inc., 2021a). As a result, impacts to the stream base flows are not anticipated.
- The stormwater management plan is to include enhanced treatment to ensure that impacts to water quality within the watercourse and Lake Huron do not occur. Thermal impacts associated with stormwater discharge from the PSS are anticipated to be minimal based on anticipated discharge volumes and monitoring completed for previous similar construction projects (Cobide Engineering Inc., 2021b).

Potential temporary construction related impacts include the following:

- water quality impairment to the watercourse and Lake Huron from the transport of deleterious substances (i.e. sediment, fuel, lubricants); and,
- Impacts from construction dewatering activities. The groundwater table is close to grade and dewatering will be required to temporarily lower the water table to allow for installation of the PSS.

These temporary construction-related impacts are expected to be minimal, given the minimum 30 m setback from the watercourse. The estimated worst-case scenario zone of influence for construction dewatering is approximately 87 m in all directions from the proposed PSS location. As this zone of influence does not overlap with the watercourse and will be temporary in nature (less than one month), impacts to the watercourse or associated fish habitat are not anticipated as a result of the construction activities (Gaman Consultants Inc., 2021b). A dewatering plan that includes recommendations from the geotechnical (CMT Consulting Inc., 2020) and hydrogeological assessment for the Permit to Take Water (Gaman Consulting Inc., 2021b) should be prepared to address potential indirect impacts to the watercourse associated with dewatering discharge and erosion and siltation effects.

## 7 MITIGATION RECOMMENDATIONS

---

### 7.1 VEGETATION

Feature limits, setbacks, and environmental management recommendations were reviewed and refined through field visits, project team liaison, and details of the proposed works. Primary focal areas included the development interface bordering the woodland and wetlands, and consideration of natural environment features on surrounding lands, including buffer areas. Given that Site conditions between 2008 and 2020 are similar, many of the mitigation measures were also recommended in the 2008 EIS.



Recommended measures for mitigating effects to the local vegetation communities and their associated habitat functions include the following:

#### ***General Construction Mitigation for Vegetation***

- Minimizing the extent of vegetation removal and damage within construction access, work and staging areas, particularly adjacent to the woodland or wetlands. These areas will be clearly identified in the Contract documents, and then delineated in the field using erosion and sediment control fencing. Erosion and sediment control fencing will be maintained throughout the construction period.
- Re-stabilize and re-vegetate exposed soil surfaces as soon as possible, using native seed mixes where possible.
- Ensure that machinery arrives on site in a clean condition and is maintained free of fluid leaks, invasive species and noxious weeds.
- Conduct vehicle maintenance and fueling at the designated and properly contained maintenance areas in the works yards or at commercial garages located well away from retained vegetation areas.
- All construction-related materials, equipment, and construction-generated materials (e.g., sediment in dewatering or runoff from exposed soils, stockpiled soils or other materials from clearing and grubbing) shall be properly stored/contained, maintained, filtered and otherwise handled and managed at a distance of at least 30 m away from significant areas (e.g. watercourses and wetlands).

#### ***Tree Retention***

- As required by the SSOP (2014), a Tree Retention Plan has been prepared (**Appendix H**; Cobide Engineering Inc., 2021a), with the objectives of minimizing tree removal and disturbance, and protecting sensitive features (e.g., potential bat maternity roost habitat, Black Ash, and wetlands) to the extent possible.
- A minimum of 25% of tree cover across the Site will be maintained, comprised of retained natural forest area and post construction plantings. Vegetation planted for the purposes of restoring and / or establishing tree cover, and for landscaping purposes will consist of native species.
- Consistent with the AWS EIS (2008) recommendations, the Tree Retention Plan will identify acceptable building ‘footprints’, minimum tree density to be maintained, and minimum specifications for species / sizes for naturalized reforestation of disturbed sites and in keeping with mitigative measures.

#### ***Natural Heritage Feature Mitigation***

- To aid in maintaining the ecological functions associated with the Significant Woodland (including wildlife habitat functions for resident and migratory woodland birds), the woodland areas within the remainder of the property will be retained.

With these mitigation measures, the forested area to the north of the Site is of sufficient area to maintain the Significant Woodland designation and associated ecological functions.

---

## **7.2 WILDLIFE**

The vegetation mitigation measures outlined above are designed to minimize impacts to vegetation and protect adjacent vegetation areas, which in turn protect the associated wildlife habitat functions. However, it is also necessary to ensure the protection of breeding birds, as well as other wildlife that may nest or otherwise use areas where construction is proposed. Wildlife-specific mitigation measures are outlined below.

---

### 7.2.1 MIGRATORY BIRDS

Nesting migratory birds are protected under the Migratory Birds Convention Act, 1994 (MBCA). No work is permitted to proceed that would result in the destruction of active nests (nests with eggs or young birds), or the wounding or killing of birds protected under the MBCA and/or Regulations under that Act.

In order to protect nesting migratory birds, in accordance with the MBCA, the contractor will ensure that:

- Vegetation removal (including grubbing) will be avoided during the identified migratory bird nesting season (April 1 to August 31).
- No active nests (nests with eggs or young birds) will be removed or disturbed in accordance with the MBCA.

If a nesting migratory bird is identified within or adjacent to the construction site and the construction activities are such that continuing construction in that area would result in a contravention of the MBCA, all activities will stop, and the Contract Administrator and Environment Canada will be contacted to discuss mitigation options.

---

### 7.2.2 OTHER WILDLIFE

For the protection of wildlife in general, the contractor will ensure that:

- Any wildlife incidentally encountered during construction will not be knowingly harmed and will be allowed to move away on its own. In the event that an animal encountered during construction does not move from the construction zone and construction activities are such that continuing construction in the area would result in harm to the animal, all activities that could potentially harm the animal will cease immediately and the Contract Administrator will be notified.
- Any equipment parked overnight in the area will also be inspected to ensure no wildlife have climbed into or beneath it.

---

## 7.3 AQUATIC

In addition to the mitigation measures outlined above to protect vegetation within Natural Heritage Features, the following mitigation measures will be implemented to protect aquatic habitat where relevant based on the specific works during and following construction activities:

- An environmental management plan will be prepared, which will outline proposed best management practices with respect to the management of hazardous materials, spill prevention, spill response, dust control, ESC, construction dewatering and discharge management, monitoring, and mitigation, and safety and security of the Site with respect to the general public and wildlife.
- Erosion and sediment control (ESC) measures shall be identified in the contract and all associated contract drawings. More specifically, the Contractor shall control erosion and sediment caused by construction methods and operations including but not limited to stockpiles, access and service roads, storage and work areas, and non-designated disposal areas to meet all legislative requirements to prevent the entry of sediment into the watercourse and prevent any migration of sediment beyond the construction area.
- All construction-related activities should be controlled so as to prevent entry of any petroleum products, debris or other potential contaminants / deleterious substances, in addition to sediment as outlined above, to the watercourse.

- No equipment will be allowed to ford or otherwise enter the watercourse except as specified in the contract or unless authorized by the appropriate environmental agencies / permits.
- It is proposed that groundwater discharge from dewatering be directed to the tributary. Discharge will be passed through appropriate siltation controls, such as sedimentation tanks, rock check dams, silt bags, hay bales, splash pads, etc. before it is conveyed to the watercourse. With proper filtration it is anticipated that total suspended solids in the water will be low. Any additional impacts will be monitored and documented during dewatering, according to the monitoring requirements detailed in the Miramichi Shores Phase 4 Hydrogeological Report (Gaman Consultants Inc., 2021b).
- Further impacts from construction of individual residences will be mitigated by the completion of ESC plans, on a per lot basis.
- As recommended by AWS (2008), footings for residential development should not go below the groundwater elevations at the time of individual lot construction nor by design, impede groundwater flow patterns (no groundwater pumping) or lower the surrounding groundwater table.
- At later stages of the design process, a review of the proposed stormwater discharge plans should be reviewed by an aquatic ecologist to confirm that the project is in compliance with the Fisheries Act (1985) and that no further review is required by Department of Fisheries and Oceans.

---

## 7.4 SPECIES AT RISK

Based on the site-specific conditions, seven SAR have reasonable potential to be encountered incidentally within the work area, and therefore there is some risk of harm to these species, as discussed in **Section 6.3**. Of these seven species, four (Little Brown Bat, Northern Myotis, Eastern small-footed Myotis and Tri-coloured Bat) are listed as Endangered and receive species and habitat protection under the provincial ESA. The remaining three species (Eastern Wood-pewee, Wood Thrush, and Canada Warbler) are listed as Special Concern under the ESA. The following outlines specific mitigation measures to protect these SAR, as well as additional general SAR mitigation.

### ENDANGERED BATS

Contravention of Section 9 of the ESA (prohibition on killing, harming, harassing, etc.), can be avoided through timing restrictions for tree and vegetation removal.

- All tree removals will be undertaken during the bat hibernation period (i.e., October 1 to March 31) to ensure that no direct harm to SAR bat individuals occurs (including potential maternal and day-roosting bats). Additionally, the Tree Preservation Plan will identify and retain potential maternity roost tree (mature native deciduous trees with features such as cavities, crevices, knots, cracks, loose bark or leaf clusters), where possible.
- Impacts to woodland roosting habitat will be minimized by limiting tree removals to the extent possible and maintaining no less than 25% forest cover within the subdivision through the Tree Retention Plan (**Appendix H**). The proposed development will impact approximately 2.4% of the woodland polygon and over 250 ha of woodland will remain within 2 km of the Site. In this instance, it is unlikely that roost habitat is considered limiting, and impacts are not anticipated to be significant.



## OTHER SAR

The following mitigation measures are to protect SAR species generally;

- Adhere to mitigation measures outlined in **Section 7.2.1** for MBCA compliance to avoid impacts to other SAR bird species potentially nesting in the work area or vicinity including Eastern Wood-pewee, Canada Warbler, and Wood Thrush.
- If a SAR or possible SAR is found within or adjacent to the construction zone, all activities that could harm the SAR will cease immediately and the Contract Administrator will be notified. The Contract Administrator will then contact an MNR SAR Biologist for direction. SAR identification information can be found at: <https://www.ontario.ca/environment-and-energy/species-risk-ontario-list>
- SAR or potential SAR will not be handled prior to consulting with the MECP SAR Branch.

## 8 SUMMARY

This document provides an update to the AWS EIS (2008) to support an application for Draft Plan Approval for the proposed residential subdivision at the property described as Part of Lots 55 and 56, Town of Saugeen Shores, Ontario.

Potential vegetation impacts associated with the construction activities include the removal of Significant Woodland and Unevaluated Wetlands. The affected vegetation community types, species and associated habitats are common or are present within the broader landscape.

The wildlife species recorded within the current project area are generally common forest species, expected given the forested nature of the Site. Based on the available background information and field survey findings, seven SAR have potential to use habitat within the project limits, specifically: Eastern Wood-pewee, Canada Warbler, Wood Thrush, and Little Brown Bat, Small-footed Bat, Northern Long-eared Bat, and Tri-colored Bat. Impacts to SAR are generally limited to the temporary disturbance of foraging habitat. Specific measures for some species, such as the use of a timing restriction for tree removals to accommodate SAR bats and breeding birds, are required to ensure that impacts are minimized. Impacts related to SWHs correspond to impacts for the Significant Woodland and are covered under Significant Woodland and general wildlife mitigation.

Key recommendations include General Construction Mitigation for Vegetation, the creation of a Tree Preservation Plan to maintain 25% tree cover within the Site, timing windows to protect breeding birds and bats, and the creation of an environmental management plan including erosion and sediment control and dewatering mitigation. All other potential impacts to SAR, fish habitat, vegetation communities and general wildlife species can be minimized through general mitigation measures (e.g. vegetation timing window, installation of ESC measures). The identified mitigation measures will be incorporated with appropriate wording on construction drawings that will be prepared prior to any construction works following Draft Plan approval.

It is WSP's opinion that the results of this EIS indicate that potential negative impacts to the Natural Heritage Features or their ecological functions adjacent to the Site can be effectively avoided, minimized or mitigated with the implementation of mitigation measures provided in **Section 7.0**.

## 9 BIBLIOGRAPHY

- Bakowsky, W.D. 1996. Natural Heritage Resources of Southern Ontario: Vegetation Communities of Southern Ontario. Ontario Ministry of Natural Resources, Natural Heritage Information Centre.
- Cadman, M., D. Sutherland, G. Beck, D. Lepage and A. Couturier (eds). 2007. Atlas of the Breeding Birds of Ontario, 2001-2005. Bird Studies Canada, Environment Canada, Ontario Field Ornithologists, Ontario Ministry of Natural Resources and Ontario Nature, Toronto, xxii + 706 pp.
- Johnson, J. 2016. The Vascular Plants of the Bruce Peninsula. Keeling Printers Ltd, Owen Sound, Ontario.
- Cobide Engineering Inc. 2021a. Miramichi Shores Phase 4 Tree Retention Plan, Drawing 00101-TP1.
- Cobide Engineering Inc. 2021b. Stormwater Management Addendum Report, Miramichi Shores – Phase 4 Subdivision, February 2021.
- COSEWIC. 2018. COSEWIC assessment and status report on the Black Ash *Fraxinus nigra* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. xii + 95 pp. (<http://www.registrelp-sararegistry.gc.ca/default.asp?lang=en&n=24F7211B-1>).
- Gaman Consultants Inc. 2021a. Hydrogeological Report Perforated Storm Sewer Evaluation. Prepared for Miramichi Shores Land Development. 24 pp.
- Gaman Consultants Inc. 2021b. Miramichi Shores Phase 4 Hydrogeological Report: Permit to Take Water, Town of Saugeen Shores. 77 pp.
- Government of Ontario. 2015. Ontario GeoHub: Aquatic Resource Area Polygon Segment for Lake Huron (OGF\_ID: 67817948). <https://geohub.lio.gov.on.ca/datasets/aquatic-resource-area-polygon-segment-?geometry=-81.454%2C44.462%2C-81.323%2C44.484>.
- Lee, H. T, W.D. Bakowsky, J. L. Riley, J. Bowles, M. Puddister, P. Uhlig, and S. McMurray, 1998. Ecological Land Classification for Southern Ontario: First Approximation and its Application. Ontario Ministry of Natural Resources, Southcentral Region, Science Development and Transfer Branch. Technical Manual ELC-005.
- Oldham, M. J., W. D. Bakowsky and D. A. Sutherland. 1995. Floristic Quality Assessment System for Southern Ontario. Natural Heritage Information Centre, Ministry of Natural Resources. Peterborough, Ontario.
- Ontario Ministry of Natural Resources (OMNR). 2010. Natural Heritage Reference Manual for Natural Heritage Policies of the Provincial Policy Statement, 2005. Second Edition. Toronto: Queen's Printer for Ontario. 248 pp Peterborough, Ontario.
- Ontario Ministry of Natural Resources. 2013. Ontario Wetland Evaluation System Southern Manual. 3rd Edition, Version 3.3; Ontario Ministry of Natural Resources. 2013. Ontario Wetland Evaluation System Northern Manual. 1st Edition, Version 1.3
- Ontario Ministry of Natural Resources and Forestry (OMNRF) 2014. Significant Wildlife Habitat Mitigation Support Tool. Version 2014. Ontario Ministry of Natural Resources and Forestry. Regional Resources Sections: Southern, Northeast and Northwest Regions.
- Ministry of Natural Resources and Forestry (MNRF). 2015. Significant Wildlife Habitat Criteria Schedules For Ecoregion 6E. January, 2015. Regional Operations Division, Southern Region Resources Section. 39pp.
- Ontario Ministry of Natural Resources (OMNR). 2000. *Significant Wildlife Habitat Technical Guide*. Science Development and Transfer Branch, Southcentral Science Section. 151pp. + appendices.



Ontario Ministry of Natural Resources (OMNR). 2013. Ontario Wetland Evaluation System - Southern Manual. Queen's Printer for Ontario 3rd Edition, ISBN 978-1-4606-0200-3, Version 3.2.

Ministry of Natural Resources and Forestry (MNR). 2018. Make a Map: Natural Heritage Areas website: [http://www.gisoeapp.lrc.gov.on.ca/Mamnh/Index.html?site=MNR\\_NHLUPS\\_NaturalHeritage&viewer=NaturalHeritage&locale=en-US](http://www.gisoeapp.lrc.gov.on.ca/Mamnh/Index.html?site=MNR_NHLUPS_NaturalHeritage&viewer=NaturalHeritage&locale=en-US).

Ontario Nature. No date (accessed Sept 2017). Ontario's Reptile and Amphibian Atlas. Website: [http://www.ontarionature.org/protect/species/herpetofaunal\\_atlas.php](http://www.ontarionature.org/protect/species/herpetofaunal_atlas.php)

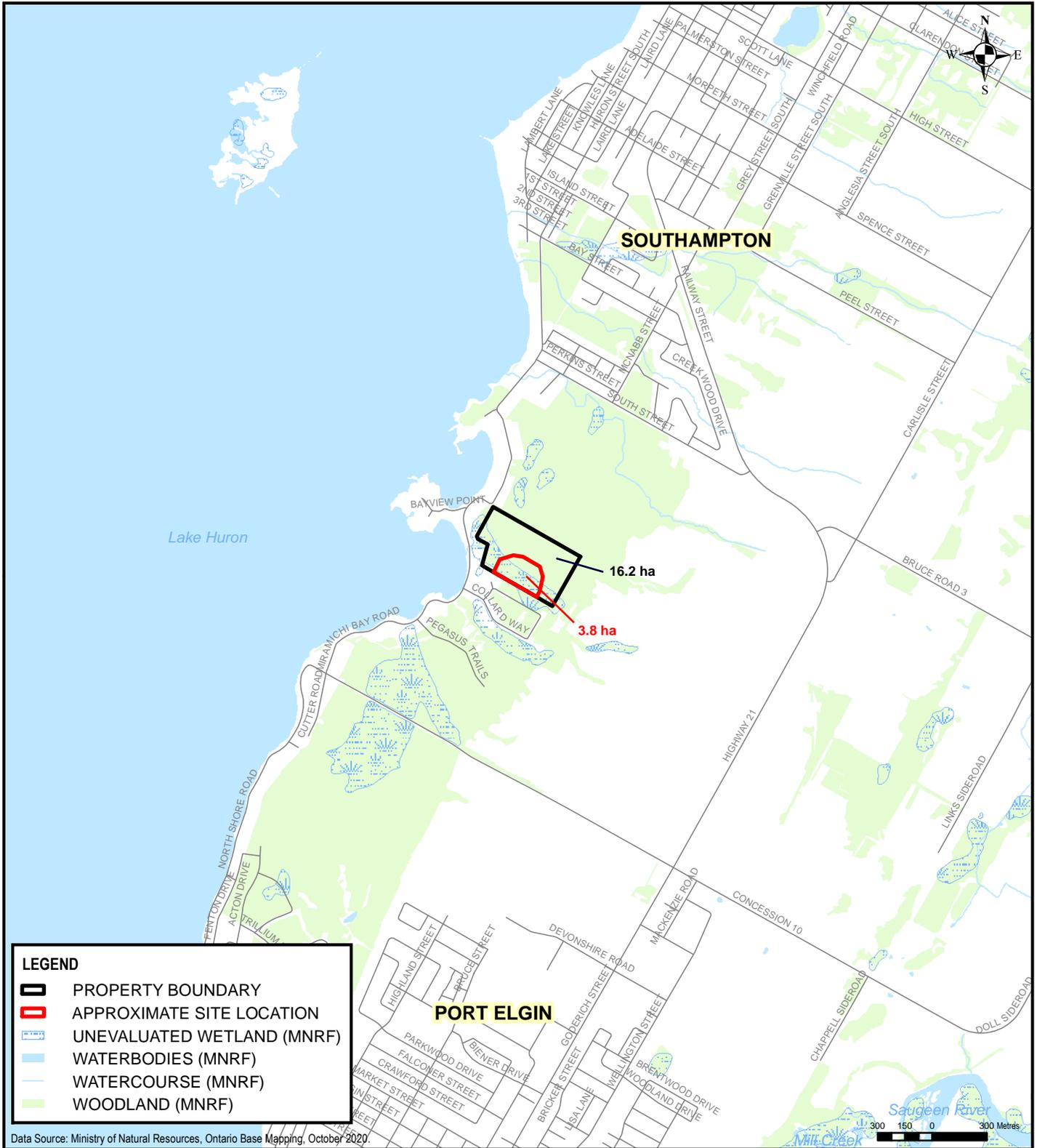
Owen Sound Field Naturalists. 2004. Rare and Endangered Species of Grey and Bruce Counties. Stan Brown Printers Limited, Owen Sound, Ontario.

Saugeen Conservation. 2018. Watershed Report Card; Lake Fringe Watershed. Website: [http://saugeenconservation.com/downloads/Lake\\_Fringe\\_1.pdf](http://saugeenconservation.com/downloads/Lake_Fringe_1.pdf)

# APPENDIX

## A FIGURES





LEGEND	
	PROPERTY BOUNDARY
	APPROXIMATE SITE LOCATION
	UNEVALUATED WETLAND (MNRF)
	WATERBODIES (MNRF)
	WATERCOURSE (MNRF)
	WOODLAND (MNRF)

Data Source: Ministry of Natural Resources, Ontario Base Mapping, October 2020.



126 DON HILLOCK DRIVE, UNIT 2  
 AURORA, ONTARIO CANADA L4G 0G9  
 TEL.: 905-750-3080 | FAX: 905-727-0463 | WWW.WSP.COM

PROJECT:	MIRAMICHI SHORES - PHASE 4 - EIS SAUGEEN SHORES, ONTARIO		SCALE: 1:30,000
TITLE:	SITE LOCATION MAP		DRAWN BY: TP
CLIENT:	-		CHECKED BY: EF
			PROJECT NO: 201-06434-00
			DATE: FEBRUARY 2021
			FIGURE NO: 1
			REV.: -



126 DON HILLOCK DRIVE, UNIT 2  
 AURORA, ONTARIO CANADA L4G 0G9  
 TEL.: 905-750-3080 | FAX: 905-727-0463 | WWW.WSP.COM

LEGEND

- ▭ APPROXIMATE SITE LOCATION
- WATERCOURSE (MNRW)
- PROPOSED DEVELOPMENT
- PERMANENT WATERCOURSE (AWS, 2008)
- - - INTERMITTENT WATERCOURSE (AWS 2008)
- TRAIL
- ☼ UNEVALUTED WETLANDS (MNRW, 2020)
- WOODLAND (MNRW, 2020)



20 10 0 20 Metres

Data Source: Ministry of Natural Resources, Ontario Base Mapping, October 2016.

CLIENT:

PROJECT:

MIRAMICHI SHORES - PHASE 4 - EIS  
 SAUGEEN SHORES, ONTARIO

PROJECT NO:  
 201-06434-00

DATE:  
 FEBRUARY 2021

DESIGNED BY:

DRAWN BY:

TP

CHECKED BY:

EF

FIGURE NO:

2

SCALE:

1:2,500

TITLE:

NATURAL HERITAGE FEATURES -  
 EXISTING MAPPING

DISCIPLINE:

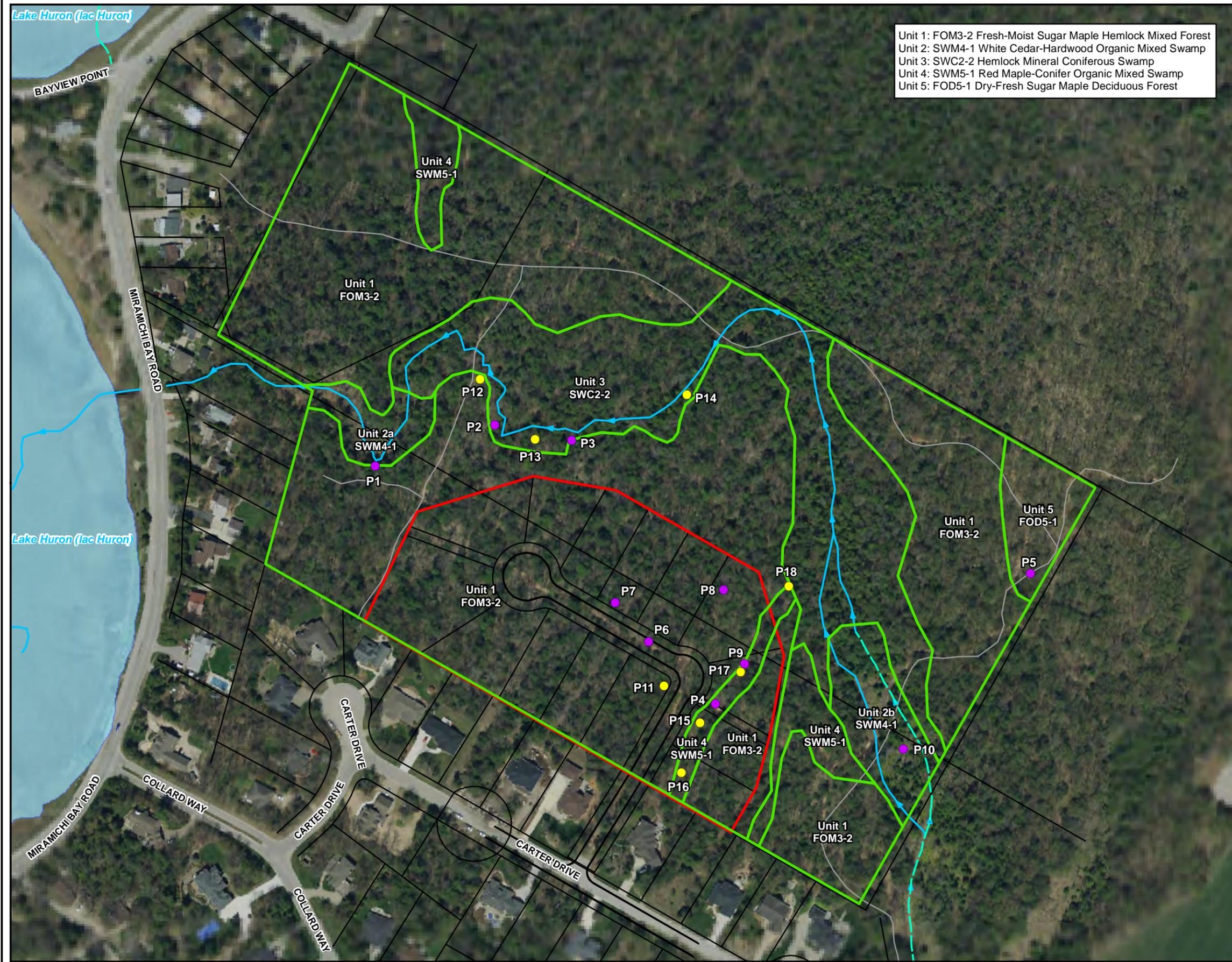
ENVIRONMENT

ISSUE:

-

REV.:

-



Unit 1: FOM3-2 Fresh-Moist Sugar Maple Hemlock Mixed Forest  
 Unit 2: SWM4-1 White Cedar-Hardwood Organic Mixed Swamp  
 Unit 3: SWC2-2 Hemlock Mineral Coniferous Swamp  
 Unit 4: SWM5-1 Red Maple-Conifer Organic Mixed Swamp  
 Unit 5: FOD5-1 Dry-Fresh Sugar Maple Deciduous Forest



126 DON HILLOCK DRIVE, UNIT 2  
 AURORA, ONTARIO CANADA L4G 0G9  
 TEL.: 905-750-3080 | FAX: 905-727-0463 | WWW.WSP.COM

**LEGEND**

- APPROXIMATE SITE LOCATION
- PROPOSED DEVELOPMENT
- TRAIL
- PERMANENT WATERCOURSE (AWS, 2008)  
CONFIRMED BY WSP
- INTERMITTENT WATERCOURSE (AWS, 2008)  
CONFIRMED BY WSP
- ECOLOGICAL LAND CLASSIFICATION
- PHOTO LOCATION
- SOIL PROFILE PHOTO LOCATION



Data Source: Ministry of Natural Resources, Ontario Base Mapping, October 2016.

CLIENT:  
-

PROJECT:  
**MIRAMICHI SHORES - PHASE 4 - EIS  
SAUGEEN SHORES, ONTARIO**

PROJECT NO: 201-06434-00	DATE: FEBRUARY 2021
-----------------------------	------------------------

DESIGNED BY:  
-

DRAWN BY:  
TP

CHECKED BY:  
EF

FIGURE NO: 3	SCALE: 1:2,500
-----------------	-------------------

TITLE:  
**ECOLOGICAL LAND CLASSIFICATION /  
VEGETATION COMMUNITY**

DISCIPLINE:  
**ENVIRONMENT**

ISSUE: -	REV.: -
-------------	------------



126 DON HILLOCK DRIVE, UNIT 2  
 AURORA, ONTARIO CANADA L4G 0G9  
 TEL.: 905-750-3080 | FAX: 905-727-0463 | WWW.WSP.COM

**LEGEND**

- APPROXIMATE SITE LOCATION
- PROPOSED DEVELOPMENT
- TRAIL
- PERMANENT WATERCOURSE (AWS, 2008)  
CONFIRMED BY WSP
- INTERMITTENT WATERCOURSE (AWS, 2008)  
CONFIRMED BY WSP
- WETLANDS (WSP, 2020)
- SEEP (AWS, 2008)
- AMPHIBIAN SURVEY LOCATION
- SIGNIFICANT WILDLIFE HABITAT

**CONSTRAINTS**

- PROPOSED SETBACK (GREATER OF 30 m  
WATERCOURSE SETBACK AND 10 m  
WETLAND SETBACK)
- 

**SPECIES AT RISK OBSERVATION**

- EASTERN WOOD-PEWEE (SC)

20 10 0 20 Metres

Data Source: Ministry of Natural Resources, Ontario Base Mapping, October 2016.



CLIENT:

PROJECT:

**MIRAMICHI SHORES - PHASE 4 - EIS  
SAUGEEN SHORES, ONTARIO**

PROJECT NO: 201-06434-00	DATE: FEBRUARY 2021
-----------------------------	------------------------

DESIGNED BY:  
-

DRAWN BY:  
TP

CHECKED BY:  
EF

FIGURE NO: 4	SCALE: 1:2,500
-----------------	-------------------

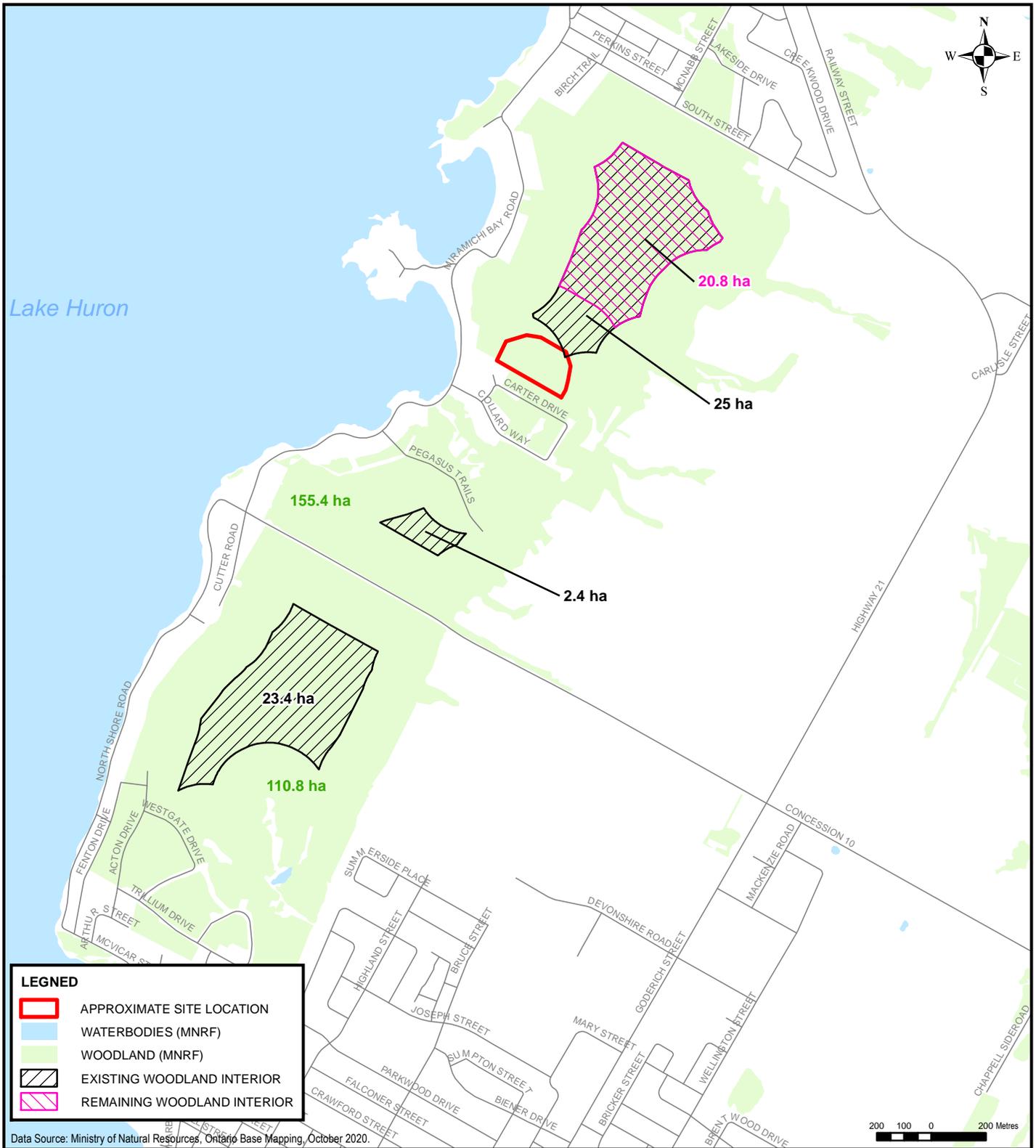
TITLE:

**2020 FIELD OBSERVATIONS**

DISCIPLINE:

**ENVIRONMENT**

ISSUE: -	REV.: -
-------------	------------



LEGEND	
	APPROXIMATE SITE LOCATION
	WATERBODIES (MNRF)
	WOODLAND (MNRF)
	EXISTING WOODLAND INTERIOR
	REMAINING WOODLAND INTERIOR

Data Source: Ministry of Natural Resources, Ontario Base Mapping, October 2020.



126 DON HILLOCK DRIVE, UNIT 2  
 AURORA, ONTARIO CANADA L4G 0G9  
 TEL.: 905-750-3080 | FAX: 905-727-0463 | WWW.WSP.COM

PROJECT:	MIRAMICHI SHORES - PHASE 4 - EIS SAUGEEN SHORES, ONTARIO		SCALE:	1:20,000
TITLE:	WOODLAND IMPACT ASSESSMENT		DRAWN BY:	TP
CLIENT:			CHECKED BY:	EF
			PROJECT NO.:	201-06434-00
			DATE:	FEBRUARY 2021
			FIGURE NO.:	5
			REV.:	-

# APPENDIX

**B**

AGENCY  
CORRESPONDENCE



**From:** Benvenuti, Jodi (MNRF) <jodi.benvenuti@ontario.ca>  
**Sent:** November 24, 2020 10:09 AM  
**To:** Gibbs, Sophie  
**Subject:** RE: Miramichi Shores Residential Development Information Request  
**Attachments:** MiramichiShores\_InfoRequest\_MNRF\_17Nov2020.pdf; Figure 1\_MiramichiShores\_17Nov2020.pdf; Figure 2\_MiramichiShores\_17Nov2020.pdf

Hello Sophie,

MNRF has reviewed the attached information request and has no additional information to add at this.

Jodi Benvenuti  
Management Biologist  
Ministry of Natural Resources and Forestry (MNRF)  
Midhurst District

---

**From:** Gibbs, Sophie <Sophie.Gibbs@wsp.com>  
**Sent:** November 17, 2020 11:55 AM  
**To:** MIDHURSTINFO (MNRF) <MIDHURSTINFO@ontario.ca>  
**Cc:** Fitzpatrick, Erin <Erin.Fitzpatrick@wsp.com>  
**Subject:** (Jodi)Miramichi Shores Residential Development Information Request

**CAUTION -- EXTERNAL E-MAIL - Do not click links or open attachments unless you recognize the sender.**

Hello,

Please see the attached natural heritage information request and study area maps for the proposed residential development of the Miramichi Shores Subdivision, in the Town of Saugeen Shores, Bruce County. WSP has been retained by Miramichi Shores Land Development Limited to undertake an Environmental Impact Study (EIS). If there are any questions or concerns, please do not hesitate to contact myself or Erin Fitzpatrick (cc'd).

Thank you,

Sophie

Sophie Gibbs, H.B.Sc., M.E.S.  
Terrestrial Ecologist  
Ecology & Environment Impact Assessment (EIA)



T+ 1 519-904-1783  
M+ 1 519-998-6506  
[Sophie.Gibbs@wsp.com](mailto:Sophie.Gibbs@wsp.com)

582 Lancaster Street West  
Kitchener, Ontario  
N2K 1M5 Canada

[wsp.com](http://wsp.com)

---

NOTICE: This communication and any attachments ("this message") may contain information which is privileged, confidential, proprietary or otherwise subject to restricted disclosure under applicable law. This message is for the sole use of the intended recipient(s). Any unauthorized use, disclosure, viewing, copying, alteration, dissemination or distribution of, or reliance on, this message is strictly prohibited. If you have received this message in error, or you are not an authorized or intended recipient, please notify the sender immediately by replying to this message, delete this message and all copies from your e-mail system and destroy any printed copies. You are receiving this communication because you are listed as a current WSP contact. Should you have any questions regarding WSP's electronic communications policy, please consult our Anti-Spam Commitment at [www.wsp.com/casf](http://www.wsp.com/casf). For any concern or if you believe you should not be receiving this message, please forward this message to [cascompliance@wsp.com](mailto:cascompliance@wsp.com) so that we can promptly address your request. Note that not all messages sent by WSP qualify as commercial electronic messages.

AVIS : Ce message, incluant tout fichier l'accompagnant (« le message »), peut contenir des renseignements ou de l'information privilégiés, confidentiels, propriétaires ou à divulgation restreinte en vertu de la loi. Ce message est destiné à l'usage exclusif du/des destinataire(s) voulu(s). Toute utilisation non permise, divulgation, lecture, reproduction, modification, diffusion ou distribution est interdite. Si vous avez reçu ce message par erreur, ou que vous n'êtes pas un destinataire autorisé ou voulu, veuillez en aviser l'expéditeur immédiatement et détruire le message et toute copie électronique ou imprimée. Vous recevez cette communication car vous faites partie des contacts de WSP. Si vous avez des questions concernant la politique de communications électroniques de WSP, veuillez consulter notre Engagement anti-pourriel au [www.wsp.com/fcap](http://www.wsp.com/fcap). Pour toute question ou si vous croyez que vous ne devriez pas recevoir ce message, prière de le transférer au [confomitelcap@wsp.com](mailto:confomitelcap@wsp.com) afin que nous puissions rapidement traiter votre demande. Notez que ce ne sont pas tous les messages transmis par WSP qui constituent des messages électroniques commerciaux.

[LA Divulgué de l'Accompagnant](#)



2020-11-17

Midhurst District Ministry of Natural Resources and Forestry  
2284 Nursery Rd,  
Midhurst, ON L9X 1N8

Dear Sir/Madam:

WSP Canada Group Inc. (WSP) has been retained by Miramichi Shores Land Development Limited to undertake an Environmental Impact Study (EIS) for the proposed residential subdivision at the property described as Part of Lots 55 and 56, Town of Saugeen Shores, Ontario; herein referred to as “the Site.” The proposed works includes the construction of a new road, 14 low-density residential houses and a perforated storm water management system. The proposed EIS surveys will update a previously completed Natural Heritage EIS by Aquatic and Wildlife Services (AWS) in 2008 for the Mary Rose Subdivision. The proposed study area, including the location of the proposed houses, is shown on the attached study area figures (Figure 1: Regional Context; Figure 2: Detailed View). The study area falls within the jurisdiction of the Saugeen Valley Conservation Authority (SVCA). This update will include a background review of all relevant natural heritage information as well as site visits to document current site conditions.

In fulfillment of the update to the Natural Heritage EIS, updated ecological background information is required for the study area and adjacent natural areas. As such, we are formally contacting you to request any available Species at Risk (SAR) and natural heritage information pertinent to the study area.

WSP has reviewed the relevant resources publicly available including Land Information Ontario (LIO), INaturalist, Ebird, Atlas of Mammals in Ontario, Bat Conservation International range maps, Ontario Reptile and Amphibian Atlas mapping, and Ontario Butterfly Atlas mapping. There are no Provincially Significant Wetlands (PSWs), or Areas of Natural and Scientific Interest (ANSIs) within the study area.

Based on the available online databases, WSP is currently aware of the following SAR within the study area and vicinity:

- Dwarf Lake Iris (Special Concern)
- Little Brown Bat (*Myotis lucifugus*), Northern Myotis (*M. septentrionalis*), Small-footed Bat (*M. leibii*), and Tri-coloured Bat (*Perimyotis subflavus*) (Endangered)

Additional information we are seeking includes any of the following information that is not publicly available:

Species at Risk (SAR)

- List of SAR to be considered for the study area;
- Locations, observation dates and any other relevant information about SAR – if possible, please provide the UTM’s/accuracy codes;
- Locally rare species lists or records and/or rare vegetation communities known from the study area

WSP understands that administration of the Endangered Species Act (ESA 2007) has been transferred to the Ministry of Environment, Conservation and Parks (MECP), as of April 1, 2019. WSP will also be contacting the MECP, as well as SVCA with a similar request for SAR and natural heritage information.

If further information is required, please feel free to contact the undersigned at 519-904-1783 or through email at Sophie.Gibbs@wsp.com. Thank you for your assistance, it is greatly appreciated.

582 Lancaster Street West  
Kitchener, ON  
Canada N2K 1M3

T: +1 519 743-8778  
F: +1 519 743-8778  
wsp.com



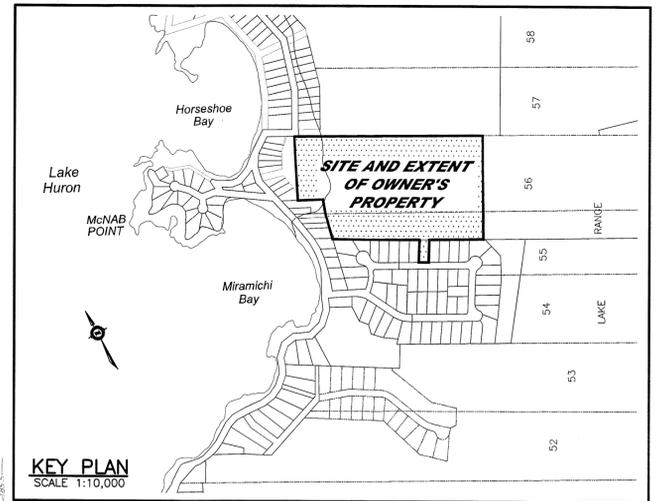
Yours sincerely,

A handwritten signature in blue ink, appearing to read 'Sophie Gibbs'.

Sophie Gibbs  
Terrestrial Ecologist

Legend			
	PROPOSED SUBDIVISION BOUNDARY		EXISTING FIREHYDRANT
	PROPOSED LOT LINE		EXISTING TREE LINE
	EXISTING PROPERTY/STREET LINE		EXISTING HYDRO GUY WIRE
	EXISTING CONTOUR		EXISTING HYDRO POLE
	EDGE OF EXISTING PAVEMENT		EXISTING TELEPHONE PEDESTAL
	EXISTING ZONING LIMITS		
	EXISTING TRAIL		
	EXISTING STREAM		
	DEVELOPABLE LAND BOUNDARY AS SHOWN ON SP2 (AQUATIC AND WILDLIFE SERVICES PLAN DATED DECEMBER 23, 2005.)		

NOTE: NUMBERING OF LOTS ON FINAL PLAN MAY VARY FROM THAT SHOWN ON THE DRAFT PLAN.



Copyright Reserved  
 THE CONTRACTOR SHALL VERIFY AND BE RESPONSIBLE FOR ALL DIMENSIONS. DO NOT SCALE THE DRAWING - ANY ERRORS OR OMISSIONS SHOULD BE REPORTED TO PRYDE SCHROPP MCCOMB INC.  
 THE COPYRIGHTS TO ALL DESIGNS AND DRAWINGS ARE THE PROPERTY OF PRYDE SCHROPP MCCOMB INC. REPRODUCTION OR USE FOR OTHER THAN THAT AUTHORIZED BY PRYDE SCHROPP MCCOMB INC. IS FORBIDDEN.

**DRAFT PLAN OF SUBDIVISION**  
 BLOCK 15  
 REGISTERED PLAN No. 3M-209  
 AND PART OF LOTS 55 AND 56  
 LAKE RANGE  
 (GEOGRAPHIC TOWNSHIP OF SAUGEEN)  
 TOWN OF SAUGEEN SHORES  
 COUNTY OF BRUCE

**RELEVANT SITE INFORMATION**

RESIDENTIAL LOTS (14)	3.089 ha.
MUNICIPAL STREETS (MARY ROSE COURT)	0.659 ha.
WALKWAYS (BLOCKS 15 AND 16)	0.067 ha.
TO BE RETAINED BY OWNER (BLOCKS 17 AND 18)	12.437 ha.
<b>TOTAL PROPOSED SUBDIVISION</b>	<b>16.252 ha.</b>

**RESIDENTIAL LOT INFORMATION**  
 (AS DEFINED IN ZONING BY-LAW No. 201-2000)

LOT	FRONTAGE (m.)	AREA (sq.m.)
1	32.0	2139
2	30.0	2010
3	30.0	2010
4	31.8	2334
5	30.1	3928
6	35.2	2372
7	31.7	1775
8	30.0	1986
9	30.0	2010
10	30.0	2010
11	30.1	2693
12	30.1	1867
13	30.0	1728
14	30.0	1830

**ADDITIONAL INFORMATION REQUIRED UNDER SECTION 51 OF THE PLANNING ACT**

a. AS SHOWN	h. MUNICIPAL PIPED WATER
b. AS SHOWN	i. SILTY SAND
c. AS SHOWN	j. AS SHOWN
d. SINGLE FAMILY RESIDENTIAL	k. PAVED ROADS, WATER, STORM SEWERS, HYDRO, TELEPHONE, CABLE TV, FIRE AND POLICE PROTECTION, AMBULANCE
e. AS SHOWN	l. AS SHOWN
f. AS SHOWN	
g. AS SHOWN	

**SURVEYOR'S CERTIFICATE**

I CERTIFY THAT:  
 THE BOUNDARIES OF THE LANDS TO BE SUBDIVIDED  
 AND THEIR RELATIONSHIP TO THE ADJACENT LANDS  
 ARE CORRECTLY SHOWN.

*J. Brent England*  
 J. BRENT ENGLAND O.L.S.  
 VAN DINSMORE LTD.  
 ONTARIO LAND SURVEYORS

March 5, 2009

DATE

**OWNER'S CERTIFICATE**

I, THE REGISTERED OWNER OF THESE LANDS, HEREBY AUTHORIZE PRYDE, SCHROPP, MCCOMB INC. TO SUBMIT THIS DRAFT PLAN FOR APPROVAL.

Dec. 6/07

*Joseph Brewer Jr.*  
 OWNER  
 JOSEPH BREWER JR.

Revision

No.	Description	By	Appd.	Date
0	FIRST SUBMISSION	MG	BRP	2007.10.10
1	SECOND SUBMISSION-REVISED AS REQUESTED BY O.L.S.	JAF	BRP	2007.11.30
2	THIRD SUBMISSION; REVISED BOUNDARY-ACCESS ROAD	JAF	BRP	2009.02.20

**MARY ROSE SUBDIVISION**

Project No. 00090 Scale 1:1250 Dwn by. JAF

Drawing No. DP1 Revision 2

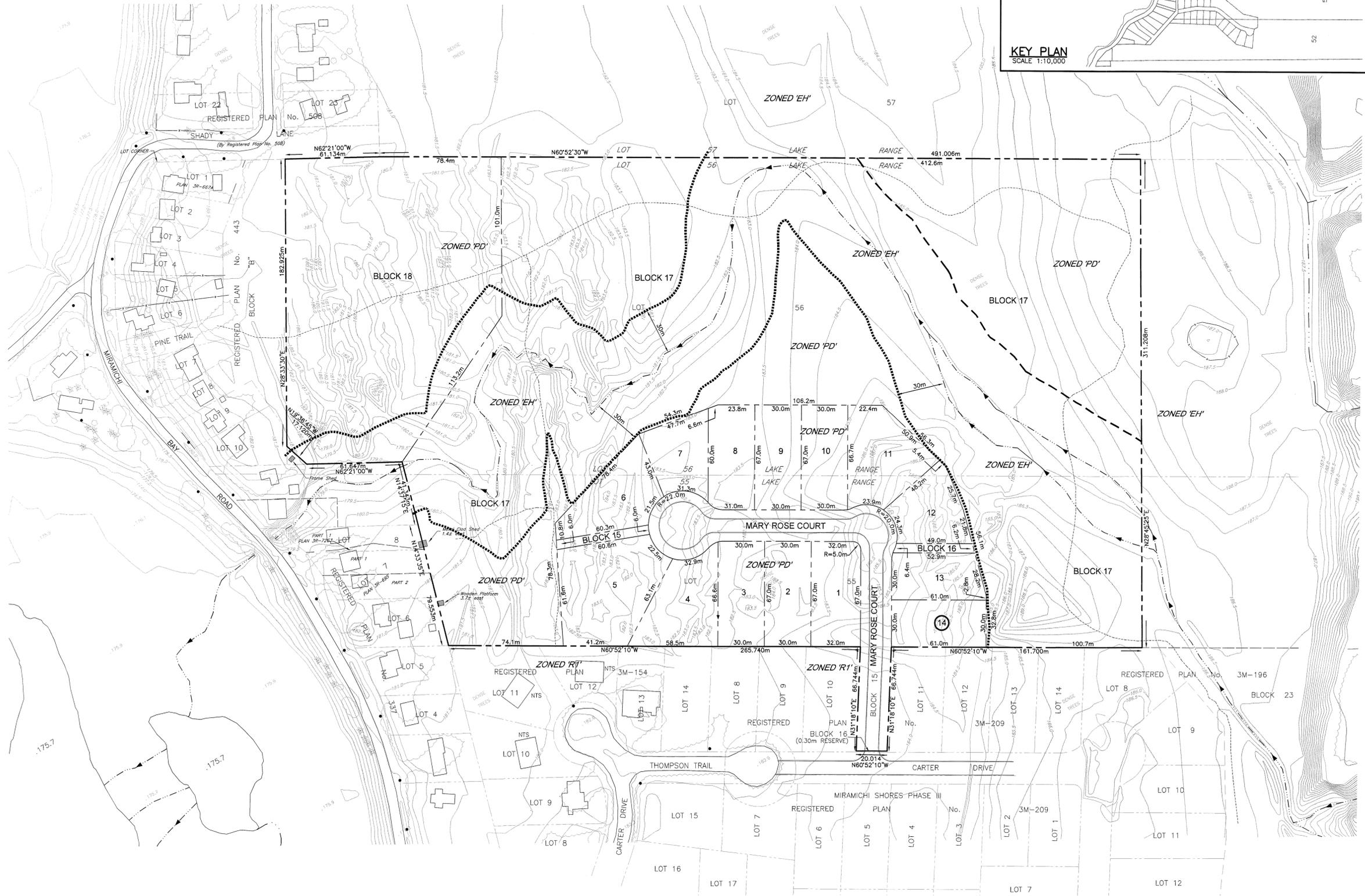
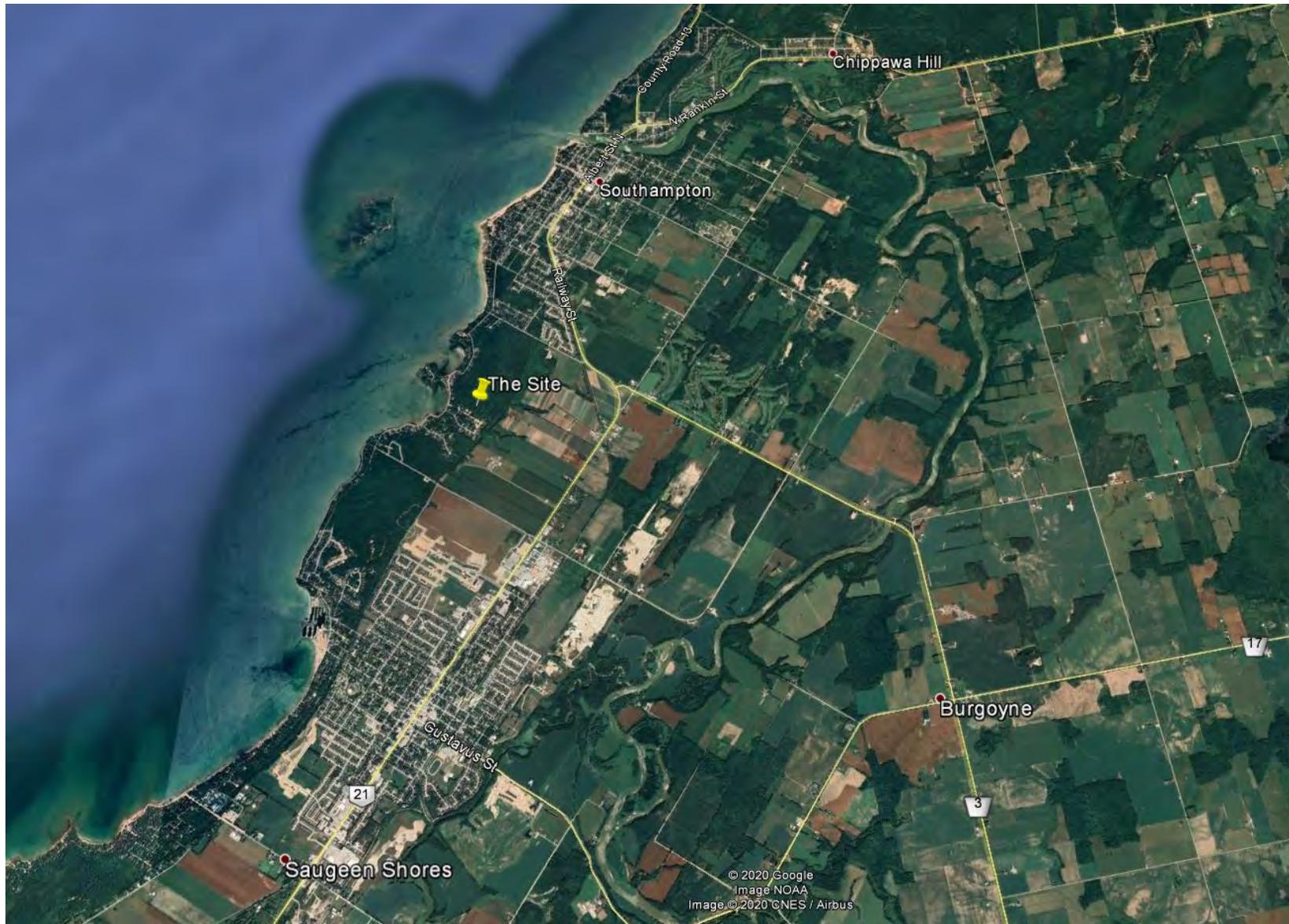


Figure 1: Regional Context



---

**From:** Brandi Walter [mailto:[b.walter@svca.on.ca](mailto:b.walter@svca.on.ca)]  
**Sent:** Tuesday, June 30, 2020 11:55 AM  
**To:** Fitzpatrick, Erin <[Erin.Fitzpatrick@wsp.com](mailto:Erin.Fitzpatrick@wsp.com)>  
**Subject:** RE: Mary Rose Subdivision - Town of Saugeen Shores EIS Inquiry

Hi Erin,

Thank you for your email. We will review the history on this file as soon as time permits and respond accordingly. Workload is busy right now and I don't anticipate looking into this until late next week or the week following week. My apologies. Thank you for your patience in this matter.

Kind Regards,



*Please note: As a result of COVID 19, please be aware that as March 17<sup>th</sup>, our office will be closed to the general public until further notice. Staff are still available for essential services and would be happy to help you over the phone or by email. We thank you for your cooperation and patience.*

---

**From:** Fitzpatrick, Erin <[Erin.Fitzpatrick@wsp.com](mailto:Erin.Fitzpatrick@wsp.com)>  
**Sent:** June 29, 2020 12:45 PM  
**To:** Brandi Walter <[b.walter@svca.on.ca](mailto:b.walter@svca.on.ca)>  
**Subject:** Mary Rose Subdivision - Town of Saugeen Shores EIS Inquiry

Hi Brandi,

I hope this finds you well.

We have been approached to complete an EIS for a proposed 13-lot subdivision, known as the "Mary Rose Subdivision" in the Town of Saugeen Shores (draft plan is attached). From what I understand the subdivision had received draft plan approval back in 2009, but was allowed to lapse, and our client is looking to pick up the property and pursue development of this plan. An EIS was completed in 2008 by AWS (Aquatic and Wildlife Services) and was approved by the SVCA in 2009, satisfying one of the conditions of draft plan approval. The area proposed for the subdivision is designated as Shoreline Residential in the Town of Saugeen Shores OP, and portions fall within Special Policy Area #4. The EIS focuses on the portion zoned as R1-2 – Residential First Density, though we are aware that portions have been zoned as Planned Development and Environmental Hazard.

We anticipate that ecological surveys will need to be updated for the subject site given the time since the original EIS was completed. Would you be able to provide further guidance on expectations for the proposed study, and/or additional permitting requirements through the SVCA? Does the earlier approval have any bearing on the current approach? If you would like me to provide you with a detailed terms of reference, please let me know.

I would also like to request additional information that may be available for species occurrence data, ELC mapping, fish community data and/or Natural Heritage Feature details for the Site.

If I can provide additional information, please do not hesitate to contact me.

Thank you,  
Erin

**Erin Fitzpatrick, M.Sc.**  
Ecologist, Environment



T+ 1 289-984-0412  
F+ 1 905-727-0463  
M+ 1 289-380-2552

126 Don Hillock Drive, Unit 2  
Aurora, Ontario  
L4G 0G9 Canada

[wsp.com](http://wsp.com)

---

NOTICE: This communication and any attachments ("this message") may contain information which is privileged, confidential, proprietary or otherwise subject to restricted disclosure under applicable law. This message is for the sole use of the intended recipient(s). Any unauthorized use, disclosure, viewing, copying, alteration, dissemination or distribution of, or reliance on, this message is strictly prohibited. If you have received this message in error, or you are not an authorized or intended recipient, please notify the sender immediately by replying to this message, delete this message and all copies from your e-mail system and destroy any printed copies. You are receiving this communication because you are listed as a current WSP contact. Should you have any questions regarding WSP's electronic communications policy, please consult our Anti-Spam Commitment at [www.wsp.com/icas](http://www.wsp.com/icas). For any concern or if you believe you should not be receiving this message, please forward this message to [cas@compliance@wsp.com](mailto:cas@compliance@wsp.com) so that we can promptly address your request. Note that not all messages sent by WSP qualify as commercial electronic messages.

AVIS : Ce message, incluant tout fichier l'accompagnant (« le message »), peut contenir des renseignements ou de l'information privilégiés, confidentiels, propriétaires ou à divulgation restreinte en vertu de la loi. Ce message est destiné à l'usage exclusif d'un/des destinataire(s) voulu(s). Toute utilisation non permise, divulgation, lecture, reproduction, modification, diffusion ou distribution est interdite. Si vous avez reçu ce message par erreur, ou que vous n'êtes pas un destinataire autorisé ou voulu, veuillez en aviser l'expéditeur immédiatement et détruire le message et toute copie électronique ou imprimée. Vous recevez cette communication car vous faites partie des contacts de WSP. Si vous avez des questions concernant la politique de communications électroniques de WSP, veuillez consulter notre Engagement anti-spam au [www.wsp.com/icas](http://www.wsp.com/icas). Pour toute question ou si vous croyez que vous ne devriez pas recevoir ce message, prière de le transférer au [comformite@wsp.com](mailto:comformite@wsp.com) afin que nous puissions rapidement traiter votre demande. Notez que ce ne sont pas tous les messages transmis par WSP qui constituent des messages électroniques commerciaux.



## MEMO

**TO:** Brandi Walter, Environmental Planning Coordinator, Saugeen Valley Conservation Authority (SVCA)

**FROM:** Erin Fitzpatrick, Ecologist, WSP Canada Inc.

**SUBJECT:** Terms of Reference – Mary Rose Subdivision Environmental Impact Study

**DATE:** September 30, 2020

---

WSP Canada Inc. has prepared the following Terms of Reference for an update to the Environmental Impact Study (EIS) for the Mary Rose Subdivision in support of an application for Draft Plan Approval. The EIS update will build on and review the findings of the 2008 EIS Report by AWS, and will include the following:

**Agency Consultation and Background Review:**

- Agency consultation to obtain current relevant natural heritage feature and area data for the site, including, but not limited to species occurrence data (including Species at Risk), fish community data, natural heritage feature mapping, and existing reports for the site or surrounding area.
- Review of background information available from public resources and agency consultation, and the 2008 EIS Report.

**Field Investigation:**

- A field program designed to screen for Significant Wildlife Habitat and Species at Risk habitat. Preliminary surveys have been completed by WSP for the site and will be continued into the fall. Specifically, the field program will include:
  - o Breeding bird surveys in accordance with the Ontario Breeding Bird Atlas (OBBA) protocols (June and July);
  - o One amphibian survey (June) based on timing of 2020 work program;
  - o Botanical inventories in summer (June/July) and fall (September) and review of ELC community types using the Ecological Land Classification for Southern Ontario and Its Application (Lee et al., 1998), or by ELC for Southern Ontario: 2nd Approximation (Lee, 2008), if required. Soil probe information and ELC data field sheets will be appended to the EIS report.
  - o Incidental wildlife observations;
- Conservation status of observed plant and wildlife species will be documented with reference to NHIC and regional species lists, where available.
- **Additional points:**
  - o The 30 m setback to the stream as proposed by AWS will be utilized. An aquatic habitat assessment will only be completed if the preliminary SWM report recommends treatment less than ‘enhanced’. The EIS report will include recommendations to mitigate temperature impacts of storm water, as required.



**Environmental Impact Assessment Report:**

- EIS Report Update to characterize the impact of the proposed development on natural heritage features on and adjacent to the Site. Where reasonable to do so, information and recommendations from the AWS Report will be relied upon. The focus will be to use current observations to bring the assessments and recommendations in line with current regulations and guidelines (e.g., updates to species listings under the Endangered Species Act, 2007). Specifically, the report will include:
  - A background review of existing mapping and secondary source information;
  - A brief overview of applicable policies;
  - A description of the field surveys and methodologies. Field sheets (e.g. ELC data sheets) and species lists will be presented in appendices to the report.
  - A detailed description of the significant natural heritage features on the Site, their ecological functions, and the broader natural heritage system of which they are a part;
  - Mapping of identified significant natural heritage features, vegetation communities (as per 2008 EIS or as amended based on current community ELC references and on-site assessment), and other environmental features on a current, high quality orthoimage;
  - An overview of the property and the proposed undertaking, including a draft plan of subdivision showing the proposed development in relation to existing natural heritage features, other built structures on the property, and lot lines, as applicable;
  - A map of the proposed development and limit of disturbance on a current high quality orthoimage;
  - A detailed description of anticipated environmental impacts, direct or indirect, based on the proposed draft plan of subdivision and supporting technical studies (e.g., storm water management, geotechnical, hydrogeological, servicing, etc.), as appropriate. Focus will be on the natural heritage features, and ecological functions that are identified on or adjacent to the development footprint, or deemed significant;
  - Recommendations to eliminate or minimize impacts to identified natural heritage features, ecological functions, surface water and/or groundwater that support the ecological function of the natural features;
  - Descriptions of measures that may be used to avoid or minimize identified impacts, including the recommendation of setbacks in accordance with applicable policies;
  - Where negative impacts cannot be avoided, mitigation measures (e.g., timing windows, buffer plantings), restoration and/or offsetting strategies will be detailed to address known or potential impacts from the proposed development. Ecology staff will coordinate with the project hydrogeologist/engineers in the development of recommendations that relate to groundwater impacts; and,
  - Demonstration of conformity with applicable legislation and policies.

Kindly confirm that the approach to the EIS update meets the expectations of the SVCA. The intention is to have a report ready for submission in Fall 2020 / Winter 2021.

## Fitzpatrick, Erin

---

**From:** Brandi Walter <b.walter@svca.on.ca>  
**Sent:** Friday, October 09, 2020 8:38 AM  
**To:** Fitzpatrick, Erin  
**Cc:** Brad R. Pryde; Daniel Kingsbury  
**Subject:** RE: Mary Rose Subdivision - EIS Update Report - Terms of Reference

**Follow Up Flag:** Follow up  
**Flag Status:** Flagged

Dear Erin,

Thank you for the opportunity to review the proposed EIS TOR, and for incorporating SVCA comments to the updated TOR. Please be advised, the proposed TOR are acceptable.

Regarding your question for fish habitat assessment. You are correct. This should only be done if less than enhanced SWM is proposed. However, assuming coldwater thermal regime, the impact of stormwater temps. to the receiving coldwater stream will need to be addressed, which I believe is alluded to in the updated TOR.

Feel free to contact me if you have any further questions.

Kind Regards,



**Brandi Walter**, Environmental Planning Coordinator  
1078 Bruce Rd. 12, Box 150 Formosa ON N0G 1W0  
519-367-3040 Ext. 236 Fax 519-367-3041  
b.walter@svca.on.ca  
www.svca.on.ca

*Please note: As a result of COVID 19, please be aware that as March 17<sup>th</sup>, our office will be closed to the general public until further notice. Staff are still available for essential services and would be happy to help you over the phone or by email. We thank you for your cooperation and patience.*

---

**From:** Fitzpatrick, Erin <Erin.Fitzpatrick@wsp.com>  
**Sent:** September 30, 2020 12:17 PM  
**To:** Brandi Walter <b.walter@svca.on.ca>  
**Cc:** Brad R. Pryde <bpryde@bmts.com>; Daniel Kingsbury <DKingsbury@brucecounty.on.ca>  
**Subject:** RE: Mary Rose Subdivision - EIS Update Report - Terms of Reference

Dear Brandi,

Thank you for the feedback on the draft TOR for the EIS update for the Mary Rose Subdivision. I have provided a revised TOR (attached) based on your comments; however, there was one point that I feel requires some clarification. From your earlier comments on Mr. Pryde's August 27, 2020 summary email (below), we were under the impression that a fish habitat assessment would *only* be required if treatment of storm water was to be anything less than 'enhanced'. We can confirm that 'enhanced' treatment will be provided. Based on this, I understood that the fish habitat assessment would not be needed. However, in your comments on the draft TOR (below), you indicate that a fish habitat assessment

should be completed if fisheries data is not available for the watercourse in question. The comments are somewhat contradictory, and I would like to confirm requirements so that we can prepare accordingly. Please advise on this component of the work program, and confirm whether the attached is acceptable to the SVCA.

Thank you,  
Erin

**Erin Fitzpatrick, M.Sc.**

T +1 289-984-0412



---

**From:** Brandi Walter [<mailto:b.walter@svca.on.ca>]  
**Sent:** Wednesday, September 16, 2020 3:33 PM  
**To:** Fitzpatrick, Erin <[Erin.Fitzpatrick@wsp.com](mailto:Erin.Fitzpatrick@wsp.com)>  
**Cc:** Brad R. Pryde <[bpryde@bmts.com](mailto:bpryde@bmts.com)>; Daniel Kingsbury <[DKingsbury@brucecounty.on.ca](mailto:DKingsbury@brucecounty.on.ca)>  
**Subject:** RE: Mary Rose Subdivision - EIS Update Report - Terms of Reference

Good Afternoon Erin,

I have made comments to your proposal in your email below. Comments are noted in **bold italics**.

Thank you for the opportunity to comment. I look forward to your response and receiving a final proposed TOR.

Kind Regards,



***Please note:*** *As a result of COVID 19, please be aware that as March 17<sup>th</sup>, our office will be closed to the general public until further notice. Staff are still available for essential services and would be happy to help you over the phone or by email. We thank you for your cooperation and patience.*

**From:** Fitzpatrick, Erin <[Erin.Fitzpatrick@wsp.com](mailto:Erin.Fitzpatrick@wsp.com)>  
**Sent:** September 1, 2020 12:10 PM  
**To:** Brandi Walter <[b.walter@svca.on.ca](mailto:b.walter@svca.on.ca)>  
**Cc:** Brad R. Pryde <[bpryde@bmts.com](mailto:bpryde@bmts.com)>  
**Subject:** Mary Rose Subdivision - EIS Update Report - Terms of Reference

Good morning Brandi,

WSP has been retained to complete an update to the 2008 AWS EIS Report for the proposed Mary Rose Subdivision, located in Part of Lots 55 and 56, Town of Saugeen Shores. WSP is aware that a meeting was held on August 24<sup>th</sup> with representatives from Bruce County, Town of Saugeen Shores, SVCA, and the proponent. This email is being provided to

the SVCA to confirm the scope of work for the EIS, and has been based on the pre-consultation notes resulting from the August 24<sup>th</sup> meeting.

The EIS update will build on **and review** the findings of the 2008 EIS Report by AWS, and will include the following:

- Agency consultation to obtain **current** relevant natural heritage feature and area data for the site, including, but not limited to species occurrence data (including Species at Risk), fish community data, natural heritage feature mapping, and existing reports for the site or surrounding area.
- Review of background information available from public resources and agency consultation, and the 2008 EIS Report.
- A field program designed to screen for Significant Wildlife Habitat and Species at Risk habitat. Preliminary surveys have been completed by WSP for the site and will be continued into the fall. Specifically, the field program will include:
  - o Breeding bird surveys in accordance with the Ontario Breeding Bird Atlas (OBBA) protocols (June and July);
  - o One amphibian survey (June) based on timing of 2020 work program;
  - o Botanical inventories in summer (June/July) and fall (September); and,
  - o Incidental wildlife observations;

***If fish data not available, please undertake a habitat assessment. This is required to address stormwater management quality in addition to lot grading, and development within the groundwater table (as previously addressed in AWS report).***

***Review of ELC community types. ELC community references have been updated since this report. Also, please ensure soil probe information and ELC data field sheets are available for peer review.***

Conservation status of observed plant and wildlife species will be documented with reference to NHIC and regional species lists, where available.

- o Additional points:
  - Vegetation community mapping completed by AWS will be utilized. ***See comments above – will need to be reviewed and updated.***

- The 30 m setback to the stream as proposed by AWS will be utilized. An aquatic habitat assessment will only be completed if the preliminary SWM report recommends treatment less than 'enhanced'. ***Agreed but please make recommendations for mitigating temperature impacts of stormwater.***

- EIS Report Update to characterize the impact of the proposed development on natural heritage features on and adjacent to the Site. Where reasonable to do so, information and recommendations from the AWS Report will be relied upon. The focus will be to use current observations to bring the assessments and recommendations in line with current regulations and guidelines (e.g., updates to species listings under the Endangered Species Act, 2007). Specifically, the report will include:
  - o A background review of existing mapping and secondary source information;
  - o A brief overview of applicable policies;
  - o A description of the field surveys and methodologies. Survey results and/or species lists will be presented in an appendix to the report.
  - o A detailed description of the significant natural heritage features on the Site, their ecological functions, and the broader natural heritage system of which they are a part;

- Mapping of identified significant natural heritage features, vegetation communities (as per 2008 EIS **or as amended based on current community ELC references and on-site assessment**), and other environmental features on a current, high quality orthoimage;
- An overview of the property and the proposed undertaking, including a draft plan of subdivision showing the proposed development in relation to existing natural heritage features, other built structures on the property, and lot lines, as applicable;
- A map of the proposed development and limit of disturbance on a current high quality orthoimage;
- A detailed description of anticipated environmental impacts, direct or indirect, based on the proposed draft plan of subdivision and supporting technical studies (e.g., storm water management, geotechnical, hydrogeological, servicing, etc.), as appropriate. Focus will be on the natural heritage features, and ecological functions that are identified on or adjacent to the development footprint, or deemed significant;
- Recommendations to eliminate or minimize impacts to identified natural heritage features, ecological functions, or surface waters **or groundwater that support the ecological function of the natural features**;
- Descriptions of measures that may be used to avoid or minimize identified impacts, including the recommendation of setbacks in accordance with applicable policies;
- Where negative impacts cannot be avoided, mitigation measures (e.g., timing windows, buffer plantings), restoration and/or offsetting strategies will be detailed to address known or potential impacts from the proposed development; and,
  - Any recommendations for mitigating groundwater impacts should be reviewed by a hydrogeologic expert.**
- Demonstration of conformity with applicable legislation and policies.

Kindly confirm that the approach to the EIS update meets the expectations of the SVCA. The intention is to have a report ready for submission in Fall 2020 / Winter 2021.

Thank you,  
Erin

**Erin Fitzpatrick, M.Sc.**  
T +1 289-984-0412




---

**From:** Brandi Walter <[b.walter@svca.on.ca](mailto:b.walter@svca.on.ca)>  
**Sent:** Thursday, August 27, 2020 3:43 PM  
**To:** Brad R. Pryde <[bpryde@bmts.com](mailto:bpryde@bmts.com)>  
**Cc:** Daniel Kingsbury <[DKingsbury@brucecounty.on.ca](mailto:DKingsbury@brucecounty.on.ca)>  
**Subject:** RE: Preconsultation - Mary Rose subdivision

Thank you Brad for these minutes. I have added my comments in red. Hopefully you are in agree with my additions.

It was great meeting with you and Dan today.

Kind Regards,



**Brandi Walter**, Environmental Planning Coordinator  
1078 Bruce Rd. 12, Box 150 Formosa ON N0G 1W0  
519-367-3040 Ext. 236 Fax 519-367-3041  
b.walter@svca.on.ca  
www.svca.on.ca

**Please note:** *As a result of COVID 19, please be aware that as March 17<sup>th</sup>, our office will be closed to the general public until further notice. Staff are still available for essential services and would be happy to help you over the phone or by email. We thank you for your cooperation and patience.*

---

**From:** Brad R. Pryde <[bpryde@bmts.com](mailto:bpryde@bmts.com)>

**Sent:** August 27, 2020 11:58 AM

**To:** Brandi Walter <[b.walter@svca.on.ca](mailto:b.walter@svca.on.ca)>; Daniel Kingsbury <[DKingsbury@brucecounty.on.ca](mailto:DKingsbury@brucecounty.on.ca)>

**Cc:** Ron Davidson <[ronalddavidson@rogers.com](mailto:ronalddavidson@rogers.com)>; 'Jay Pausner' <[jay.pausner@saugeenshores.ca](mailto:jay.pausner@saugeenshores.ca)>; Adam Stanley <[adam.stanley@saugeenshores.ca](mailto:adam.stanley@saugeenshores.ca)>; Stephen Cobean <[scobean@cobideeng.com](mailto:scobean@cobideeng.com)>

**Subject:** Preconsultation - Mary Rose subdivision

Brandi/Dan

Thank you very much for taking the time this morning to meet with me to discuss the proposed subdivision.

Outlined below is a brief summary of the items discussed. Please let me know if you have any questions or concerns regarding any of the items.

1. Ownership

- there is an approved offer of purchase and sale with conditions with MaryLynn Biener who inherited the property from Joseph Biener who passed away this past winter
- my purchase of the property is conditional on conducting a due diligence process

2. Previous history of the subdivision

- in approximately 2004, discussions took place between the conservation authority, town, county and landowners between port Elgin and Southampton regarding development potential
- at that time the entire lands were designated Shoreline residential
- the conservation and County did not feel that was appropriate as there were some areas that needed protection
- it was agreed that the landowners would undertake preliminary environmental impact assessments to identify pockets of land suitable for residential development
- those individual preliminary environmental impact assessments served the basis for identifying potentially suitable areas for development
- Special Policy Area 8 (Now 4) was agreed to by all parties
- SPA 4 among other things identifies the need for completion of a detailed environmental impact study and tree retention
- Joe Biener completed the background studies required in support of the draft plan application and rezoning
- in 2009 the subject property was draft plan approved and rezoned
- the draft plan approval lapsed

3. purpose of preconsultation meeting

- to determine if the town, conservation Authority or County based on preliminary review had any major objections to the subdivision proceeding as originally planned

#### 4. Planning

- Ron Davidson will be the planner on the project
- the subject property where the subdivision is proposed is zoned residential.
- Lands are designated Shoreline residential
- Brad to forward to Dan the previously completed planning justification report
- Brad is going to ask Ron to contact Dan to review density requirements
- Brad suggested that Dan review what was undertaken for the recently approved Lakeside Woods subdivision
- Dan suggested that secondary residences may assist in density requirements.
- Brad's preference is that the lot sizes as originally proposed remain the same
- Brandy's preference is the same because of tree retention
- another factor to take into consideration as it relates to density is the need for septic tank systems

#### 5. Proposed Plan of Subdivision

- Brad's preference is that it be identical to what was previously approved

#### 6. Required Reports

- preliminary stormwater management report
  - Brad to review with Cobide Engineering the requirement for enhanced treatment for water quality control. **SVCA asks that treatment less than "enhanced" be supported by an aquatic habitat assessment to ensure not impact to fisheries/etc. This should be included in EIS.**
  - Brandi was okay with an addendum to the previously prepared report
  - **SVCA permit required for outlet of stormwater to watercourse.**
- environmental impact study
  - WSP have undertaken preliminary work and field investigations
  - The EIS needs to be updated
  - in conjunction with the EIS, a geotechnical investigation **and hydrogeological study** is required to assess the impact of the proposed perforated storm sewer. **SVCA should be contacted to review terms of reference for the hydrogeological study.**
  - Brad is requesting that the conservation authority approve the work completed by AWS for the 30 m setback from the stream and the identification of the vegetation community boundaries
  - Brad is going to have WSP forward the scope of services that are proposed
- planning justification report
  - Ron to prepare
  - Brad has no objection to the northeast corner of the property that is presently zoned residential being rezoned environmental hazard as part of the town's zoning bylaw update at some point in the future
- servicing evaluation report
  - Cobide to prepare
  - town has tentatively agreed to municipal water and septic tank systems
- archaeological assessment
  - already has been approved by the Ministry
  - no further work is proposed
- traffic study
  - though not required previously, a traffic study is going to be undertaken

#### 7. trail system

- the main woodland trail will have a formal permanent trail agreement with the municipality
- Brad to retain ownership of all remnant lands

- Brad is agreeing to the conservation easement being placed on all remnant lands with the exception of Block 18

if anyone has concerns regarding the information above please let me know.

Brad

**Brad R. Pryde, P.Eng.**  
10 Collard Way, Box 1725,  
Port Elgin, Ontario, N0H 2C0  
519-832-0550 (Cell)  
519-832-5950 (Home)  
[brpryde@bmts.com](mailto:brpryde@bmts.com)

---

NOTICE: This communication and any attachments ("this message") may contain information which is privileged, confidential, proprietary or otherwise subject to restricted disclosure under applicable law. This message is for the sole use of the intended recipient(s). Any unauthorized use, disclosure, viewing, copying, alteration, dissemination or distribution of, or reliance on, this message is strictly prohibited. If you have received this message in error, or you are not an authorized or intended recipient, please notify the sender immediately by replying to this message, delete this message and all copies from your e-mail system and destroy any printed copies. You are receiving this communication because you are listed as a current WSP contact. Should you have any questions regarding WSP's electronic communications policy, please consult our Anti-Spam Commitment at [www.wsp.com/cas](http://www.wsp.com/cas). For any concern or if you believe you should not be receiving this message, please forward this message to [caslcompliance@wsp.com](mailto:caslcompliance@wsp.com) so that we can promptly address your request. Note that not all messages sent by WSP qualify as commercial electronic messages.

AVIS : Ce message, incluant tout fichier l'accompagnant (« le message »), peut contenir des renseignements ou de l'information privilégiés, confidentiels, propriétaires ou à divulgation restreinte en vertu de la loi. Ce message est destiné à l'usage exclusif du/des destinataire(s) voulu(s). Toute utilisation non permise, divulgation, lecture, reproduction, modification, diffusion ou distribution est interdite. Si vous avez reçu ce message par erreur, ou que vous n'êtes pas un destinataire autorisé ou voulu, veuillez en aviser l'expéditeur immédiatement et détruire le message et toute copie électronique ou imprimée. Vous recevez cette communication car vous faites partie des contacts de WSP. Si vous avez des questions concernant la politique de communications électroniques de WSP, veuillez consulter notre Engagement anti-pourriel au [www.wsp.com/lcap](http://www.wsp.com/lcap). Pour toute question ou si vous croyez que vous ne devriez pas recevoir ce message, prière de le transférer au [conformitelcap@wsp.com](mailto:conformitelcap@wsp.com) afin que nous puissions rapidement traiter votre demande. Notez que ce ne sont pas tous les messages transmis par WSP qui constituent des messages électroniques commerciaux.

-LAEmHhHzdJzBITWfa4Hgs7pbKl

CAUTION: EXTERNAL MAIL. DO NOT CLICK ON LINKS OR OPEN ATTACHMENTS YOU DO NOT TRUST.

**From:** Gibbs, Sophie  
**Sent:** November 17, 2020 9:50 AM  
**To:** SAROntario@ontario.ca  
**Cc:** Fitzpatrick, Erin  
**Subject:** Miramichi Shores Residential Development Information Request  
**Attachments:** Figure\_1\_Regional Context.pdf; Figure\_2\_Detailed View.pdf; MiramichiShores\_InfoRequest\_MECP\_05Nov2020.docx

Hello,

Please see the attached natural heritage information request and study area maps for the proposed residential development of the Miramichi Shores Subdivision, in the Town of Saugeen Shores, Bruce County. WSP has been retained by Miramichi Shores Land Development Limited to undertake an Environmental Impact Study (EIS). If there are any questions or concerns, please do not hesitate to contact myself or Erin Fitzpatrick (cc'd).

Thank you,

Sophie

Sophie Gibbs, H.B.Sc., M.E.S.  
Terrestrial Ecologist  
Ecology & Environment Impact Assessment (EIA)



T+ 1 519-904-1783  
M+ 1 519-998-6506  
[Sophie.Gibbs@wsp.com](mailto:Sophie.Gibbs@wsp.com)

582 Lancaster Street West  
Kitchener, Ontario  
N2K 1M3 Canada

[wsp.com](http://wsp.com)



2020-11-05

Permissions and Compliance  
Species at Risk Branch  
Ministry of Environment, Conservation and Parks  
50 Bloomington Rd, Aurora, ON L4G 0L8

Dear Sir/Madam:

WSP Canada Group Inc. (WSP) has been retained by Miramichi Shores Land Development Limited to undertake an Environmental Impact Study (EIS) for the proposed residential subdivision at the property described as Part of Lots 55 and 56, Town of Saugeen Shores, Ontario; herein referred to as “the Site.” The proposed works includes the construction of a new road, 14 low-density residential houses and a perforated storm water management system. The proposed EIS surveys will update a previously completed Natural Heritage EIS by Aquatic and Wildlife Services (AWS) in 2008 for the Mary Rose Subdivision. The proposed study area, including the location of the proposed houses, is shown on the attached study area figures (Figure 1: Regional Context; Figure 2: Detailed View). The study area falls within the jurisdiction of the Saugeen Valley Conservation Authority (SVCA). This update will include a background review of all relevant natural heritage information as well as site visits to document current site conditions.

In fulfillment of the update to the Natural Heritage EIS, updated ecological background information is required for the study area and adjacent natural areas. As such, we are formally contacting you to request any available Species at Risk (SAR) and natural heritage information pertinent to the study area.

WSP has reviewed the relevant resources publicly available including Land Information Ontario (LIO), INaturalist, Ebird, Atlas of Mammals in Ontario, Bat Conservation International range maps, Ontario Reptile and Amphibian Atlas mapping, and Ontario Butterfly Atlas mapping. There are no Provincially Significant Wetlands (PSWs), or Areas of Natural and Scientific Interest (ANSIs) within the study area.

Based on the available online databases, WSP is currently aware of the following SAR within the study area and vicinity:

- Dwarf Lake Iris (Special Concern)
- Little Brown Bat (*Myotis lucifugus*), Northern Myotis (*Myotis septentrionalis*), Small-footed Bat (*Myotis leibii*), and Tri-coloured Bat (*Perimyotis subflavus*) (Endangered)

Additional information we are seeking includes any of the following information that is not publicly available:

Species at Risk (SAR)

- List of SAR to be considered for the study area;
- Locations, observation dates and any other relevant information about SAR – if possible, please provide the UTM’s/accuracy codes;
- Locally rare species lists or records and/or rare vegetation communities known from the study area

WSP understands that administration of the Endangered Species Act (ESA 2007) has been transferred to the Ministry of Environment, Conservation and Parks (MECP), as of April 1, 2019. WSP will also be contacting the Ministry of Natural Resources and Forestry, as well as SVCA with a similar request for SAR and natural heritage information.

582 Lancaster Street West  
Kitchener, ON  
Canada N2K 1M3

T: +1 519 743-8778  
F: +1 519 743-8778  
wsp.com



If further information is required, please feel free to contact the undersigned at 519-904-1783 or through email at [Sophie.Gibbs@wsp.com](mailto:Sophie.Gibbs@wsp.com). Thank you for your assistance, it is greatly appreciated.

Yours sincerely,

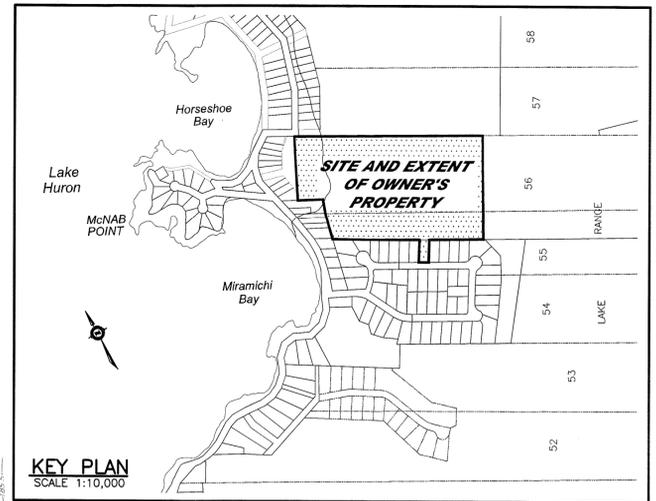
A handwritten signature in blue ink, appearing to read 'Sophie Gibbs'.

Sophie Gibbs  
Terrestrial Ecologist

**Legend**

	PROPOSED SUBDIVISION BOUNDARY		EXISTING FIREHYDRANT
	PROPOSED LOT LINE		EXISTING TREE LINE
	EXISTING PROPERTY/STREET LINE		EXISTING HYDRO GUY WIRE
	EXISTING CONTOUR		EXISTING HYDRO POLE
	EDGE OF EXISTING PAVEMENT		EXISTING TELEPHONE PEDESTAL
	EXISTING ZONING LIMITS		
	EXISTING TRAIL		
	EXISTING STREAM		
	DEVELOPABLE LAND BOUNDARY AS SHOWN ON SP2 (AQUATIC AND WILDLIFE SERVICES PLAN DATED DECEMBER 23, 2005.)		

NOTE: NUMBERING OF LOTS ON FINAL PLAN MAY VARY FROM THAT SHOWN ON THE DRAFT PLAN.



Copyright Reserved  
 THE CONTRACTOR SHALL VERIFY AND BE RESPONSIBLE FOR ALL DIMENSIONS. DO NOT SCALE THE DRAWING - ANY ERRORS OR OMISSIONS SHOULD BE REPORTED TO PRYDE SCHROPP MCCOMB INC. THE COPYRIGHTS TO ALL DESIGNS AND DRAWINGS ARE THE PROPERTY OF PRYDE SCHROPP MCCOMB INC. REPRODUCTION OR USE FOR OTHER THAN THAT AUTHORIZED BY PRYDE SCHROPP MCCOMB INC. IS FORBIDDEN.

**DRAFT PLAN OF SUBDIVISION**  
 BLOCK 15  
 REGISTERED PLAN No. 3M-209  
 AND PART OF LOTS 55 AND 56  
 LAKE RANGE  
 (GEOGRAPHIC TOWNSHIP OF SAUGEEN)  
 TOWN OF SAUGEEN SHORES  
 COUNTY OF BRUCE

**RELEVANT SITE INFORMATION**

RESIDENTIAL LOTS (14)	3.089 ha.
MUNICIPAL STREETS (MARY ROSE COURT)	0.659 ha.
WALKWAYS (BLOCKS 15 AND 16)	0.067 ha.
TO BE RETAINED BY OWNER (BLOCKS 17 AND 18)	12.437 ha.
<b>TOTAL PROPOSED SUBDIVISION</b>	<b>16.252 ha.</b>

**RESIDENTIAL LOT INFORMATION**  
 (AS DEFINED IN ZONING BY-LAW No. 201-2000)

LOT	FRONTAGE (m.)	AREA (sq.m.)
1	32.0	2139
2	30.0	2010
3	30.0	2010
4	31.8	2334
5	30.1	3928
6	35.2	2372
7	31.7	1775
8	30.0	1986
9	30.0	2010
10	30.0	2010
11	30.1	2693
12	30.1	1867
13	30.0	1728
14	30.0	1830

**ADDITIONAL INFORMATION REQUIRED UNDER SECTION 51 OF THE PLANNING ACT**

a. AS SHOWN	h. MUNICIPAL PIPED WATER
b. AS SHOWN	i. SILTY SAND
c. AS SHOWN	j. AS SHOWN
d. SINGLE FAMILY RESIDENTIAL	k. PAVED ROADS, WATER, STORM SEWERS, HYDRO, TELEPHONE, CABLE TV, FIRE AND POLICE PROTECTION, AMBULANCE
e. AS SHOWN	l. AS SHOWN
f. AS SHOWN	
g. AS SHOWN	

**SURVEYOR'S CERTIFICATE**

I CERTIFY THAT:  
 THE BOUNDARIES OF THE LANDS TO BE SUBDIVIDED  
 AND THEIR RELATIONSHIP TO THE ADJACENT LANDS  
 ARE CORRECTLY SHOWN.

*J. Brent England*  
 J. BRENT ENGLAND O.L.S.  
 VAN DINSMORE LTD.  
 ONTARIO LAND SURVEYORS

March 5, 2009

DATE

**OWNER'S CERTIFICATE**

I, THE REGISTERED OWNER OF THESE LANDS, HEREBY  
 AUTHORIZE PRYDE, SCHROPP, MCCOMB INC. TO SUBMIT  
 THIS DRAFT PLAN FOR APPROVAL.

Dec. 6/07

*Joseph Brewer Jr.*  
 OWNER  
 JOSEPH BREWER JR.

**Revision**

No.	Description	By	Appd.	Date
0	FIRST SUBMISSION	MG	BRP	2007.10.10
1	SECOND SUBMISSION-REVISED AS REQUESTED BY O.L.S.	JAF	BRP	2007.11.30
2	THIRD SUBMISSION; REVISED BOUNDARY-ACCESS ROAD	JAF	BRP	2009.02.20

# MARY ROSE SUBDIVISION

Project No. 00090 Scale 1:1250 Dwn by. JAF  
 Drawing No. DP1 Revision 2

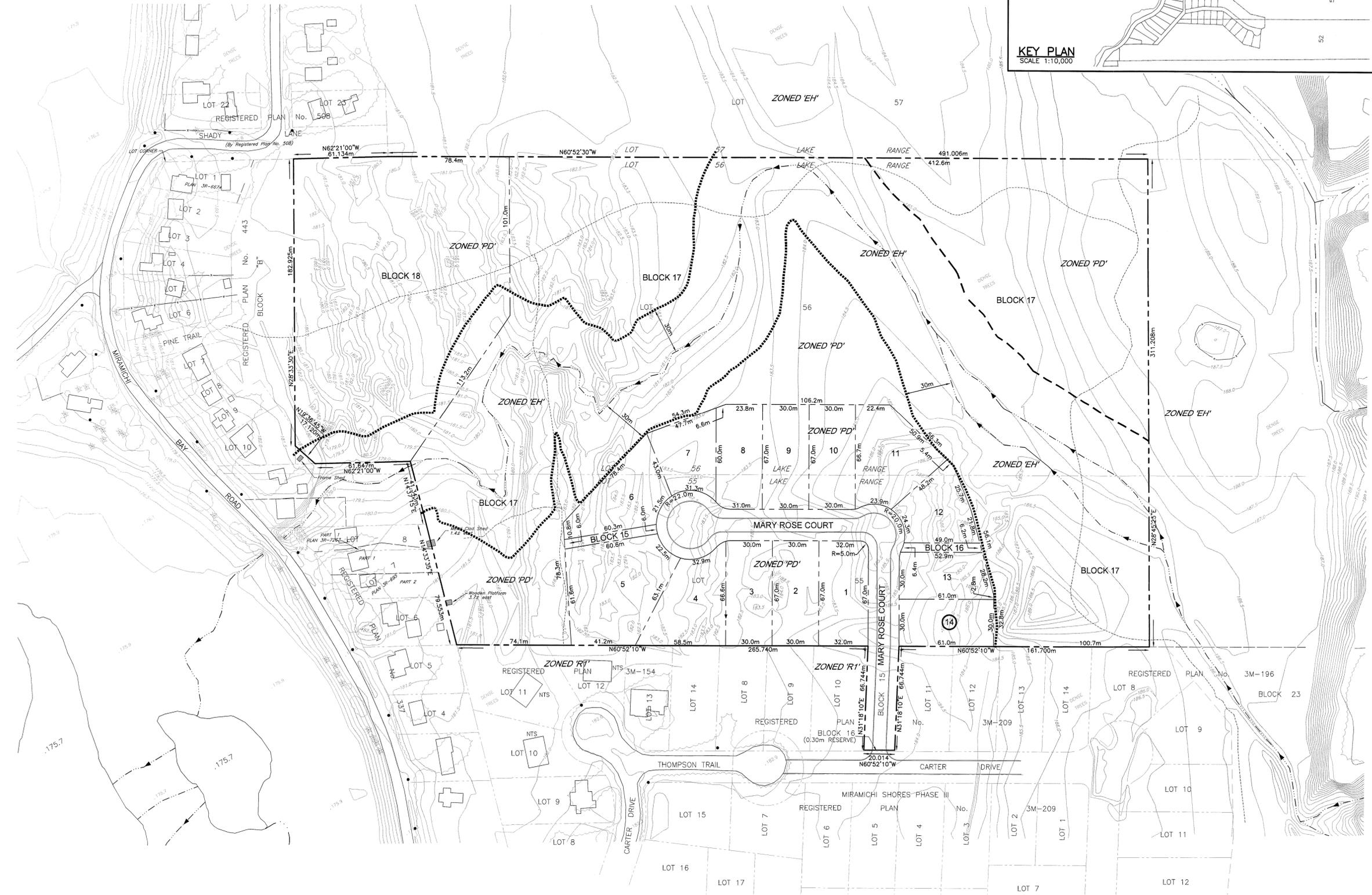
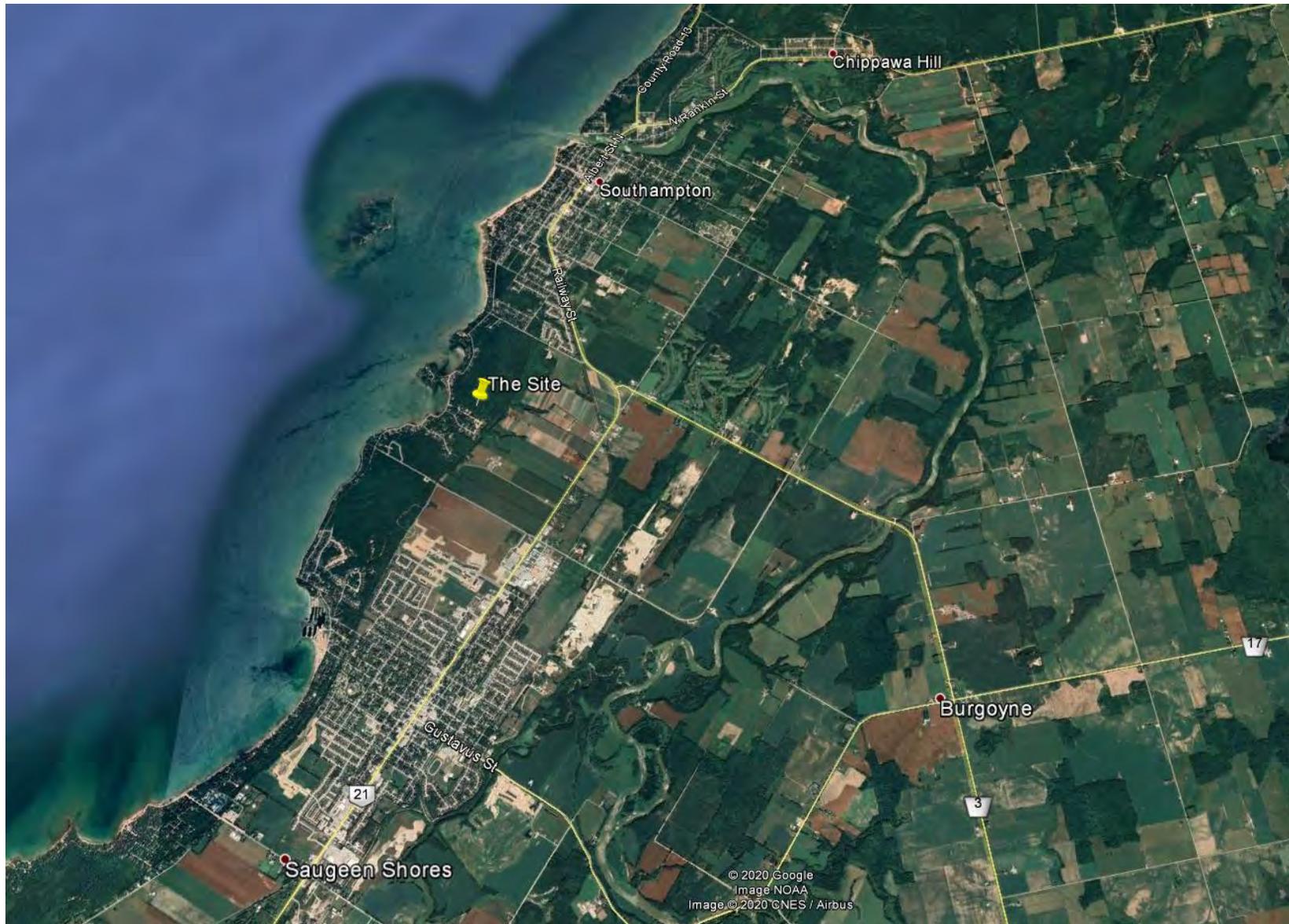


Figure 1: Regional Context



**From:** Species at Risk (MECP) <SAROntario@ontario.ca>  
**Sent:** November 17, 2020 9:51 AM  
**To:** Gibbs, Sophie  
**Subject:** Automatic reply: Miramichi Shores Residential Development Information Request

Thank you for your inquiry to the Permissions and Compliance team, Species at Risk Branch, Ministry of the Environment, Conservation and Parks.

#### What's New?

- The Ministry of the Environment, Conservation and Parks (MECP) has responsibility for the administration of the Ontario Endangered Species Act (ESA). In MECP, work associated with ESA authorizations has been centralized from Ministry of Natural Resources and Forestry district offices into one Permissions and Compliance team within the new Species at Risk Branch in MECP.

#### What Next?

- Your email is being reviewed by branch staff to determine the nature of your inquiry or submission. Your inquiry or submission will then be actioned to someone from our team for follow up as required.
- We strive to follow up with a response to your inquiry within 15 business days to confirm that your submission has been actioned out and to provide contact information.

#### Do you think you may need an ESA permit or authorization?

- Please visit <https://www.ontario.ca/page/species-risk> to learn more about protecting and recovering species at risk, then navigate to the Resources and Permits section, including [Register or Get a Permit](#) for more information about permits and authorizations under the ESA.
- You only need an authorization under the ESA (e.g. a permit or other type of authorization) if your work is going to contravene the ESA (e.g. if the activity you are proposing is going to kill, harm or harass a species at risk or damage or destroy their habitat). If you are able to undertake your work in a manner that does not contravene the ESA, that is what we call "avoidance" of impacts to species at risk or their habitat and it is the ideal scenario for clients and the species-the species aren't adversely impacted, and you don't need an authorization.

#### Do you want to know if any species at risk are at, or near, your project site? Do you need help determining if you need an ESA permit or authorization?

- We have developed a guide to help clients work through the preliminary screening process, including providing advice to clients on how they can gather information you have requested from publicly available information sources. The guide provides advice on how you can determine if any species at risk are likely to exist at your site. If you are seeking information regarding species at risk likely to occur at or near your site, please send an email to [sarontario@ontario.ca](mailto:sarontario@ontario.ca) and include "request for preliminary screening guide" in the subject line. To provide the most efficient service, it is recommended clients read this guide and explore applicable information sources prior to contacting [sarontario@ontario.ca](mailto:sarontario@ontario.ca) to begin discussions with the Permissions and Compliance team about your proposed project.

#### Do you want to report a suspected violation of the ESA?

- Please call the MECP Tips/Pollution Hotline at 1-866-663-8477 and provide the details requested. Someone may follow up with you directly to request additional information. We may not be able to follow up with you to provide you an update on the status of your tip as the status of any ongoing inspections or investigations is confidential until resolved.

**We also receive a high volume of inquiries related to Butternut (an endangered tree) to this email address. The following information can assist you if you have some of the more common questions regarding the ESA and impacts to Butternut.**

#### Do you think you may need an ESA permit or authorization to cut down a Butternut tree?

If a Butternut tree has been identified, a Butternut Health Assessment will need to be completed to assess the health of the tree in accordance with the document titled [Butternut Assessment Guidelines: Assessment of Butternut Tree Health for the Purposes of the Endangered Species Act, 2007](#). This will determine if the tree is Category 1, 2 or 3. Please note that Section 4.2 (Timing of Assessment) on page 10 of the Butternut Assessment Guidelines states that "A complete and accurate assessment of a Butternut tree can only be conducted during the leaf-on season." It also notes that "For the purposes of the ESA, an assessment will be considered to have been conducted during the leaf-on season if it was conducted between the dates of May 15 and August 31." For this reason, a Butternut Health Assessment should not be conducted until May 15 in order to get an accurate assessment of the live crown.

Once a Butternut Health Assessment has been completed and submitted to the MECP and 30 days have elapsed, ESA requirements can be identified as per below:

If a BHA identifies a tree as a hybrid, no authorization under the ESA is required to remove the tree, as it is not a pure Butternut and not protected under the ESA.

If a BHA identifies a tree as a Category 1 tree, no authorization under the ESA is required to remove the tree, as it is affected by Butternut canker (a fungal disease) to such an advanced degree that retaining the tree would not support the protection or recovery of Butternuts in the area.

If a BHA identifies a tree as a Category 2 tree, Registration is enabled under [section 23.7 of the Ontario Regulation 242/08](#) so long as all requirements of the Regulation are met.

If a BHA identifies a tree as a Category 3 tree, then a [17\(2\)\(c\) Permit](#) is likely required.

If you are proposing to rely on section 23.7 of the Regulation 242/08 for the removal of Category 1 trees or hybrids, please note that you are eligible to do so 30 days after you have submitted your BHA to MECP at [SAROntario@ontario.ca](mailto:SAROntario@ontario.ca) unless the MECP has indicated otherwise prior to the end of the 30 day period.

If you are proposing to rely on section 23.7 of the Regulation 242/08 for the removal of a maximum of 10 Category 2 (retainable) trees, after the 30 days you must register a Notice of Impact with the [ESA Registry](#), and follow additional rules. Once you have registered and received a reply in regards to your Notice of Impact, you may remove up to 10 Category 2 trees.

#### Are you submitting a Butternut Health Assessment?

Please submit your Butternut Health Assessment Forms to [sarontario@ontario.ca](mailto:sarontario@ontario.ca). In the subject line, clearly indicate that the email contains a BHA and the municipality within which the BHA was conducted. Once received, the submission will be triaged and actioned.

#### Did you submit a BHA assessment where Category 1, 2 or hybrid trees are impacted?

If after the 30 days, you have not received a response from MECP, you may remove Category 1, 2 or hybrid trees so long as all requirements of the Regulation in regards to Category 2 trees are met.

#### Did you recently see a species at risk?

- Please visit <https://www.ontario.ca/page/report-rare-species-animals-and-plants> for information on how to report a species at risk sighting.

#### Would you like to learn more about species at risk and the ESA and its related policies?

- Please visit <https://www.ontario.ca/page/species-risk>.
- Policies under the ESA, ministry-endorsed survey protocols and a number of best-management practices related to how you can avoid or minimize impacts to species at risk can be found online at <https://www.ontario.ca/page/species-risk-guides-and-resources>.
- General inquiries related to the ESA or species at risk can be directed to [esa-sarinquiries@ontario.ca](mailto:esa-sarinquiries@ontario.ca)

**From:** Species at Risk (MECP) <SAROntario@ontario.ca>  
**Sent:** February 1, 2021 4:19 PM  
**To:** Gibbs, Sophie  
**Subject:** RE: Miramichi Shores Residential Development Information Request  
**Attachments:** DRAFT-Proponents Guide to Preliminary Screening-May 2019.pdf

Hi Sophie,  
Sorry for the delay in responding to your info request. We have a backlog of these types of files at the moment and I currently working my way through them.

Please note it remains the clients responsibility to:

- Carry out preliminary screening for their project,
- Obtain the best available information for all applicable information sources,
- Conduct necessary field studies or inventories to identify and confirm the presence of absence of species at risk or their habitat,
- Consider any potential impacts to species at risk that a proposed activity might cause, and
- Comply with the Endangered Species Act (ESA).

I have attached the Proponents Guide to Preliminary Screening that should help you to begin the pre-screening and review process. In addition to a desktop exercise on-site assessments can better verify site conditions, identify and confirm presence of species at risk and/or their habitats. It is the responsibility of the proponent to ensure that species at risk are not killed, harmed, or harassed, and that their habitat is not damaged or destroyed through the activities carried out on the site.

The Ministry of Environment, Conservation and Parks is only responsible for species at risk and the Endangered Species Act.  
If you would like to discuss further feel free to reach out directly.

Lisa

*Lisa McShane*

Management Biologist | Permissions and Compliance Section, Species at Risk Branch | Land and Water Division | Ministry of the Environment, Conservation and Parks | [lisa.mcshane@ontario.ca](mailto:lisa.mcshane@ontario.ca) | (226) 668-0527

---

**From:** Gibbs, Sophie <[Sophie.Gibbs@wsp.com](mailto:Sophie.Gibbs@wsp.com)>  
**Sent:** Tuesday, November 17, 2020 9:50 AM  
**To:** Species at Risk (MECP) <[SAROntario@ontario.ca](mailto:SAROntario@ontario.ca)>  
**Cc:** Fitzpatrick, Erin <[Erin.Fitzpatrick@wsp.com](mailto:Erin.Fitzpatrick@wsp.com)>  
**Subject:** Miramichi Shores Residential Development Information Request

**CAUTION -- EXTERNAL E-MAIL - Do not click links or open attachments unless you recognize the sender.**

Hello,

Please see the attached natural heritage information request and study area maps for the proposed residential development of the Miramichi Shores Subdivision, in the Town of Saugeen Shores, Bruce County. WSP has been retained by Miramichi Shores Land Development Limited to undertake an Environmental Impact Study (EIS). If there are any questions or concerns, please do not hesitate to contact myself or Erin Fitzpatrick (c'd).

Thank you,

Sophie

Sophie Gibbs, H.B.Sc., M.E.S.  
Terrestrial Ecologist  
Ecology & Environment Impact Assessment (EIA)



T+ 1 519-904-1783  
M+ 1 519-998-6506  
[Sophie.Gibbs@wsp.com](mailto:Sophie.Gibbs@wsp.com)

582 Lancaster Street West  
Kitchener, Ontario  
N2K 1M3 Canada

[wsp.com](http://wsp.com)

---

NOTICE: This communication and any attachments ("this message") may contain information which is privileged, confidential, proprietary or otherwise subject to restricted disclosure under applicable law. This message is for the sole use of the intended recipient(s). Any unauthorized use, disclosure, viewing, copying, alteration, dissemination or distribution of, or reliance on, this message is strictly prohibited. If you have received this message in error, or you are not an authorized or intended recipient, please notify the sender immediately by replying to this message, delete this message and all copies from your e-mail system and destroy any printed copies. You are receiving this communication because you are listed as a current WSP contact. Should you have any questions regarding WSP's electronic communications policy, please consult our Anti-Spam Commitment at [www.wsp.com/cas](http://www.wsp.com/cas). For any concern or if you believe you should not be receiving this message, please forward this message to [cas@compliance@wsp.com](mailto:cas@compliance@wsp.com) so that we can promptly address your request. Note that not all messages sent by WSP qualify as commercial electronic messages.

AVIS : Ce message, incluant tout fichier l'accompagnant (« le message »), peut contenir des renseignements ou de l'information privilégiés, confidentiels, propriétaires ou à divulgation restreinte en vertu de la loi. Ce message est destiné à l'usage exclusif du/des destinataire(s) voulu(s). Toute utilisation non permise, divulgation, lecture, reproduction, modification, diffusion ou distribution est interdite. Si vous avez reçu ce message par erreur, ou que vous n'êtes pas un destinataire autorisé ou voulu, veuillez en aviser l'expéditeur immédiatement et détruire le message et toute copie électronique ou imprimée. Vous recevez cette communication car vous faites partie des contacts de WSP. Si vous avez des questions concernant la politique de communications électroniques de WSP, veuillez consulter notre Engagement anti-pourriel au [www.wsp.com/lcap](http://www.wsp.com/lcap). Pour toute question ou si vous croyez que vous ne devriez pas recevoir ce message, prière de le transférer au [conformite@cap@wsp.com](mailto:conformite@cap@wsp.com) afin que nous puissions rapidement traiter votre demande. Notez que ce ne sont pas tous les messages transmis par WSP qui constituent des messages électroniques commerciaux.

[Erin.Fitzpatrick@wsp.com](mailto:Erin.Fitzpatrick@wsp.com)

***Client's Guide to Preliminary Screening for Species at Risk***

***Ministry of the Environment, Conservation and Parks  
Species at Risk Branch, Permissions and Compliance***

***DRAFT - May 2019***

## Table of Contents

1.0 Purpose, Scope, Background and Context .....	3
1.1 Purpose of this Guide.....	3
1.2 Scope.....	3
1.3 Background and Context.....	4
2.0 Roles and Responsibilities .....	5
3.0 Information Sources .....	6
3.1 Make a Map: Natural Heritage Areas .....	7
3.2 Land Information Ontario (LIO) .....	7
3.3 Additional Species at Risk Information Sources.....	8
3.4 Information Sources to Support Impact Assessments .....	8
4.0 Check-List .....	9

## 1.0 Purpose, Scope, Background and Context

### 1.1 Purpose of this Guide

This guide has been created to:

- help clients better understand their obligation to gather information and complete a preliminary screening for species at risk before contacting the ministry,
- outline guidance and advice clients can expect to receive from the ministry at the preliminary screening stage,
- help clients understand how they can gather information about species at risk by accessing publicly available information housed by the Government of Ontario, and
- provide a list of other potential sources of species at risk information that exist outside the Government of Ontario.

It remains the client's responsibility to:

- carry out a preliminary screening for their projects,
- obtain best available information from all applicable information sources,
- conduct any necessary field studies or inventories to identify and confirm the presence or absence of species at risk or their habitat,
- consider any potential impacts to species at risk that a proposed activity might cause, and
- comply with the *Endangered Species Act (ESA)*.

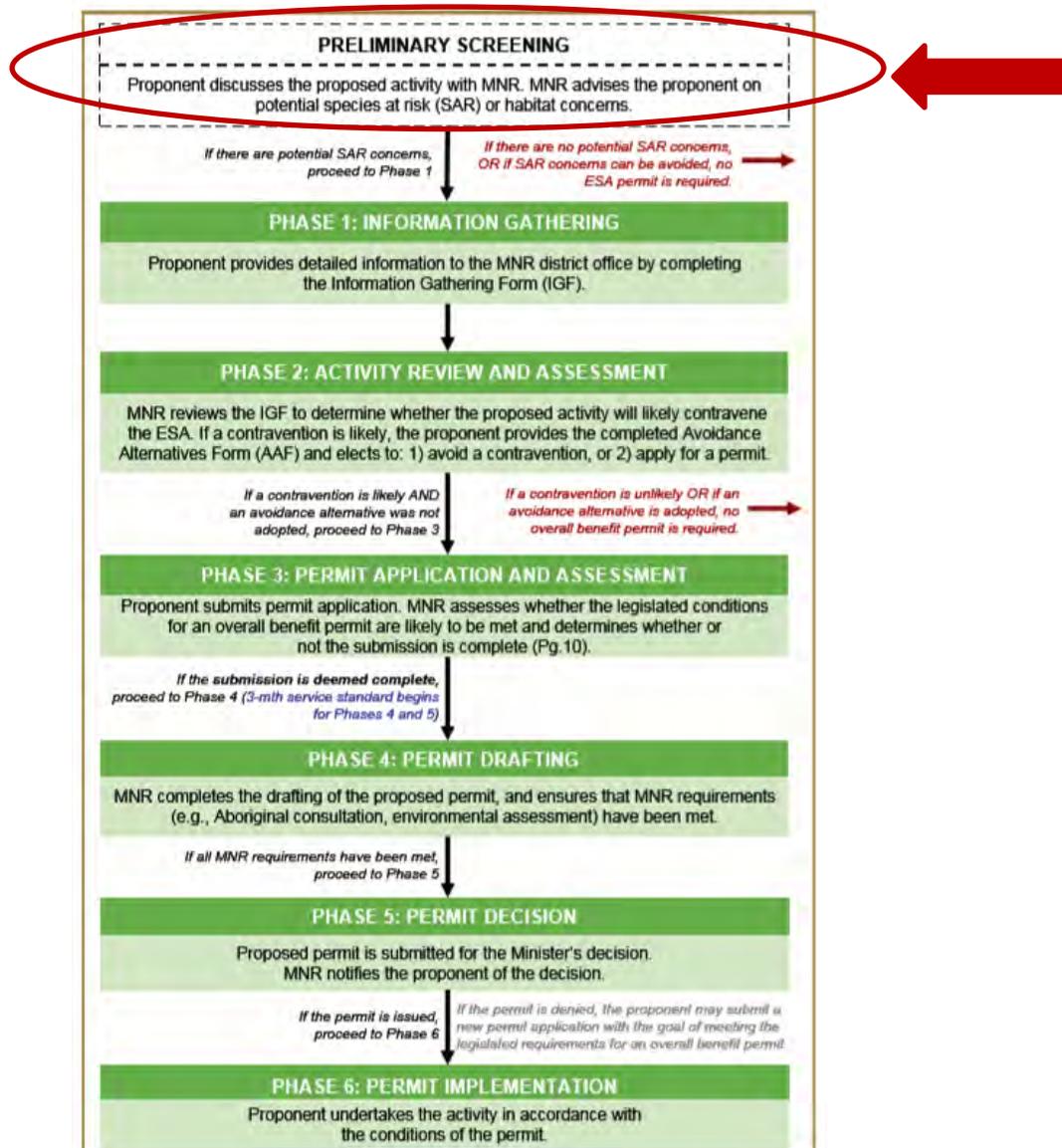
**To provide the most efficient service, clients should initiate species at risk screenings and seek information from all applicable information sources identified in this guide, at a minimum, prior to contacting Government of Ontario ministry offices for further information or advice.**

### 1.2 Scope

This guide is a resource for clients seeking to understand if their activity is likely to impact species at risk or if they are likely to trigger the need for an authorization under the ESA. It is not intended to circumvent any detailed site surveys that may be necessary to document species at risk or their habitat nor to circumvent the need to assess the impacts of a proposed activity on species at risk or their habitat. This guide is not an exhaustive list of available information sources for any given area as the availability of information on species at risk and their habitat varies across the province. This guide is intended to support projects and activities carried out on Crown and private land, by private landowners, businesses, other provincial ministries and agencies, or municipal government.

### 1.3 Background and Context

To receive advice on their proposed activity, clients must first determine whether any species at risk or their habitat exist or are likely to exist at or near their proposed activity, and whether their proposed activity is likely to contravene the ESA. Once this step is complete, client may contact the ministry at [SAROntario@ontario.ca](mailto:SAROntario@ontario.ca) to discuss the main purpose, general methods, timing and location of their proposed activity as well as information obtained about species at risk and their habitat at, or near, the site. At this stage, the ministry can provide advice and guidance to the client about potential species at risk or habitat concerns, measures that the client is considering to avoid adverse effects on species at risk or their habitat and whether additional field surveys are advisable. This is referred to as the “Preliminary Screening” stage. For more information on additional phases in the diagram below, please refer to the *Endangered Species Act Submission Standards for Activity Review and 17(2)(c) Overall Benefit Permits* policy available online at <https://www.ontario.ca/page/species-risk-overall-benefit-permits>



## 2.0 Roles and Responsibilities

To provide the most efficient service, clients should initiate species at risk screenings and seek information from all applicable information sources identified in this guide prior to contacting Government of Ontario ministry offices for further information or advice.

**Step 1:** Client seeks information regarding species at risk or their habitat that exist, or are likely to exist, at or near their proposed activity by referring to all applicable information sources identified in this guide.

**Step 2:** Client reviews and consider guidance on whether their proposed activity is likely to contravene the ESA (see section 3.4 of this guide for guidance on what to consider).

**Step 3:** Client gathers information identified in the checklist in section 4 of this guide.

**Step 4:** Client contacts the ministry at [SAROntario@ontario.ca](mailto:SAROntario@ontario.ca) to discuss their preliminary screening. Ministry staff will ask the client questions about the main purpose, general methods, timing and location of their proposed activity as well as information obtained about species at risk and their habitat at, or near, the site. Ministry staff will also ask the client for their interpretation of the impacts of their activity on species at risk or their habitat as well as measures the client has considered to avoid any adverse impacts.

**Step 5:** Ministry staff will provide advice on next steps.

**Option A:** Ministry staff may advise the client they can proceed with their activity without an authorization under the ESA where the ministry is confident that:

- no protected species at risk or habitats are likely to be present at or near the proposed location of the activity; or
- protected species at risk or habitats are known to be present but the activity is not likely to contravene the ESA; or
- through the adoption of avoidance measures, the modified activity is not likely to contravene the ESA.

**Option B:** Ministry staff may advise the client to proceed to Phase 1 of the overall benefit permitting process (i.e. Information Gathering in the previous diagram), where:

- there is uncertainty as to whether any protected species at risk or habitats are present at or near the proposed location of the activity; or
- the potential impacts of the proposed activity are uncertain; or
- ministry staff anticipate the proposed activity is likely to contravene the ESA.

### 3.0 Information Sources

Land Information Ontario (LIO) and the Natural Heritage Information Centre (NHIC) maintain and provide information about species at risk, as well as related information about fisheries, wildlife, crown lands, protected lands and more. This information is made available to organizations, private individuals, consultants, and developers through online sources and is often considered under various pieces of legislation or as part of regulatory approvals and planning processes.

The information available from LIO or NHIC and the sources listed in this guide should not be considered as a substitute for site visits and appropriate field surveys. Generally, this information can be regarded as a starting point from which to conduct further field surveys, if needed. While this data represents best available current information, it is important to note that a lack of information for a site does not mean that species at risk or their habitat are not present. There are many areas where the Government of Ontario does not currently have information, especially in more remote parts of the province. The absence of species at risk location data at or near your site does not necessarily mean no species at risk are present at that location. On-site assessments can better verify site conditions, identify and confirm presence of species at risk and/or their habitats.

Information on the location (i.e. observations and occurrences) of species at risk is considered sensitive and therefore publicly available only on a 1km square grid as opposed to as a detailed point on a map. This generalized information can help you understand which species at risk are in the general vicinity of your proposed activity and can help inform field level studies you may want to undertake to confirm the presence, or absence of species at risk at or near your site.

Should you require specific and detailed information pertaining to species at risk observations and occurrences at or near your site on a finer geographic scale; you will be required to demonstrate your need to access this information, to complete data sensitivity training and to obtain a Sensitive Data Use License from the NHIC. Information on how to obtain a license can be found online at <https://www.ontario.ca/page/get-natural-heritage-information>.

Many organizations (e.g. other Ontario ministries, municipalities, conservation authorities) have ongoing licensing to access this data so be sure to check if your organization has this access and consult this data as part of your preliminary screening if your organization already has a license.

### 3.1 Make a Map: Natural Heritage Areas

The Make a Natural Heritage Area Map (available online at [http://www.gisapplication.lrc.gov.on.ca/mamnh/Index.html?site=MNR\\_NHLUPS\\_NaturalHeritage&viewer=NaturalHeritage&locale=en-US](http://www.gisapplication.lrc.gov.on.ca/mamnh/Index.html?site=MNR_NHLUPS_NaturalHeritage&viewer=NaturalHeritage&locale=en-US)) provides public access to natural heritage information, including species at risk, without the user needing to have Geographic Information System (GIS) capability. It allows users to view and identify generalized species at risk information, mark areas of interest, and create and print a custom map directly from the web application. The tool also shows topographic information such as roads, rivers, contours and municipal boundaries.

Users are advised that sensitive information has been removed from the natural areas dataset and the occurrences of species at risk has been generalized to a 1-kilometre grid to mitigate the risks to the species (e.g. illegal harvest, habitat disturbance, poaching).

The web-based mapping tool displays natural heritage data, including:

- Generalized Species at risk occurrence data (based on a 1-km square grid),
- Natural Heritage Information Centre data.

Data cannot be downloaded directly from this web map; however, information included in this application is available digitally through Land Information Ontario (LIO) at <https://www.ontario.ca/page/land-information-ontario>.

### 3.2 Land Information Ontario (LIO)

Most natural heritage data is publicly available. This data is managed in a large provincial corporate database called the LIO Warehouse and can be accessed online through the LIO Metadata Management Tool at <https://www.javacoeapp.lrc.gov.on.ca/geonetwork/srv/en/main.home>. This tool provides descriptive information about the characteristics, quality and context of the data. Publicly available geospatial data can be downloaded directly from this site.

While most data are publicly available, some data may be considered highly sensitive (i.e. nursery areas for fish, species at risk observations) and as such, access to some data maybe restricted.

### 3.3 Additional Species at Risk Information Sources

- The Breeding Bird Atlas can be accessed online at <http://www.birdsontario.org/atlas/index.jsp?lang=en>
- eBird can be accessed online at <https://ebird.org/home>
- iNaturalist can be accessed online at <https://www.inaturalist.org/>
- The Ontario Reptile and Amphibian Atlas can be accessed online at <https://ontarionature.org/programs/citizen-science/reptile-amphibian-atlas>
- Your local Conservation Authority. Information to help you find your local Conservation Authority can be accessed online at <https://conservationontario.ca/conservation-authorities/find-a-conservation-authority/>

Local naturalist groups or other similar community-based organizations

- Local Indigenous communities
- Local land trusts or other similar Environmental Non-Government Organizations
- Field level studies to identify if species at risk, or their habitat, are likely present or absent at or near the site.
- When an activity is proposed within one of the continuous caribou ranges, please be sure to consider the caribou Range Management Policy. This policy includes figures and maps of the continuous caribou range, can be found online at <https://www.ontario.ca/page/range-management-policy-support-woodland-caribou-conservation-and-recovery>

### 3.4 Information Sources to Support Impact Assessments

- Guidance to help you understand if your activity is likely to adversely impact species at risk or their habitat can be found online at <https://www.ontario.ca/page/policy-guidance-harm-and-harass-under-endangered-species-act> and <https://www.ontario.ca/page/categorizing-and-protecting-habitat-under-endangered-species-act>
- A list of species at risk in Ontario is available online at <https://www.ontario.ca/page/species-risk-ontario>. On this webpage, you can find out more about each species, including where it lives, what threatens it and any specific habitat protections that apply to it by clicking on the photo of the species.

## 4.0 Check-List

Please feel free to use the check list below to help you confirm you have explored all applicable information sources and to support your discussion with Ministry staff at the preliminary screening stage.

- ✓ Land Information Ontario (LIO)
- ✓ Natural Heritage Information Centre (NHIC)
- ✓ The Breeding Bird Atlas
- ✓ eBird
- ✓ iNaturalist
- ✓ Ontario Reptile and Amphibian Atlas
- ✓ List Conservation Authorities you contacted: \_\_\_\_\_  
\_\_\_\_\_
- ✓ List local naturalist groups you contacted: \_\_\_\_\_  
\_\_\_\_\_
- ✓ List local Indigenous communities you contacted: \_\_\_\_\_  
\_\_\_\_\_
- ✓ List any other local land trusts or Environmental Non-Government Organizations you contacted: \_\_\_\_\_  
\_\_\_\_\_
- ✓ List and field studies that were conducted to identify species at risk, or their habitat, likely to be present or absent at or near the site: \_\_\_\_\_  
\_\_\_\_\_
- ✓ List what you think the likely impacts of your activity are on species at risk and their habitat (e.g. damage or destruction of habitat, killing, harming or harassing species at risk): \_\_\_\_\_  
\_\_\_\_\_

# APPENDIX

## C SAR SCREENING



**Appendix C: SAR Screening Table**

Species	ESA Status <sup>1</sup> and Regional Occurrence	ESA Protection <sup>2</sup>	Source of Record (Date)	Key Habitats Used by Species in Ontario	Reasonable Likelihood of Presence in Site	Surveys Undertaken	Results of Field Surveys	Likelihood and Magnitude of Impacts to Species or Habitat
Birds								
<b>Wood Thrush</b> <i>(Hylocichla mustelina)</i>	SC	N/A	OBBA	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 (MNRF Guelph - Waterloo List, 2014)	Moderate - Abundant mature deciduous or mixed forest is present, however understory is mostly open.	Two-season breeding bird surveys and general habitat surveys	No observations	Minimal - Species not observed during breeding bird surveys. Timing restrictions on vegetation removal are to be employed to avoid potential for direct impacts.
<b>Chimney Swift</b> <i>(Chaetura pelagica)</i>	THR	Species and General Habitat Protection	OBBA	Historically found in deciduous and coniferous, usually wet forest types, all with a well-developed, dense shrub layer; now most are found in urban areas in large uncapped chimneys (MNRF Guelph - Waterloo List, 2014)	Minimal - Unlikely to occur as a foraging visitant over the forest tract; no uncapped chimneys present within the Site, and potential for breeding in natural habitats (hollow snags) is low.	Two-season breeding bird surveys and general habitat surveys	No observations	None - Suitable habitat is not present, and no individuals were observed. Timing restrictions on vegetation removal are to be employed to avoid potential for direct impacts.
<b>Eastern Wood-pewee</b> <i>(Contopus virens)</i>	SC	N/A	OBBA	Associated with deciduous and mixed forests. Within mature and intermediate age stands it prefers areas with little understory vegetation as well as forest clearings and edges (MNRF Guelph - Waterloo List, 2014)	High - Abundant suitable habitat is present, with mature deciduous and mixed forest with little understory vegetation	Two-season breeding bird surveys and general habitat surveys	4 Individuals observed in Unit 1 with probable breeding evidence	Minimal - Extensive suitable habitat is available adjacent to the Site. Timing restrictions on vegetation removal are to be employed to avoid potential for direct impacts.
<b>Bank Swallow</b> <i>(Riparia riparia)</i>	THR	Species and General Habitat Protection	OBBA	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 (MNRF Guelph - Waterloo List, 2014)	Minimal - Unlikely to occur as a foraging visitant over the forest tract; no breeding habitat (exposed banks) within or directly adjacent to the Site.	Two-season breeding bird surveys and general habitat surveys	No observations	None - Suitable habitat is not present, and no individuals were observed. Timing restrictions on vegetation removal are to be employed to avoid potential for direct impacts.
<b>Barn Swallow</b> <i>(Hirundo rustica)</i>	THR	Species and General Habitat Protection	OBBA	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. (MNRF Guelph - Waterloo List, 2014)	Minimal - Unlikely to occur as a foraging visitant over the forest tract; no breeding habitat (barns or open buildings) within or directly adjacent to the Site.	Two-season breeding bird surveys and general habitat surveys	No observations	None - Suitable habitat is not present, and no individuals were observed. Timing restrictions on vegetation removal are to be employed to avoid potential for direct impacts.

Species	ESA Status <sup>1</sup> and Regional Occurrence	ESA Protection <sup>2</sup>	Source of Record (Date)	Key Habitats Used by Species in Ontario	Reasonable Likelihood of Presence in Site	Surveys Undertaken	Results of Field Surveys	Likelihood and Magnitude of Impacts to Species or Habitat
<b>Bobolink</b> ( <i>Dolichonyx oryzivorus</i> )	THR	Species and General Habitat Protection	OBBA	Generally prefers open grasslands and hay fields. In migration and in winter uses freshwater marshes and grasslands (MNRF Guelph - Waterloo List, 2014)	None – No grassland habitat present within or adjacent to the Site.	Two-season breeding bird surveys and general habitat surveys	No observations	None - Suitable habitat is not present, and no individuals were observed. Timing restrictions on vegetation removal are to be employed to avoid potential for direct impacts.
<b>Eastern Meadowlark</b> ( <i>Sturnella magna</i> )	THR	Species and General Habitat Protection	OBBA	Generally prefers grassy pastures, meadows and hay fields. Nests are always on the ground and usually hidden in or under grass clumps (MNRF Guelph - Waterloo List, 2014)	None – No grassland habitat present within or adjacent to the Site.	Two-season breeding bird surveys and general habitat surveys	No observations	None - Suitable habitat is not present, and no individuals were observed. Timing restrictions on vegetation removal are to be employed to avoid potential for direct impacts.
<b>Canada Warbler</b> ( <i>Cardellina canadensis</i> )	SC	N/A	OBBA	Generally prefers wet coniferous, deciduous 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 (MNRF Guelph - Waterloo List, 2014)	Moderate - Abundant suitable mature forest and swamp present, however understory and shrub layers are generally sparse.	Two-season breeding bird surveys and general habitat surveys	No observations	Minimal - Species not observed during breeding bird surveys. Timing restrictions on vegetation removal are to be employed to avoid potential for direct impacts.
Insects								
<b>Monarch</b> ( <i>Danaus plexippus</i> )	SC	N/A		Exist primarily wherever milkweed and wildflowers exist; abandoned farmland, along roadsides, and other open spaces (MNRF Guelph - Waterloo List, 2014)	Minimal - Very little suitable open space within the Site.	General habitat surveys	No observations	None - Suitable habitat is not present, and no individuals were observed.
Mammals								
<b>Small-footed Bat</b> ( <i>Myotis leibii</i> )	END	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 (MNRF Guelph - Waterloo List, 2014)	Moderate - Some potential to occur as foraging visitant along the stream corridor and forest gaps; low potential for maternity roost habitat in forested areas or buildings (preferred habitat in cliff faces or exposed rock outcrops is not present).	General habitat surveys	No observations	Minimal - Unlikely to be impacted as foraging visitant (majority of works to occur during day time, when bats are not active); removal of a small portion of potential maternity roost habitat to be mitigated with the use of tree removal timing restrictions.

Species	ESA Status <sup>1</sup> and Regional Occurrence	ESA Protection <sup>2</sup>	Source of Record (Date)	Key Habitats Used by Species in Ontario	Reasonable Likelihood of Presence in Site	Surveys Undertaken	Results of Field Surveys	Likelihood and Magnitude of Impacts to Species or Habitat
<b>Little Brown Bat (Little Brown Myotis) (<i>Myotis lucifugus</i>)</b>	END	Species and General Habitat Protection		Overwintering habitat: Caves and mines that remain above 0 degrees Celsius. Maternal Roosts: Often associated with buildings (attics, barns etc.). Occasionally found in trees (25-44 cm dbh) (MNRG Guelph - Waterloo List, 2014)	Moderate - Some potential to occur as foraging visitant along the stream corridor and forest gaps; Low potential for maternity roost habitat in forested habitat within Site (typical roosting habitat in suitable buildings is not present).	General habitat surveys	No observations	Minimal - Unlikely to be impacted as foraging visitant (majority of works to occur during day time, when bats are not active); removal of a small portion of potential maternity roost habitat to be mitigated with the use of tree removal timing restrictions.
<b>Northern Long-eared Bat (Northern Myotis) (<i>Myotis septentrionalis</i>)</b>	END	Species and General Habitat Protection		Overwintering habitat: Caves and mines that remain above 0 degrees Celsius. Maternal Roosts: Often associated with cavities of large diameter trees (25-44 cm dbh). Occasionally found in structures (attics, barns etc.) (MNRG Guelph - Waterloo List, 2014)	High - Likely to occur as foraging visitant along the stream corridor and forest gaps; high potential for maternity roost habitat in forested habitat within Site.	General habitat surveys	No observations	Minimal - Unlikely to be impacted as foraging visitant (majority of works to occur during day time, when bats are not active); removal of a small portion of potential maternity roost habitat to be mitigated with the use of tree removal timing restrictions.
<b>Tri-colored Bat (<i>Perimyotis subflavus</i>)</b>	END	Species and General Habitat Protection		Overwintering habitat: Caves and mines that remain above 0 degrees Celsius. Maternal Roosts: Manmade structures or tree cavities. Foraging over still water, rivers, or in forest gaps (COSEWIC 2013f)	High - Likely to occur as foraging visitant along the stream corridor and forest gaps; high potential for maternity roost habitat in forested habitat within Site.	General habitat surveys	No observations	Minimal - Unlikely to be impacted as foraging visitant (majority of works to occur during day time, when bats are not active); removal of a small portion of potential maternity roost habitat to be mitigated with the use of tree removal timing restrictions.
Plants								
<b>Dwarf Lake Iris (<i>Iris lacustris</i>)</b>	SC	N/A		In Ontario, Dwarf Lake Iris grows on sand or thin soil over limestone gravel or bedrock. It prefers open or somewhat shaded areas. It is mostly found in Eastern White Cedar or Balsam Fir woodlands, but also occurs in cedar swamps, clearings on forested sand dunes, and in alvars (open areas of limestone bedrock with very little soil) (MNRG Species Profile Online 2014).	None - Open or semi-open areas are highly limited within the site and where present they are wetland habitats; soils are sandy, though deep; and other preferred habitat (i.e. alvar) is not present.	Three-season botanical inventory	No observations	None - Suitable habitat is not present, and no individuals were observed.

Species	ESA Status <sup>1</sup> and Regional Occurrence	ESA Protection <sup>2</sup>	Source of Record (Date)	Key Habitats Used by Species in Ontario	Reasonable Likelihood of Presence in Site	Surveys Undertaken	Results of Field Surveys	Likelihood and Magnitude of Impacts to Species or Habitat
<b>Hart's-tongue Fern</b> ( <i>Asplenium scolopendrium</i> )	SC	N/A		Grows on calcareous rocks in deep shade on slopes in deciduous forest. Most Ontario occurrences are in maple-beech forest. Established plants can grow in exposed, rocky crevices and on outcrops, but moist, mossy areas seem to be essential for spore germination and early plant development (MNR Species Profile Online 2014).	Minimal - No ideal forest habitat (maple beech forest) is present, no rocky outcrops are present, and mossy slopes are limited within the Site. This species is primarily found on the escarpment.	Three-season botanical inventory	No observations	None - Suitable habitat is not present, and no individuals were observed.
Reptiles								
<b>Snapping Turtle</b> ( <i>Chelydra serpentina</i> )	SC	N/A	ORAA	Generally inhabit shallow waters where they can hide under the soft mud and leaf litter. Nesting sites usually occur on gravelly or sandy areas along streams. Snapping Turtles often take advantage of man-made structures for nest sites, including roads (especially gravel shoulders), dams and aggregate pits (MNR Guelph - Waterloo List, 2014)	None - Although abundant suitable habitat is present along the Lake Huron shoreline, the stream within the Site is not suitable for any lifecycle needs of this species. Dispersal though the site is unlikely given the lack of suitable habitat directly adjacent to the property.	General habitat surveys	No observations	None - Suitable habitat is not present, and no individuals were observed.

# APPENDIX

## D SPECIES LISTS



**Appendix F1 – Vascular Plant Species List**

SCIENTIFIC NAME	COMMON NAME	CC <sup>1</sup>	CW <sup>1</sup>	OWES WETLAND PLANT LIST <sup>2</sup>	G_RANK <sup>3</sup>	N_RANK	S_RANK <sup>4</sup>	COSEWIC <sup>5</sup>	SARA <sup>6</sup>	SARO <sup>7</sup>	NATIVE STATUS <sup>9</sup>	Bruce Peninsula Rare Plants (Johnson 2016) <sup>8</sup>
<i>Abies balsamea</i>	Balsam Fir	5	-3	X	G5	N5	S5				N	C
<i>Acer rubrum</i>	Red Maple	4	0	X	G5	N5	S5				N	C
<i>Acer saccharum</i>	Sugar Maple	4	3		G5	N5	S5				N	C
<i>Acer spicatum</i>	Mountain Maple	6	3	X	G5	N5	S5				N	C
<i>Actaea rubra</i>	Red Baneberry	6	3		G5	N5	S5				N	C
<i>Ageratina altissima</i>	White Snakeroot	5	3	X	G5	N5	S5				N	C
<i>Aralia nudicaulis</i>	Wild Sarsaparilla	4	3		G5	N5	S5				N	C
<i>Arisaema triphyllum</i>	Jack-in-the-pulpit	5	-3	X	G5	N5	S5				N	C
<i>Asclepias syriaca</i>	Common Milkweed	0	5		G5	N5	S5				N	C
<i>Athyrium filix-femina</i>	Common Lady Fern	4	0		G5	N5	S5				N	C
<i>Betula alleghaniensis</i>	Yellow Birch	6	0	X	G5	N5	S5				N	C
<i>Betula papyrifera</i>	Paper Birch	2	3	X	G5	N5	S5				N	C
<i>Bidens frondosa</i>	Devil's Beggarticks	3	-3	X	G5	N5	S5				N	C
<i>Caltha palustris</i>	Yellow Marsh Marigold	5	-5	X	G5	N5	S5				N	C
<i>Carex arctata</i>	Drooping Woodland Sedge	5	5		G5	N5	S5				N	C
<i>Carex aurea</i>	Golden Sedge	4	-3	X	G5	N5	S5				N	C
<i>Carex bebbii</i>	Bebb's Sedge	3	-5	X	G5	N5	S5				N	C
<i>Carex blanda</i>	Woodland Sedge	3	0		G5	N5	S5				N	R
<i>Carex castanea</i>	Chestnut Sedge	7	-3	X	G5	N5	S5				N	C
<i>Carex flava</i>	Yellow Sedge	5	-5	X	G5	N5	S5				N	C
<i>Carex gracillima</i>	Graceful Sedge	4	3	X	G5	N5	S5				N	C

SCIENTIFIC NAME	COMMON NAME	CC <sup>1</sup>	CW <sup>1</sup>	OWES WETLAND PLANT LIST <sup>2</sup>	G_RANK <sup>3</sup>	N_RANK	S_RANK <sup>4</sup>	COSEWIC <sup>5</sup>	SARA <sup>6</sup>	SARO <sup>7</sup>	NATIVE STATUS <sup>9</sup>	Bruce Peninsula Rare Plants (Johnson 2016) <sup>8</sup>
<i>Carex granularis</i>	Limestone Meadow Sedge	3	-3	X	G5	N5	S5				N	C
<i>Carex hystericina</i>	Porcupine Sedge	5	-5	X	G5	N5	S5				N	C
<i>Carex intumescens</i>	Bladder Sedge	6	-3	X	G5	N5	S5				N	C
<i>Carex lacustris</i>	Lake Sedge	5	-5	X	G5	N5	S5				N	U
<i>Carex lupulina</i>	Hop Sedge	6	-5	X	G5	N5	S5				N	C
<i>Carex pedunculata</i>	Long-stalked Sedge	5	3		G5	N5	S5				N	C
<i>Carex radiata</i>	Eastern Star Sedge	4	0	X	G5	N5	S5				N	U
<i>Carex retrorsa</i>	Retorse Sedge	5	-5	X	G5	N5	S5				N	C
<i>Carex scabrata</i>	Eastern Rough Sedge	8	-5	X	G5	N5	S5				N	U
<i>Carex stipata</i>	Awl-fruited Sedge	3	-5	X	G5	N5	S5				N	C
<i>Circaea alpina</i>	Small Enchanter's Nightshade	6	-3	X	G5	N5	S5				N	C
<i>Circaea canadensis</i>	Broad-leaved Enchanter's Nightshade	2	3		G5	N5	S5				N	C
<i>Clematis virginiana</i>	Virginia Clematis	3	0	X	G5	N5	S5				N	C
<i>Clintonia borealis</i>	Yellow Clintonia	7	0	X	G5	N5	S5				N	C
<i>Cornus alternifolia</i>	Alternate-leaved Dogwood	6	3		G5	N5	S5				N	C
<i>Cornus sericea</i>	Red-osier Dogwood	2	-3	X	G5	N5	S5				N	C
<i>Cystopteris bulbifera</i>	Bulblet Bladder Fern	5	-3	X	G5	N5	S5				N	C
<i>Dryopteris carthusiana</i>	Spinulose Wood Fern	5	-3	X	G5	N5	S5				N	C
<i>Dryopteris marginalis</i>	Marginal Wood Fern	5	3		G5	N5	S5				N	C
<i>Epipactis helleborine</i>	Broad-leaved Helleborine		3		GNR	NNA	SNA				I	
<i>Equisetum palustre</i>	Marsh Horsetail	10	-3	X	G5	N5	S5				N	R
<i>Equisetum pratense</i>	Meadow Horsetail	8	-3		G5	N5	S5				N	R
<i>Equisetum scirpoides</i>	Dwarf Scouring-rush	7	0	X	G5	N5	S5				N	C

SCIENTIFIC NAME	COMMON NAME	CC <sup>1</sup>	CW <sup>1</sup>	OWES WETLAND PLANT LIST <sup>2</sup>	G_RANK <sup>3</sup>	N_RANK	S_RANK <sup>4</sup>	COSEWIC <sup>5</sup>	SARA <sup>6</sup>	SAR0 <sup>7</sup>	NATIVE STATUS <sup>9</sup>	Bruce Peninsula Rare Plants (Johnson 2016) <sup>8</sup>
<i>Equisetum sylvaticum</i>	Woodland Horsetail	7	-3	X	G5	N5	S5				N	U
<i>Erigeron philadelphicus</i>	Philadelphia Fleabane	1	-3	X	G5	N5	S5				N	C
<i>Euonymus obovatus</i>	Running Strawberry-bush	6	5		G5	N4	S4				N	C
<i>Eupatorium perfoliatum</i>	Common Boneset	2	-3	X	G5	N5	S5				N	C
<i>Eurybia macrophylla</i>	Large-leaved Aster	5	5		G5	N5	S5				N	C
<i>Euthamia graminifolia</i>	Grass-leaved Goldenrod	2	0		G5	N5	S5				N	C
<i>Eutrochium maculatum</i>	Spotted Joe Pye Weed	3	-5	X	G5	N5	S5				N	C
<i>Fagus grandifolia</i>	American Beech	6	3		G5	N5	S4				N	C
<i>Fragaria virginiana</i>	Wild Strawberry	2	3		G5	N5	S5				N	C
<i>Frangula alnus</i>	Glossy Buckthorn		0	X	GNR	NNA	SNA				I	
<i>Fraxinus americana</i>	White Ash	4	3		G5	N5	S4				N	C
<i>Fraxinus nigra</i>	Black Ash	7	-3	X	G5	N5	S3	THR			N	C
<i>Fraxinus pennsylvanica</i>	Red Ash	3	-3	X	G5	N5	S4				N	C
<i>Galium palustre</i>	Common Marsh Bedstraw	5	-5	X	G5	N5	S5				N	C
<i>Galium trifidum</i>	Three-petalled Bedstraw	5	-3	X	GNR	N5	S5				N	C
<i>Geranium robertianum</i>	Herb-Robert	2	3		G5	N5	S5				I	C
<i>Glyceria grandis</i>	Tall Mannagrass	5	-5	X	G5	N5	S5				N	R
<i>Glyceria striata</i>	Fowl Mannagrass	3	-5	X	G5	N5	S5				N	C
<i>Ilex verticillata</i>	Common Winterberry	5	-3	X	G5	N5	S5				N	C
<i>Impatiens capensis</i>	Spotted Jewelweed	4	-3	X	G5	N5	S5				N	C
<i>Laportea canadensis</i>	Canada Wood Nettle	6	-3	X	G5	N5	S5				N	X
<i>Leersia oryzoides</i>	Rice Cutgrass	3	-5	X	G5	N5	S5				N	C
<i>Lonicera canadensis</i>	Canada Fly Honeysuckle	6	3		G5	N5	S5				N	C

SCIENTIFIC NAME	COMMON NAME	CC <sup>1</sup>	CW <sup>1</sup>	OWES WETLAND PLANT LIST <sup>2</sup>	G_RANK <sup>3</sup>	N_RANK	S_RANK <sup>4</sup>	COSEWIC <sup>5</sup>	SARA <sup>6</sup>	SAR0 <sup>7</sup>	NATIVE STATUS <sup>9</sup>	Bruce Peninsula Rare Plants (Johnson 2016) <sup>8</sup>
<i>Lonicera dioica</i>	Limber Honeysuckle	5	3		G5	N5	S5				N	X
<i>Lycopus americanus</i>	American Water-horehound	4	-5	X	G5	N5	S5				N	C
<i>Lycopus uniflorus</i>	Northern Water-horehound	5	-5	X	G5	N5	S5				N	C
<i>Lysimachia borealis</i>	Northern Starflower	6	0		G5	N5	S5				N	C
<i>Maianthemum canadense</i>	Wild Lily-of-the-valley	5	3		G5	N5	S5				N	C
<i>Maianthemum racemosum</i>	Large False Solomon's Seal	4	3		G5	N5	S5				N	C
<i>Medeola virginiana</i>	Indian Cucumber-root	8	3		G5	N5	S5				N	U
<i>Mentha x piperita</i>	Peppermint		-5	X	GNA	NNA	SNA				N	C
<i>Mentha x villosa</i>	Woolly Mint		0	X	GNA	NNA	SNA				I	
<i>Mitchella repens</i>	Partridgeberry	6	3		G5	N5	S5				N	C
<i>Nasturtium officinale</i>	Watercress		-5		GNR	NNA	SNA				I	
<i>Onoclea sensibilis</i>	Sensitive Fern	4	-3	X	G5	N5	S5				N	C
<i>Osmunda regalis</i>	Royal Fern	7	-5	X	G5	N5	S5				N	C
<i>Ostrya virginiana</i>	Eastern Hop-hornbeam	4	3		G5	N5	S5				N	C
<i>Oxalis stricta</i>	Upright Yellow Wood-sorrel		3		G5	N5	S5				I	
<i>Phalaris arundinacea</i> var. <i>arundinacea</i>	Reed Canarygrass	0	-3	X	G5TNR	NNR	S5				I	
<i>Phragmites australis</i> ssp. <i>australis</i>	European Reed		-3	X	G5T5	NNA	SNA				I	
<i>Pilea fontana</i>	Lesser Clearweed	5	-3	X	G5	N4N5	S4				N	R
<i>Populus grandidentata</i>	Large-toothed Aspen	5	5		G5	N5	S5				N	C
<i>Prunella vulgaris</i>	Common Self-heal		0		G5	N5	S5				N	C
<i>Prunus serotina</i>	Black Cherry	3	3		G5	N5	S5				N	C
<i>Pyrola chlorantha</i>	Green-flowered Pyrola	6	3		G5	N5	S4S5				N	C

SCIENTIFIC NAME	COMMON NAME	CC <sup>1</sup>	CW <sup>1</sup>	OWES WETLAND PLANT LIST <sup>2</sup>	G_RANK <sup>3</sup>	N_RANK	S_RANK <sup>4</sup>	COSEWIC <sup>5</sup>	SARA <sup>6</sup>	SAR0 <sup>7</sup>	NATIVE STATUS <sup>9</sup>	Bruce Peninsula Rare Plants (Johnson 2016) <sup>8</sup>
<i>Ranunculus abortivus</i>	Kidney-leaved Buttercup	2	0		G5	N5	S5				N	C
<i>Ranunculus acris</i>	Common Buttercup		0	X	G5	NNA	SNA				I	X
<i>Rhamnus cathartica</i>	European Buckthorn		0	X	GNR	NNA	SNA				I	
<i>Ribes americanum</i>	American Black Currant	4	-3	X	G5	N5	S5				N	C
<i>Rubus idaeus</i>	Red Raspberry	2	3		G5	N5	S5				N	C
<i>Rubus pubescens</i>	Dwarf Raspberry	4	-3	X	G5	N5	S5				N	C
<i>Rumex crispus</i>	Curled Dock		0	X	GNR	NNA	SNA				I	
<i>Salix discolor</i>	Pussy Willow	3	-3	X	G5	N5	S5				N	C
<i>Sambucus canadensis</i>	Common Elderberry	5	-3	X	G5	N5	S5				N	U
<i>Sceptridium dissectum</i>	Cut-leaved Grapefern	6	0		G5	N5	S4S5				N	R
<i>Scirpus atrocinctus</i>	Black-girdled Bulrush	5	-5	X	G5	N5	S5				N	C
<i>Scirpus cyperinus</i>	Common Woolly Bulrush	4	-5	X	G5	N5	S5				N	X
<i>Silene vulgaris</i>	Bladder Campion		5		GNR	NNA	SNA				I	
<i>Solanum dulcamara</i>	Bittersweet Nightshade		0	X	GNR	NNA	SNA				I	
<i>Solidago altissima</i>	Tall Goldenrod	1	3		G5	N5	S5				N	C
<i>Solidago canadensis</i> var. <i>canadensis</i>	Canada Goldenrod	1	3		G5T5	N5	S5				N	C
<i>Solidago gigantea</i>	Giant Goldenrod	4	-3	X	G5	N5	S5				N	U
<i>Solidago rugosa</i>	Rough-stemmed Goldenrod	4	0		G5	N5	S5				N	U
<i>Sorbus aucuparia</i>	European Mountain-ash		5		G5	NNA	SNA				I	
<i>Spiraea alba</i>	White Meadowsweet	3	-3	X	G5	N5	S5				N	C
<i>Symphotrichum cordifolium</i>	Heart-leaved Aster	5	5		G5	N5	S5				N	C
<i>Symphotrichum lanceolatum</i>	Panicled Aster	3	-3	X	G5	N5	S5				N	C
<i>Symphotrichum lateriflorum</i>	Calico Aster	3	0		G5	N5	S5				N	C

SCIENTIFIC NAME	COMMON NAME	CC <sup>1</sup>	CW <sup>1</sup>	OWES WETLAND PLANT LIST <sup>2</sup>	G_RANK <sup>3</sup>	N_RANK	S_RANK <sup>4</sup>	COSEWIC <sup>5</sup>	SARA <sup>6</sup>	SARO <sup>7</sup>	NATIVE STATUS <sup>9</sup>	Bruce Peninsula Rare Plants (Johnson 2016) <sup>8</sup>
<i>Symphotrichum puniceum</i>	Purple-stemmed Aster	6	-5	X	G5	NNR	S5				N	C
<i>Taraxacum officinale</i>	Common Dandelion		3		G5	N5	SNA				I	
<i>Taxus canadensis</i>	Canada Yew	7	3		G5	N5	S4				N	C
<i>Thuja occidentalis</i>	Eastern White Cedar	4	-3	X	G5	N5	S5				N	C
<i>Tiarella cordifolia</i>	Heart-leaved Foamflower	6	3	X	G5	N5	S5				N	C
<i>Toxicodendron radicans</i> var. <i>rydbergii</i>	Western Poison Ivy	2	0		G--T5	N5	S5				N	C
<i>Trillium grandiflorum</i>	White Trillium	5	3		G5	N5	S5				N	C
<i>Tsuga canadensis</i>	Eastern Hemlock	7	3	X	G5	N5	S5				N	C
<i>Tussilago farfara</i>	Coltsfoot		3	X	GNR	NNA	SNA				I	
<i>Typha latifolia</i>	Broad-leaved Cattail	1	-5	X	G5	N5	S5				N	C
<i>Urtica dioica</i>	Stinging Nettle	2	0		G5	N5	S5				N	U
<i>Veronica americana</i>	American Speedwell	6	-5	X	G5	N5	S5				N	C
<i>Veronica officinalis</i>	Common Speedwell		5		G5	NNA	SNA				I	
<i>Viburnum opulus</i> ssp. <i>trilobum</i>	Highbush Cranberry	5	-3	X	G5TNR	NNR	S5				N	C
<i>Viola</i> sp.	Violet sp.										N	
<i>Vitis riparia</i>	Riverbank Grape	0	0		G5	N5	S5				N	C

## PLANT LIST LEGEND

### **Scientific Name, Common Name, and Family**

*Based on Vascan and NHIC (February 28, 2020)*

Vascan: <http://data.canadensys.net/vascan/search>

NHIC: [https://www.sdc.gov.on.ca/sites/MNRF-PublicDocs/EN/ProvincialServices/ONTARIO\\_SPECIES\\_LISTS.zip](https://www.sdc.gov.on.ca/sites/MNRF-PublicDocs/EN/ProvincialServices/ONTARIO_SPECIES_LISTS.zip)

### **<sup>1</sup> Coefficient of Conservatism, Coefficient of Wetness, Weediness, and Physiology/Habit**

*Oldham, M. J., W. D. Bakowsky and D. A. Sutherland. 1995. Floristic Quality Assessment System for Southern Ontario. Natural Heritage Information Centre, Ministry of Natural Resources. Peterborough, Ontario.*

CC and CW values reflect updates by NHIC, current as of *February 28, 2020*).

CC: Coefficient of Conservatism. Rank of 0 to 10 based on plants degree of fidelity to a range of synecological parameters: (0-3) Taxa found in a variety of plant communities; (4-6) Taxa typically associated with a specific plant community but tolerate moderate disturbance; (7-8) Taxa associated with a plant community in an advanced successional stage that has undergone minor disturbance; (9-10) Taxa with a high fidelity to a narrow range of synecological parameters.

CW: Coefficient of Wetness. Value between 5 and -5. A value of -5 is assigned to Obligate Wetland (OBL) and 5 to Obligate Upland (UPL), with intermediate values assigned to the remaining categories.

### **<sup>2</sup> OWES Wetland Plant List**

*Ontario Ministry of Natural Resources. 2013. Ontario Wetland Evaluation System Southern Manual. 3rd Edition, Version 3.3; Ontario Ministry of Natural Resources. 2013. Ontario Wetland Evaluation System Northern Manual. 1st Edition, Version 1.3*

Species presence or absence from the Ontario Wetland Evaluation System (OWES) Wetland Plant List.

Codes are defined as follows:

X: Present on the list

### **<sup>3</sup> G-Rank (Global)**

*Global Status from Nature Serve (via NHIC, February 28, 2020)*

Nature Serve: <http://explorer.natureserve.org/>

NHIC: [http://www.sse.gov.on.ca/sites/MNR-PublicDocs/EN/ProvincialServices/Ontario\\_Vascular\\_Plants.xlsx](http://www.sse.gov.on.ca/sites/MNR-PublicDocs/EN/ProvincialServices/Ontario_Vascular_Plants.xlsx)

Global ranks are assigned by a consensus of the network of Conservation Data Centres (CDCs), scientific experts, and the Nature Conservancy to designate a rarity rank based on the range-wide status of a species, subspecies, or variety.

#### *Global (G) Conservation Status Ranks*

G1: Critically Imperiled - At very high risk of extinction or elimination due to very restricted range, very few populations or occurrences, very steep declines, very severe threats, or other factors.

G2: Imperiled - at high risk of extinction or elimination due to restricted range, few populations or occurrences, steep declines, severe threats, or other factors.

G3: Vulnerable - At moderate risk of extinction or elimination due to a fairly restricted range, relatively few populations or occurrences, recent and widespread declines, threats, or other factors.

- G4: Apparently Secure - At fairly low risk of extinction or elimination due to an extensive range and/or many populations or occurrences, but with possible cause for some concern as a result of local recent declines, threats, or other factors.
- G5: Secure - At very low risk of extinction or elimination due to a very extensive range, abundant populations or occurrences, and little to no concern from declines or threats.
- G#G#: Range Rank – A numeric range rank (e.g., G2G3, G1G3) is used to indicate the range of uncertainty about the exact status of a taxon or ecosystem type. Ranges cannot skip more than two ranks (e.g., GU should be used rather than G1G4).
- GX: Presumed Extinct - Not located despite intensive searches and virtually no likelihood of rediscovery.
- GH: Possibly Extinct - Known from only historical occurrences but still some hope of rediscovery. Examples of evidence include (1) that a species has not been documented in approximately 20-40 years despite some searching and/or some evidence of significant habitat loss or degradation; (2) that a species has been searched for unsuccessfully, but not thoroughly enough to presume that it is extinct or eliminated throughout its range.
- GU: Unrankable – Currently unrankable due to lack of information or due to substantially conflicting information about status or trends.
- GNR: Unranked – Global rank not yet assessed
- GNA: Not Applicable – A conservation status rank is not applicable because the species is not a suitable target for conservation activities. A global conservation status rank may be not applicable for several reasons, related to its relevance as a conservation target. For species, typically the species is a hybrid without conservation value, or of domestic origin. For ecosystems, the type is typically non-native (e.g. many ruderal vegetation types), agricultural (e.g. pasture, orchard) or developed (e.g. lawn, garden, golf course).
- ?: Inexact Numeric Rank – Denotes inexact numeric rank; this should not be used with any of the Variant Global Conservation Status Ranks or GX or GH.
- T#: Intraspecific Taxon (trinomial) - The status of intraspecific taxa (subspecies or varieties) are indicated by a "T-rank" following the species' global rank. Rules for assigning T-ranks follow the same principles outlined above. For example, the global rank of a critically imperiled subspecies of an otherwise widespread and common species would be G5T1. A T subrank cannot imply the subspecies or variety is more abundant than the species, for example, a G1T2 subrank should not occur. A vertebrate animal population (e.g., listed under the U.S. Endangered Species Act or assigned candidate status) may be tracked as an intraspecific taxon and given a T rank; in such cases a Q is used after the T-rank to denote the taxon's informal taxonomic status.
- Q: Questionable taxonomy that may reduce conservation priority – Distinctiveness of this entity as a taxon or ecosystem type at the current level is questionable; resolution of this uncertainty may result in change from a species to a subspecies or hybrid, or inclusion of this taxon or type in another taxon or type, with the resulting taxon having a lower priority (numerically higher) conservation status rank. The “Q” modifier is only used at a global level and not at a national or subnational level.
- C: Captive or Cultivated Only – Taxon or ecosystem at present is presumed or possibly extinct or eliminated in the wild across their entire native range but is extant in cultivation, in captivity, as a naturalized population (or populations) outside their native range, or as a reintroduced population or ecosystem restoration, not yet established. The “C” modifier is only used at a global level and not at a national or subnational level. Possible ranks are GXC or GHC. This is equivalent to “Extinct” in the Wild (EW) in IUCN’s Red List terminology (IUCN 2001).

#### **<sup>4</sup> S-Ranks (Provincial)**

*Provincial Status from the NHIC (February 28, 2020)*

NHIC: [http://www.sse.gov.on.ca/sites/MNR-PublicDocs/EN/ProvincialServices/Ontario\\_Vascular\\_Plants.xlsx](http://www.sse.gov.on.ca/sites/MNR-PublicDocs/EN/ProvincialServices/Ontario_Vascular_Plants.xlsx)

Provincial (or Subnational) ranks are used by the Natural Heritage Information Centre (NHIC) to set protection priorities for rare species and natural communities. These ranks are not legal designations. Provincial ranks are assigned in a manner similar to that described for global ranks, but consider only those factors within the political boundaries of Ontario.

#### *Provincial/Sub-national (S) Conservation Status Ranks*

- S1: Critically Imperiled – At very high risk of extirpation in the jurisdiction due to very restricted range, very few populations or occurrences, very steep declines, severe threats, or other factors.
- S2: Imperiled – At high risk of extirpation in the jurisdiction due to restricted range, few populations or occurrences, steep declines, severe threats, or other factors.
- S3: Vulnerable – At moderate risk of extirpation in the jurisdiction due to a fairly restricted range, relatively few populations or occurrences, recent and widespread declines, threats, or other factors.
- S4: Apparently Secure – At a fairly low risk of extirpation in the jurisdiction due to an extensive range and/or many populations or occurrences, but with possible cause for some concern as a result of local recent declines, threats, or Secure – At very low or no risk of extirpation in the jurisdiction due to a very extensive range, abundant populations or occurrences, with little to no concern from declines or threats.
- S#S#: Range Rank – A numeric range rank (e.g., S2S3) is used to indicate any range of uncertainty about the status of the species or community. Ranges cannot skip more than one rank (e.g., SU is used rather than S1S4).
- SX: Presumed Extirpated – Species or ecosystem is believed to be extirpated from the jurisdiction (province). Not located despite intensive searches of historical sites and other appropriate habitat, and virtually no likelihood that it will be rediscovered. [equivalent to “Regionally Extinct” in IUCN Red List terminology]
- SH: Possibly Extirpated (Historical) – Known from only historical records but still some hope of rediscovery. There is evidence that the species or ecosystem may no longer be present in the jurisdiction, but not enough to state this with certainty. Examples of such evidence include (1) that a species has not been documented in approximately 20-40 years despite some searching and/or some evidence of significant habitat loss or degradation; (2) that a species or ecosystem has been searched for unsuccessfully, but not thoroughly enough to presume that it is no longer present in the jurisdiction.
- SNR: Unranked – Nation of state/province conservation status not yet assessed.
- SU: Unrankable – Currently unrankable due to lack of information or due to substantially conflicting information about status or trends.
- SNA: Not Applicable – A conservation status rank is not applicable because the species is not a suitable target for conservation activities (e.g., long distance aerial and aquatic migrants, hybrids without conservation value, and non-native species).
- ?: Inexact or Uncertain - Denotes inexact or uncertain numeric rank.
- T#: Intraspecific Taxon (trinomial) - The status of intraspecific taxa (subspecies or varieties) are indicated by a "T-rank" following the species' global rank. Rules for assigning T-ranks follow the same principles outlined above. For example, the subnational rank of a critically imperiled subspecies of an otherwise widespread and common species would be S5T1. A T subrank cannot imply the subspecies or variety is more abundant than the species, for example, a S1T2 subrank should not occur. A vertebrate animal population may be tracked as an intraspecific taxon and given a T rank; in such cases a Q is used after the T-rank to denote the taxon's informal taxonomic status.

## **<sup>5</sup> COSEWIC (Committee on the Status of Endangered Wildlife in Canada)**

*The federal review process is implemented by COSEWIC (Status as of February 28, 2020)*

The Committee on the Status of Endangered Wildlife in Canada (COSEWIC) is an independent advisory panel to the Minister of Environment and Climate Change Canada that meets twice a year to assess the status of wildlife species at risk of extinction.

<https://www.canada.ca/en/environment-climate-change/services/committee-status-endangered-wildlife.html>

### *COSEWIC Conservation Status Ranks*

EXT: Extinct – A species that no longer exists.

EXP: Extirpated – A species no longer existing in the wild in Canada, but occurring elsewhere.

END: Endangered – A species facing imminent extirpation or extinction.

THR: Threatened – A species likely to become endangered if limiting factors are not reversed.

SC: Special Concern (formerly vulnerable) – A species that may become a threatened or an endangered species because of a combination of biological characteristics and identified threats.

NAR: Not At Risk – A species that has been evaluated and found to be not at risk of extinction given the current circumstances.

DD: Data Deficient – Available information is insufficient (a) to resolve a species' eligibility for assessment or (b) to permit an assessment of the species' risk of extinction.

## **<sup>6</sup> SARA (Species at Risk Act) Status and Schedule**

*Federal status from the Government of Canada's Species at Risk Public Registry (Status as of February 28, 2020)*

<http://www.registrelep-sararegistry.gc.ca/>

The Act establishes Schedule 1, as the official list of species at risk in Canada. It classifies those species as being either Extirpated, Endangered, Threatened, or a Special Concern. Once listed, the measures to protect and recover a listed species are implemented. However, please note that while Schedule 1 lists species that are extirpated, endangered, threatened and of special concern, the prohibitions do not apply to species of special concern.

### *SARA Conservation Status Ranks*

EXT: Extinct – A species that no longer exists.

EXP: Extirpated – A species that no longer exists in the wild in Canada, but exists elsewhere in the wild.

END: Endangered – A species that is facing imminent extirpation or extinction.

THR: Threatened – A species likely to become endangered if limiting factors are not reversed.

SC: Special Concern – A species that may become a threatened or an endangered species because of a combination of biological characteristics and identified threats.

## **<sup>7</sup> SARO (Species at Risk in Ontario)**

*Provincial status from MNR (Status as of February 28, 2020)*

<https://www.ontario.ca/environment-and-energy/species-risk-ontario-list>

The provincial review process is implemented by the MNR's Committee on the Status of Species at Risk in Ontario (COSSARO). COSSARO is an independent advisory panel to the Ontario Ministry of Natural Resources and Forestry that assesses the status of species at risk of extinction.

*MNRF Conservation Status Ranks*

- EXP: Extirpated – Extirpated – Lives somewhere in the world, and at one time lived in the wild in Ontario, but no longer lives in the wild in Ontario.
- END: Endangered – Lives in the wild in Ontario but is facing imminent extinction or extirpation.
- THR: Threatened – Lives in the wild in Ontario, is not endangered, but is likely to become endangered if steps are not taken to address factors threatening it.
- SC: Special Concern – Lives in the wild in Ontario, is not endangered or threatened, but may become threatened or endangered due to a combination of biological characteristics and identified threats.

**<sup>8</sup> Regional Status: Bruce Peninsula**

*Johnson, J. 2016. The Vascular Plants of the Bruce Peninsula. Keeling Printers Ltd, Owen Sound, Ontario.*

Eleven degrees of occurrence are documents recognized, however the following three are the only ones that were identified during field investigations;

- C: Common – Abundant on the Bruce Peninsula
- U: Uncommon – 16 to approximately 30 documented locations
- R: Rare – 6-12 documented locations

**<sup>9</sup> Native Status**

*Based on Vascan and NHIC (February 28, 2020)*

Vascan: <http://data.canadensys.net/vascan/search>

NHIC: [https://www.sdc.gov.on.ca/sites/MNRF-PublicDocs/EN/ProvincialServices/ONTARIO\\_SPECIES\\_LISTS.zip](https://www.sdc.gov.on.ca/sites/MNRF-PublicDocs/EN/ProvincialServices/ONTARIO_SPECIES_LISTS.zip)

Codes are defined as follows:

- N: Native
- I: Introduced

**Appendix F2 – Breeding Bird Table**

Common Name	Scientific Name	Grank <sup>1</sup>	Srank <sup>2</sup>	SARO (ESA) Status <sup>3</sup>	COSEWIC Status <sup>4</sup>	SARA Status <sup>5</sup>	SARA Schedule <sup>5</sup>	MNR Area Sensitive <sup>6</sup>	Visit 1 (June 22)		Visit 2 (July 7)		Visit 3 (Sept 23)		Highest Count	Highest Breeding Evidence
									Count	Breeding Evidence <sup>7</sup>	Count	Breeding Evidence	Count	Breeding Evidence		
American Crow	<i>Corvus brachyrhynchos</i>	G5	S5B						2	S/H	2	H	2	X	2	POSS
American Goldfinch	<i>Spinus tristis</i>	G5	S5B								1	S/H			1	POSS
American Redstart	<i>Setophaga ruticilla</i>	G5	S5B					X	1	S/H					1	POSS
American Robin	<i>Turdus migratorius</i>	G5	S5B						3	S/H	4	FY			4	CONF
Black-capped Chickadee	<i>Poecile atricapillus</i>	G5	S5						1	S/H	3	T	5	X	5	PROB
Brown-headed Cowbird	<i>Molothrus ater</i>	G5	S4B						1	S/H					1	POSS
Blue-headed Vireo	<i>Vireo solitarius</i>	G5	S5B					X			3	S/H			3	POSS
Blue Jay	<i>Cyanocitta cristata</i>	G5	S5						1	S/H	1	T	4	X	4	PROB
Black-throated Blue Warbler	<i>Setophaga caerulescens</i>	G5	S5B					X	1	S/H					1	POSS
Black-throated Green Warbler	<i>Setophaga virens</i>	G5	S5B					X	3	S/H	2	T			3	PROB
Cedar Waxwing	<i>Bombycilla cedrorum</i>	G5	S5B						1	S/H	2	T			2	PROB
Common Grackle	<i>Quiscalus quiscula</i>	G5	S5B						1	S/H	1	T			1	PROB
Common Raven	<i>Corvus corax</i>	G5	S5								1	H			1	POSS
Common Yellowthroat	<i>Geothlypis trichas</i>	G5	S5B						1	S/H					1	POSS
Dark-eyed Junco	<i>Junco hyemalis</i>	G5	S5B										3	X	3	NONE
Downy Woodpecker	<i>Picoides pubescens</i>	G5	S5						1	S/H			2	X	2	POSS
Eastern Wood-pewee	<i>Contopus virens</i>	G5	S4B	SC	SC	SC	1		4	S/H	3	T			4	PROB
Great Crested Flycatcher	<i>Myiarchus crinitus</i>	G5	S4B						1	S/H	1	T			1	PROB
Hairy Woodpecker	<i>Picoides villosus</i>	G5	S5					X	1	S/H	1	T			1	PROB
Hermit Thrush	<i>Catharus guttatus</i>	G5	S5B					X					3	X	3	NONE
House Wren	<i>Troglodytes aedon</i>	G5	S5B								1	S/H	1	X	1	POSS
Indigo Bunting	<i>Passerina cyanea</i>	G5	S4B								1	S/H			1	POSS
Northern Flicker	<i>Colaptes auratus</i>	G5	S4B						1	S/H	1	T	2	X	2	PROB
Ovenbird	<i>Seiurus aurocapilla</i>	G5	S4B					X	5	S/H	2	T			5	PROB
Pileated Woodpecker	<i>Dryocopus pileatus</i>	G5	S5					X			1	S/H	1	X	1	POSS
Ring-billed Gull	<i>Larus delawarensis</i>	G5	S5B, SZN						2	X	3	X			3	NONE
Red-breasted Nuthatch	<i>Sitta canadensis</i>	G5	S5					X	1	S/H			1	X	1	POSS
Red-bellied Woodpecker	<i>Melanerpes carolinus</i>	G5	S4						1	S/H					1	POSS
Red-eyed Vireo	<i>Vireo olivaceus</i>	G5	S5B						6	S/H	5	T			6	PROB
Ruby-throated Hummingbird	<i>Archilochus colubris</i>	G5	S5B						1	H					1	POSS
Song Sparrow	<i>Melospiza melodia</i>	G5	S5B						1	S/H	1	T			1	PROB
Turkey Vulture	<i>Cathartes aura</i>	G5	S5B						1	H	1	T			1	PROB
White-breasted Nuthatch	<i>Sitta carolinensis</i>	G5	S5					X	1	S/H			3	X	3	POSS

Common Name	Scientific Name	Grank <sup>1</sup>	Srank <sup>2</sup>	SARO (ESA) Status <sup>3</sup>	COSEWIC Status <sup>4</sup>	SARA Status <sup>5</sup>	SARA Schedule <sup>5</sup>	MNR Area Sensitive <sup>6</sup>	Visit 1 (June 22)		Visit 2 (July 7)		Visit 3 (Sept 23)		Highest Count	Highest Breeding Evidence
									Count	Breeding Evidence <sup>7</sup>	Count	Breeding Evidence	Count	Breeding Evidence		
White-crowned Sparrow	<i>Zonotrichia leucophrys</i>	G5	S4B										3	X	3	NONE
Wild Turkey	<i>Meleagris gallopavo</i>	G5	S5								1	FY			1	CONF
Winter Wren	<i>Troglodytes hiemalis</i>	G5	S5B					X	2	S/H	2	T			2	PROB
White-throated Sparrow	<i>Zonotrichia albicollis</i>	G5	S5B										5	X	5	NONE
Yellow-bellied Sapsucker	<i>Sphyrapicus varius</i>	G5	S5B					X	1	S/H					1	POSS

## **Legend**

**<sup>1</sup>G-Rank (global):** Global ranks are assigned by a consensus of the network of Conservation Data Centres (CDCs), scientific experts, and the Nature Conservancy to designate a rarity rank based on the range-wide status of a species, subspecies, or variety.

G4 Common - usually more than 100 occurrences; usually not susceptible to immediate threats.

G5 Very common - demonstrably secure under present conditions.

**<sup>2</sup>S-Rank (provincial):** Provincial ranks are used by the NHIC to set protection priorities for rare species and natural communities. Provincial ranks are assigned similarly to global ranks, but consider only those factors within the political boundaries of Ontario.

S3 Vulnerable - Vulnerable in the nation or state/province due to a restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, or other factors making it vulnerable to extirpation.

S4 Apparently Secure - Uncommon but not rare; some cause for long-term concern due to declines or other factors.

S5 Secure - Common, widespread, and abundant in the nation or state/province.

SZN Non-breeding migrants/vagrants.

SZB Breeding migrants/vagrants.

### **<sup>3</sup>SARO (Species at Risk in Ontario) Status:**

EXP Extirpated - A species that lives somewhere in the world, lived at one time in the wild in Ontario, but no longer lives in the wild in Ontario.

END Endangered - A species that is facing imminent Extinction or extirpation.

THR Threatened - A species that is likely to become Endangered if steps are not taken to address factors threatening to lead to its Extinction or extirpation.

SC Special Concern – A species that may become Threatened or Endangered because of a combination of biological characteristics and identified threats.

### **<sup>4</sup>COSEWIC (Committee on the Status of Endangered Wildlife in Canada):**

EXT Extinct - A species that no longer exists.

EXP Extirpated - A species no longer existing in the wild in Canada, but occurring elsewhere.

END Endangered - A species facing imminent extirpation or Extinction.

THR Threatened - A species likely to become Endangered if limiting factors are not reversed.

SC Special Concern (formerly vulnerable) - A species that may become a Threatened or an Endangered species because of a combination of biological characteristics and identified threats.

NAR Not At Risk - A species that has been evaluated and found to be not at risk of Extinction given the current circumstances.

### **<sup>5</sup>SARA (Species at Risk Act) Status:**

EXT Extinct - A wildlife species that no longer exists.

EXP Extirpated - A wildlife species that no longer exists in the wild in Canada, but exists elsewhere in the wild.

END Endangered - A wildlife species that is facing imminent extirpation or Extinction.

THR Threatened - A wildlife species that is likely to become Endangered if nothing is done to reverse the factors leading to its extirpation or Extinction.

SC Special Concern - A wildlife species that may become a Threatened or an Endangered species because of a combination of biological characteristics and identified threats.

## **<sup>6</sup> MNR Area Sensitive Species**

Area Sensitivity is defined as species requiring large areas of suitable habitat in order to sustain population numbers

## **<sup>7</sup> Ontario Breeding Bird Atlas - Breeding Evidence Codes:**

### **OBSERVED**

X Species observed in its breeding season (no breeding evidence).

### **POSSIBLE**

H Species observed in its breeding season in suitable nesting habitat.

S Singing male(s) present, or breeding calls heard, in suitable nesting habitat in breeding season.

### **PROBABLE**

P Pair observed in suitable nesting habitat in nesting season.

T Permanent territory presumed through registration of territorial behaviour (song, etc.) on at least two days, a week or more apart, at the same place.

D Courtship or display, including interaction between a male and a female or two males, including courtship feeding or copulation.

V Visiting probable nest site

A Agitated behaviour or anxiety calls of an adult.

N Nest-building or excavation of nest hole.

### **CONFIRMED**

DD Distraction display or injury feigning.

FY Recently fledged young (nidicolous species) or downy young (nidifugous species), including incapable of sustained flight.

AE Adult leaving or entering nest sites in circumstances indicating occupied nest.

FS Adult carrying fecal sac.

CF Adult carrying food for young.

NY Nest with young seen or heard.

# APPENDIX

**E**

REPRESENTATIVE  
PHOTOGRAPHS





Photo 1: View of Unit 2a (SWM4-1), looking north. Note large patch of Common Reed dominating the marsh habitat surrounding the stream. June 22, 2020.



Photo 2: View of Unit 3 (SWC2-2), looking northwest, with cold-water stream. June 22, 2020.



Photo 3: View of Unit 3 (SWC2-2), looking northeast, with cold-water stream. June 22, 2020.



Photo 4: View of the recreational trail and Unit 4 (SWM5-1) to the left, and Unit 1 (FOM3-2) to the right in the background. Photo looking east. June 22, 2020.



Photo 5: View of Unit 5 (FOD5-1), looking north. Note sparse understory vegetation. June 22, 2020.



Photo 6: View of Unit 1 (FOM3-2), looking west, with recreational trail. Note understory dominated by Canada Yew. September 23, 2020.



Photo 7: View of Unit 1 (FOM3-2), showing an example of one of the larger wet depressions dominated by Sphagnum. September 23, 2020.



Photo 8: View of Unit 1 (FOM3-2), looking south, showing example of upland area. Note understory dominated by Canada Yew. September 23, 2020.



Miramichi Shores Subdivision—Phase 4—Environmental Impact Study  
 REPRESENTATIVE PHOTOGRAPHS

Date: February 2021

Project No: 201-06434-00

Appendix E



Photo 9: View of Unit 4 (SWM5-1) looking northeast. Note dead Ash in the foreground, and wetland vegetation in the ground layer, and more dense canopy in the adjacent upland areas. September 23, 2020.



Photo 10: View of Unit 2b (SWM4-1), looking east, in approximate location of groundwater upwellings noted by AWS. September 23, 2020.



Photo 11: Soil Sample, Unit 1, Sample 1. July 7, 2020.



Photo 12: Soil Sample, edge of Unit 3 (MAS3-1) and 1, Sample 1. July 7, 2020.



Photo 13: Soil Sample, Unit 3, Sample 2. July 7, 2020.



Photo 14: Soil Sample, Unit 3, Sample 3. July 7, 2020.



Photo 15: Soil Sample, Unit 4 (SWM5-1), Sample 1. July 7, 2020.



Photo 16: Soil Sample, Unit 4 (SWM5-1), Sample 2. July 7, 2020.



Miramichi Shores Subdivision—Phase 4—Environmental Impact Study  
REPRESENTATIVE PHOTOGRAPHS

Date: February 2021

Project No: 201-06434-00

Appendix E



Photo 17: Soil Sample, Unit 4, Sample 3. September 23, 2020.



Photo 18: Soil Sample, Unit 4, Sample 4. September 23, 2020.



Photo 19: Soil Sample, Unit 4, Sample 5. September 23, 2020.



Photo 20: Soil Sample, Unit 4, Sample 6. September 23, 2020.



Photo 21: Soil Sample, Unit 4, Sample 7. September 23, 2020.



Photo 22: Soil Sample, Unit 4, Sample 8. September 23, 2020.



Photo 23: Example of the abundant invasive Glossy Buckthorn present in the wetland units and wet depression, but particularly frequent in Unit 3.



Miramichi Shores Subdivision—Phase 4—Environmental Impact Study  
REPRESENTATIVE PHOTOGRAPHS

Date: February 2021

Project No: 201-06434-00

Appendix E

# APPENDIX

# F

ELC AND SOIL  
SAMPLE FIELD  
NOTES









ELC Summary Sheet

Project Name: Mary Rose EIS Project No: 201-06434-00 Page 5 of 9



UNIT #: (3) Observers: SG Date: June 22, 2020 Weather / Limitations: \_\_\_\_\_

SYSTEM: Terrestrial Aquatic Wetland	COMMUNITY CLASS: Beach-Bar, Sand Dune, Bluff, Cliff, Talus, Alvar, Rock Barren, Cave, Sand Barren, Prairie-Savannah-Woodland, Forest, Cultural, Swamp, Fen, Bog, Marsh, Open Water, Shallow Water	SERIES: <u>SWC</u>	ECOSITE: <u>2</u>	VEG. TYPE: <u>2</u>
--	---	-----------------------	----------------------	------------------------

<b>STAND DESCRIPTION:</b>	<b>SOIL ANALYSIS:</b>	Community Inclusion:
COMMUNITY AGE: 1=Pioneer 2=Young 3=Mid-Aged 4=Mature 5=Old Growth	DRAINAGE: 1=very well 2=well 3=moderate 4=imperfect 5=poor 6=very poor	
STANDING SNAGS: R=Rare O=Occasional A=Abundant D=Dominant	SOIL MOISTURE: 1=wet 2=wet-mesic 3=mesic 4=dry-mesic 5=dry	
DEADFALL LOGS: R=Rare O=Occasional A=Abundant D=Dominant	TEXTURE: silt sand clay loam	
BOTANICAL QUALITY: 1=low 2=medium 3=high	PARENT MATERIAL: mineral organic	Complex/Mosaic:
SLOPE: <u>(none)</u> gentle moderate steep (simple or complex)	SUBSTRATE DEPTH: <u>&lt; 15cm</u> < 15cm	

TOPOGRAPHY: lacustrine, riverine, tableland, rolling upland, cliff, talus slope, crevice/cave, alvar, rockland, valley slope, terrace, bottomland, sand dune, bluff, beach/bar  
 Height code: 1=>25m, 2=10m-25m, 3=2m-10m, 4=1m-2m, 5=0.5m-1m, 6=0.2m-0.5m, 7=< 0.5m Cover codes: 0=none, 1=0%-10%, 2=10%-25%, 3=25%-60%, 4=>60%

VEGETATION LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE
1 Canopy	1-2	60%	Tsugcan > betnall > thujoec
2 Sub-Canopy	3	75%	Thujoec > Tsugcan > Frax spp = acer spp
3 Understorey	4	10%	Thujoec >> Franaln
4 Ground Layer	5-6	50%	carcX spp = drup spp = impacap > circalp

SIZE CLASS ANALYSIS (abundance code): S=Scarce, O=Occasional, F=Frequent, A=Abundant, D=Dominant	< 10 cm DBH: F	10 - 24 cm DBH: A	25 to 50 cm DBH: F	> 50 cm DBH: R
---	----------------	-------------------	--------------------	----------------

SPECIES	LAYER / ABUNDANCE				SPECIES	LAYER / ABUNDANCE			
	1	2	3	4		1	2	3	4
Betnall	O				Aristri				O
Ostrya		R			Saladul				F
acer spp - edge & unit	R				dryocor				F
Thujoec	R	F	F		oxalstr				R
Fraxpen	R	O			taxoff				R
Surb ame				R	carcarc				R
Acer spi		O	O		circalp				F
acer nib	F	O	O		torcor				R
Tsugcan					leeroy				O
					Equi pra				O
					Acerarb				O
					ranu sp				F
					Impacap				R
					car ros				R
					pinuul				F
					anoc sen				O
					carcast				R
					carc shp				R
					carc grac				R
					mentvil				R
					lycoame				R
					galitrif				R
					carc sp phdes				R
					carc so phdes				R
Carnerc			R		fragvir				R
Franaln		R	R		glyc stri				R
Rhamnat			R		Athyfil				O

EVIDENCE OF DISTURBANCE:  
 logging, sugar bush, gaps, livestock, exotic species, plantation, trails, dumping, fill, rec. use, noise, disease/death of trees, wind throw, browse, beaver, flooding, fire, ice  
Franaln & Rhamnat throughout

WILDLIFE HABITAT OBSERVATIONS:  
 vernal pools, hibemacula, snags, fallen logs, tracks, den/nest, scat, carcass, vocalization, feeding

COMMENTS / ADDITIONAL NOTES:







UNIT #: (4)

Observers: SL

Date: Sept 23, 2020

Weather / Limitations: none

SOIL PROFILE SKETCH			
	Sample # 4	Sample # 5	Sample # 6
UTM Waypoint #	469455 4923979	469451 4923964	469445 4923956
10 cm			
0 cm	on the border of unit 4 + 5		
10 cm		organic	
20 cm			organic
30 cm	organic	sand	
40 cm			sand
50 cm			
60 cm			
70 cm			
80 cm	sand	not sampled	not sampled
90 cm	not sampled		
>100 cm			

SOIL SAMPLES			
	Sample # 4	Sample # 5	Sample # 6
Photo #	P 18	P 19	P 20
Depth Sampled	90 cm	50 cm	55 cm
Depth To / Of	Mottles	yes	minor
	Gley	-	-
	Bedrock	-	-
	Water Table	~ 30 cm	~ 40 cm
	Carbonates	-	-
	Organics	80 cm	15 cm
% Coarse Fragments	-	-	-
Effective Texture			
Moisture Regime			
Substrate Type			

Coarse Fragments: Gravel, Cobble, Stone, Boulder

SOIL PROFILE SKETCH			
	Sample # 7	Sample # 8	Sample 3
UTM Waypoint #	469447 4923959	469440 4923965	
10 cm			
0 cm			
10 cm	organic		
20 cm			
30 cm			
40 cm	sand		
50 cm			
60 cm	not sampled	not sampled	
70 cm			
80 cm			
90 cm			
>100 cm			

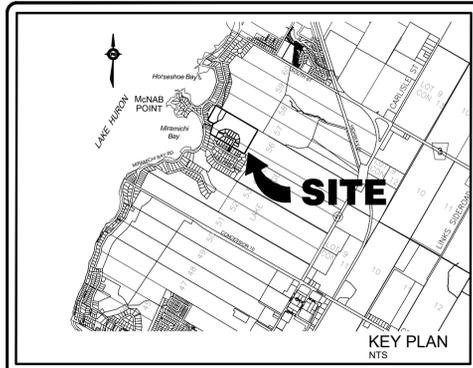
SOIL SAMPLES			
	Sample # 7	Sample # 8	Sample 3
Photo #	P 21	P 22	
Depth Sampled	55 cm	55 cm	
Depth To / Of	Mottles	yes	
	Gley	-	
	Bedrock	-	
	Water Table	~ 40 cm	50 cm
	Carbonates	-	
	Organics	35 cm	35 cm
% Coarse Fragments	-	-	
Effective Texture			
Moisture Regime			
Substrate Type			

Coarse Fragments: Gravel, Cobble, Stone, Boulder

COMMENTS / ADDITIONAL NOTES: Samples 5 - 8 a cross section of Unit 4. Note drier soils with less organics in sample 5 + 8 on outskirts of unit.

# APPENDIX

## **G** DRAFT PLAN OF SUBDIVISION



RESIDENTIAL LOT INFORMATION		
LOT	FRONTAGE (m.) (AS DEFINED IN ZONING BYLAW No. 201-2000)	AREA (sq.m.)
1	32.0	2139
2	30.0	2010
3	30.0	2010
4	31.8	2534
5	30.1	3928
6	35.2	2372
7	31.7	1775
8	30.0	1986
9	30.0	2010
10	30.0	2010
11	30.1	2693
12	30.1	1867
13	30.0	1728
14	30.0	1830



**Legend**

- PROPOSED SUBDIVISION BOUNDARY
- - - PROPOSED LOT LINE
- EXISTING PROPERTY/STREET LINE
- EXISTING CONTOUR
- EDGE OF EXISTING PAVEMENT
- EXISTING ZONING LIMITS
- EXISTING TRAIL
- EXISTING STREAM
- DEVELOPABLE LAND BOUNDARY AS SHOWN ON SP2 (AQUATIC AND WILDLIFE SERVICES PLAN DATED DECEMBER 23, 2005.)
- HYD EXISTING FIREHYDRANT
- HP EXISTING TREE LINE
- HP EXISTING HYDRO GUY WIRE
- HP EXISTING HYDRO POLE
- BPED EXISTING TELEPHONE PEDESTAL

NOTE:  
 1. NUMBERING OF LOTS ON FINAL PLAN MAY VARY FROM THAT SHOWN ON THE DRAFT PLAN.  
 2. LOCATION OF TRAILS DERIVED FROM INFORMATION PROVIDED BY THE TOWN OF SAUGEEN SHORES AND IS APPROXIMATE ONLY.

CAUTION:  
 THE POSITION OF POLE LINES, CONDUITS, WATERMANS, SEWERS AND OTHER UNDERGROUND AND OVERGROUND UTILITIES AND STRUCTURES IS NOT NECESSARILY SHOWN ON THE DRAWINGS, AND, WHERE SHOWN, THE ACCURACY OF THE POSITION OF SUCH UTILITIES AND STRUCTURES IS NOT GUARANTEED. BEFORE STARTING WORK, THE CONTRACTOR SHALL INFORM HIMSELF OF THE EXACT LOCATION OF ALL SUCH UTILITIES AND STRUCTURES, AND SHALL ASSUME ALL LIABILITY FOR DAMAGE TO THEM.

**DRAFT PLAN OF SUBDIVISION**  
**BLOCK 15**  
**REGISTERED PLAN No. 3M-209**  
**AND PART OF LOTS 55 AND 56**  
**LAKE RANGE**  
**(GEOGRAPHIC TOWNSHIP OF SAUGEEN)**  
**TOWN OF SAUGEEN SHORES**  
**COUNTY OF BRUCE**

**RELEVANT SITE INFORMATION**

DETACHED RESIDENTIAL LOTS (14)	3.089 ha.
MUNICIPAL STREETS (MARY ROSE COURT)	0.659 ha.
WALKWAYS (BLOCKS 15 AND 16)	0.067 ha.
TO BE RETAINED BY OWNER (BLOCKS 17 AND 18)	12.437 ha.
TOTAL PROPOSED SUBDIVISION	16.252 ha.

**ADDITIONAL INFORMATION REQUIRED UNDER SECTION 51 OF THE PLANNING ACT**

a. AS SHOWN	g. AS SHOWN
b. AS SHOWN	h. MUNICIPAL WATER SUPPLY
c. AS SHOWN	i. SILTY SAND
d. SINGLE FAMILY RESIDENTIAL	j. AS SHOWN
e. AS SHOWN	k. WATER, STORM SEWERS, HYDRO, TELEPHONE, CABLE TV, FIRE, AMBULANCE AND POLICE PROTECTION
f. AS SHOWN	l. AS SHOWN

**SURVEYOR'S CERTIFICATE**

I CERTIFY THAT:  
 THE BOUNDARIES OF THE LANDS TO BE SUBDIVIDED AND THEIR RELATIONSHIP TO THE ADJACENT LANDS ARE CORRECTLY SHOWN.

DATE \_\_\_\_\_

J. BRENT ENGLAND O.S.  
 DINSMORE & ENGLAND LTD.  
 ONTARIO & CANADA LAND SURVEYORS

**OWNER'S CERTIFICATE**

I, THE REGISTERED OWNER OF THESE LANDS, HEREBY AUTHORIZE COBIDE ENGINEERING INC. TO SUBMIT THIS DRAFT PLAN FOR APPROVAL.

JANUARY 4, 2021.  
 DATE \_\_\_\_\_

OWNER:  
 MIRAMICHI SHORES LAND DEVELOPMENT LTD.  
 c/o BRAD R. PROYDE  
 10 COLLARD WAY,  
 P.O. BOX 1725  
 PORT ELGIN, ON  
 N0H 2G0

No.	DATE	FIRST SUBMISSION	DESCRIPTION	BY	APPD
0	DEC 21/20			SJC	SJC

REVISION / ISSUE

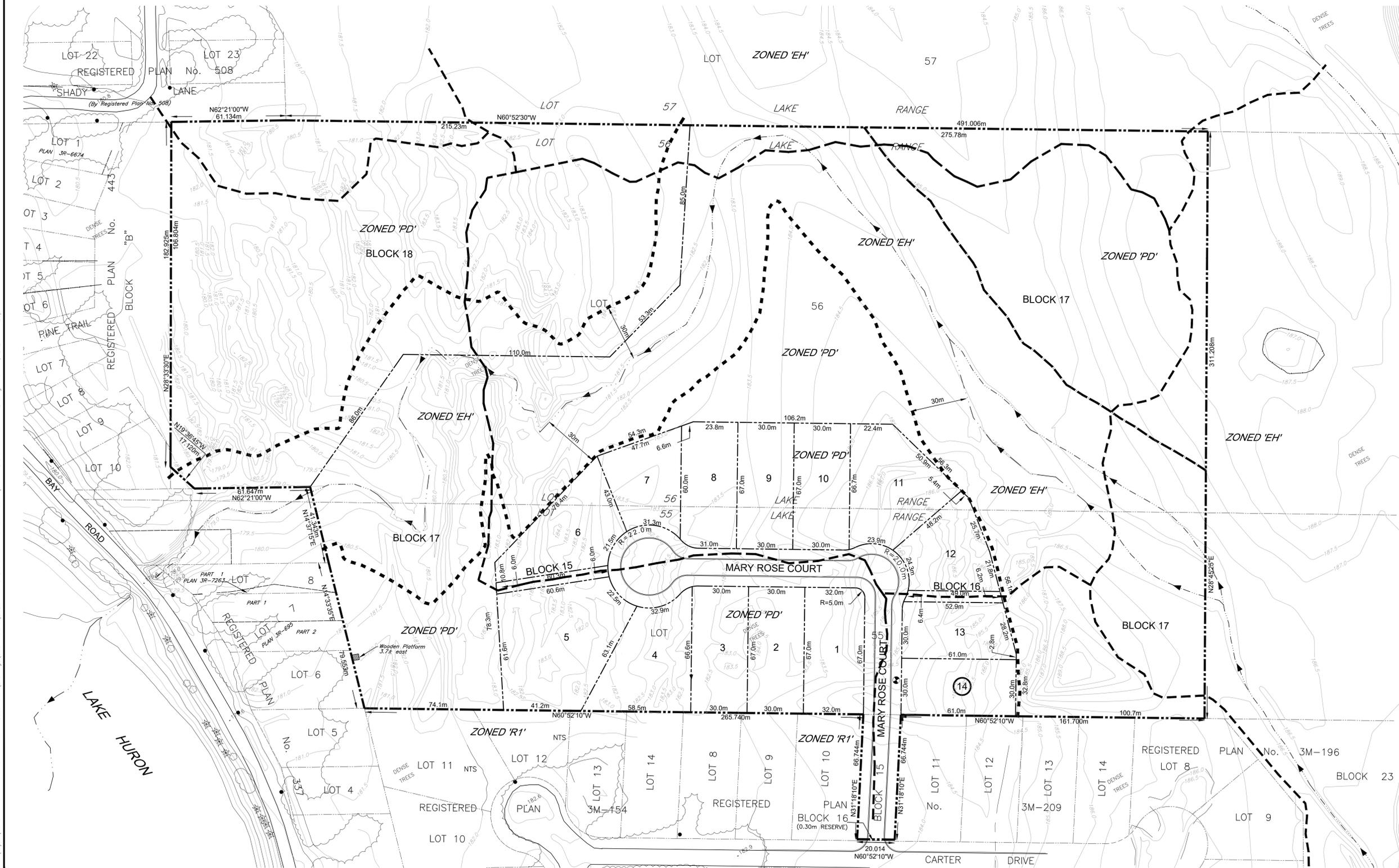
517 10th STREET, Hanover, Ontario N4N  
 1R4 Telephone: (519) 506-5959  
 www.cobideeng.com

**MIRAMICHI SHORES PHASE 4**  
**PROPOSED SUBDIVISION**  
**BLOCK 15**  
**REGISTERED PLAN No. 3M-209**  
**AND PART OF LOTS 55 AND 56**  
**LAKE RANGE**  
**(GEOGRAPHIC TOWNSHIP OF SAUGEEN)**  
**TOWN OF SAUGEEN SHORES**

Client: MIRAMICHI SHORES LAND DEVELOPMENT LTD.

Design: SJC Scale: 1:1000  
 Drawn: JAF Approved:  
 Checked: SJC  
 Date: OCT 2020 Design Engineer

DRAWING No. 00104-DP1

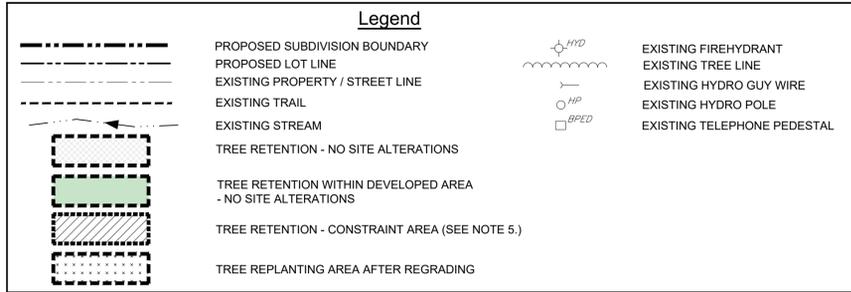
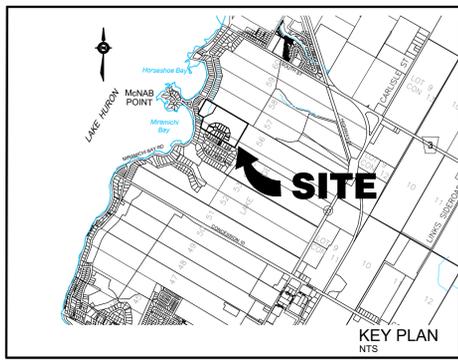


H:\P\0104\_Miramichi Shores - Phase 4 Subdivision\Drawings\Submissions\2020-10-15 Draft Plan First Submission\00104 Draft Plan Jan 11-21.dwg Jan 11, 2021 - 4:28pm

# APPENDIX

**H**

TREE RETENTION  
PLAN



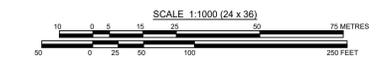
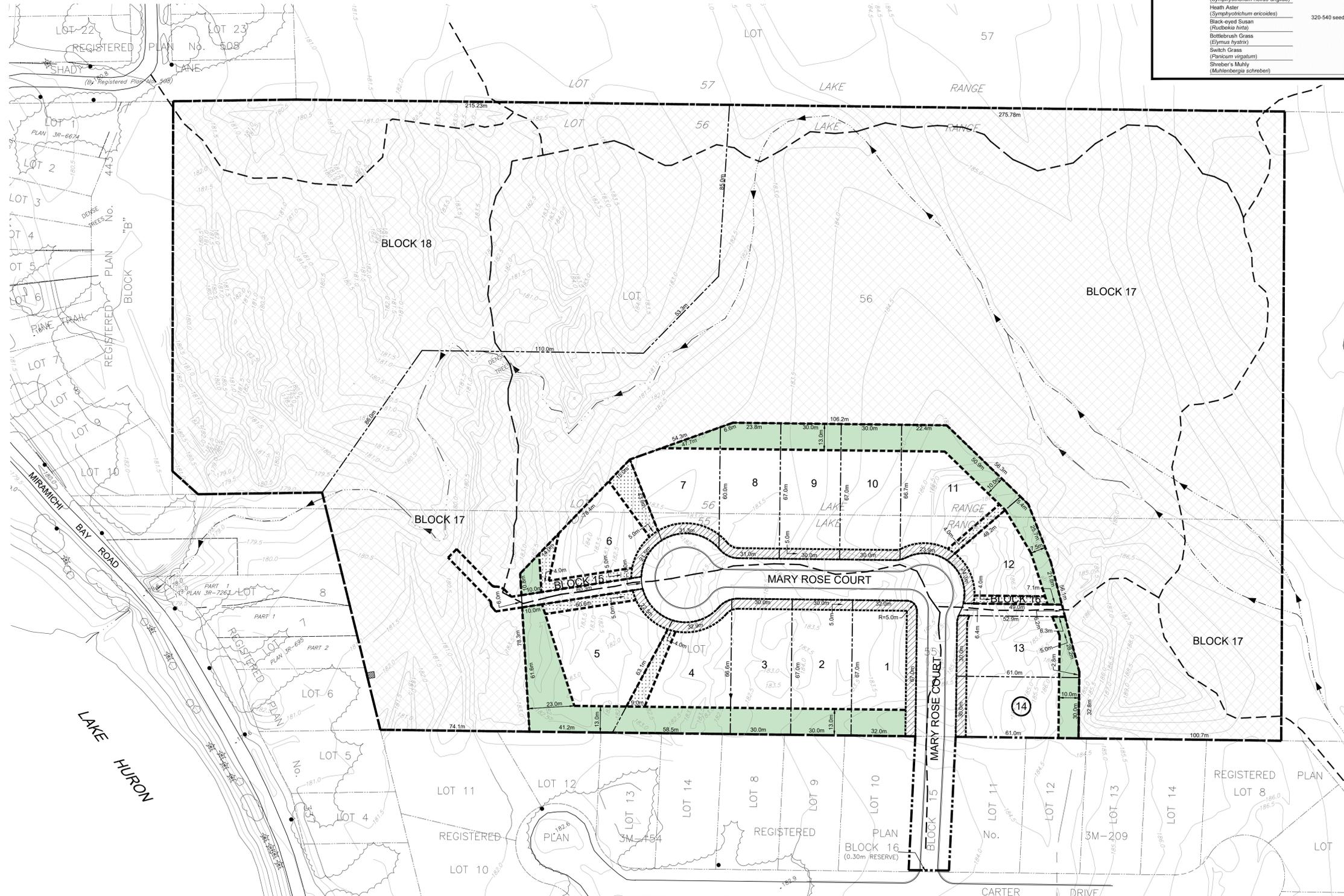
**TREE PRESERVATION AND REPLANTING INFORMATION**

TOTAL PROPOSED SUBDIVISION	16,252 ha.
TOTAL DEVELOPED AREA	3,845 ha.
TREE RETENTION WITHIN DEVELOPED AREA	6,446 m <sup>2</sup>
TREE RETENTION WITHIN CONSTRAINT AREA	1,806 m <sup>2</sup>
TREE REPLANTING AREA	1,449 m <sup>2</sup>
<b>TOTAL TREE RETENTION &amp; REPLANTING AREA</b>	<b>9,701 m<sup>2</sup> = 25.23% OF DEVELOPED AREA</b>

**Table 1: Suitable Species for Replanting Areas**

VEGETATION TYPE	SPECIES	SIZES	APPROPRIATE SPACING
TREES	Red Oak ( <i>Quercus rubra</i> )	saplings (> 60 cm)	3.0 – 3.5 m
	Sugar Maple ( <i>Acer saccharum</i> )	saplings (> 60 cm)	2.0 – 2.5 m
	Eastern White Cedar ( <i>Thuja occidentalis</i> )	30 – 60 cm	2.0 – 2.5 m
	Black Walnut ( <i>Juglans nigra</i> )	30 – 60 cm	2.0 – 2.5 m
	Red Maple ( <i>Acer rubrum</i> )	30 – 60 cm	2.0 – 2.5 m
	Eastern Hemlock ( <i>Tsuga canadensis</i> )	30 – 60 cm	2.0 – 2.5 m
	Eastern White Pine ( <i>Pinus strobus</i> )	30 – 60 cm	2.0 – 2.5 m
	Nannyberry ( <i>Viburnum lentago</i> )	25 – 60 cm	0.75 – 1.5 m
	Pin Cherry ( <i>Prunus pennsylvanica</i> )	25 – 60 cm	0.75 – 1.5 m
	Serviceberry ( <i>Amelanchier</i> spp.)	25 – 60 cm	0.75 – 1.5 m
SHRUBS	Alternate-leaved Dogwood ( <i>Cornus alternifolia</i> )	25 – 60 cm	1.0 – 1.5 m
	Bush Honeysuckle ( <i>Diervilla lonicera</i> )	25 – 60 cm	1.0 – 1.5 m
	Gray goldenrod ( <i>Solidago nemoralis</i> )		
	Wild Bergamot ( <i>Monarda fistulosa</i> )		
	New England Aster ( <i>Symphyotrichum novae-angliae</i> )		
GROUND COVER	Health Aster ( <i>Symphyotrichum ericoides</i> )		
	Black-eyed Susan ( <i>Rudbeckia hirta</i> )		
	Bottlebrush Grass ( <i>Elymus hystrix</i> )		
	Switch Grass ( <i>Panicum virgatum</i> )		
	Shraber's Mulhy ( <i>Mulinbergia schreberi</i> )		
	320-540 seeds per square metre		

- Notes**
- THE TREE PRESERVATION AND EDGE MANAGEMENT PLAN WAS PROVIDED BY COBIDE ENGINEERING INC. AND REVIEWED BY WSP CANADA INC.
  - BASE PLAN WAS PROVIDED BY COBIDE ENGINEERING INC.
  - NUMBERING OF LOTS ON THE FINAL PLAN MAY VARY FROM THAT SHOWN ON THIS PLAN.
  - THROUGH DEVELOPER ARCHITECTURAL CONTROL AGREEMENTS, FUTURE LANDOWNERS WILL BE ENCOURAGED TO MAXIMIZE TREE RETENTION.
  - ALONG THE FRONTAGE OF EACH LOT, A 5.0m DEPTH OF UNDISTURBED VEGETATION SHALL BE MAINTAINED EXCEPT FOR THE FOLLOWING:
    - DRIVEWAY ACCESS, UTILITY SERVICES (WATER, STORM, HYDRO) (MAXIMUM 8m)
    - LOT FILLING TO ACHIEVE LOT GRADING REQUIREMENTS.
- TREE RETENTION AREAS**
- CLEARLY IDENTIFIED TREE PROTECTION MARKINGS (CAUTION TAPE, EXCLUSION MARKINGS, ETC.) BETWEEN THE WORK AREAS AND THE TREE RETENTION AREA TO BE INSTALLED ALONG THE DRILLPIPE OF THE RETAINED TREES BEFORE WORK ON THE SITE BEGINS AND INSPECTED REGULARLY TO ENSURE IT IS PERFORMING ITS INTENDED FUNCTION. IT IS TO BE CLEARLY SIGNED AS A VEGETATION PROTECTION ZONE. IF SECTIONS ARE FOUND TO BE DAMAGED OR NON-FUNCTIONAL THEY ARE TO BE REPLACED IMMEDIATELY.
  - TEMPORARY SNOW OR CONSTRUCTION TREE PROTECTION FENCING TO BE USED TO DELINEATE THE FOREST EDGE FOR TREES WITHIN THE VICINITY OF THE CONSTRUCTION SITE THAT ARE TO BE PRESERVED. SUCH FENCING SHALL ACT AS A BARRIER TO PREVENT INADVERTENT DISTURBANCES TO RESTRICTED AREAS. TREE PROTECTION BARRIERS MUST REMAIN IN EFFECTIVE CONDITION UNTIL ALL CONSTRUCTION AND LOT GRADING ACTIVITIES INCLUDING LANDSCAPING HAVE BEEN COMPLETED ON THAT PARTICULAR LOT.
  - THE FOLLOWING ACTIVITIES ARE PROHIBITED WITHIN THE RETAINED TREE AREAS: CONSTRUCTION; STORAGE OR STOCKPILING OF MATERIALS; DISPOSAL OF ANY LIQUIDS; GRADING; EXCAVATING; PARKING OF VEHICLES; AND OPERATION OF HEAVY MACHINERY.
  - WHERE BRANCHES OVERHANG ACCESS ROUTES OR THE STORM SEWER ALIGNMENT AND MAY BE IMPACTED BY MACHINERY, THE BRANCHES ARE TO BE PRUNED BEFORE EXCAVATION ACTIVITIES ARE COMMENCED. PRUNING IS TO BE LIMITED TO LESS THAN 20% OF THE TREE CROWN AND TO BE COMPLETED BY A CERTIFIED ARBORIST OR QUALIFIED TREE PROFESSIONAL.
  - DAMAGE TO TREES, INCLUDING BROKEN LIMBS, DAMAGE TO ROOTS, OR WOUNDS TO THE MAIN TRUNK MUST BE REPORTED TO THE CONSULTING ARBORIST IMMEDIATELY SO THAT MITIGATION MEASURES CAN BE PROMPTLY IMPLEMENTED.
  - TREES ARE TO BE FELLE INTO THE CONSTRUCTION AREA SO AS TO REDUCE THE POTENTIAL FOR INJURY/DAMAGE TO NEIGHBOURING TREES. TREE BRANCHES AND BRUSH ARE TO BE REMOVED FROM THE SITE.
  - SHOULD ANY WORK BE REQUIRED WITHIN THE TREE RETENTION AREA, THE CONTRACTOR AND THE CONSULTING ARBORIST SHALL CONTACT THE APPROPRIATE REGULATING AGENCIES FOR APPROVAL.
  - TO AVOID INTERFERENCE WITH THE EGGS, NESTS OR YOUNG OF BIRDS PROTECTED UNDER THE FEDERAL MIGRATORY BIRDS CONVENTION ACT (1984), TREE AND VEGETATION REMOVAL SHOULD NOT OCCUR DURING BREEDING SEASON (APRIL 1ST TO AUGUST 31ST), UNLESS A SURVEY BY A QUALIFIED AVIAN BIOLOGIST CONFIRMS THAT THERE ARE NO ACTIVE NESTS WITHIN THE VEGETATION TO BE REMOVED.
- SITE RESTORATION**
- TOPSOIL REMOVED DURING SITE GRADING SHOULD BE STORED IN A DESIGNATED STOCKPILING AREA AND USED DURING SITE RESTORATION, IF POSSIBLE.
  - FOLLOWING COMPLETION OF THE CONSTRUCTION ACTIVITIES DISTURBED AREAS TO BE GRADED TO MATCH PRECONSTRUCTION CONDITION, WHERE POSSIBLE. IF REQUIRED, UP TO 15 CM OF CONTAMINANT-FREE AND WEED-FREE TOPSOIL TO BE APPLIED TO THE DISTURBED AREA PRIOR TO APPLYING THE SEED MIX.
  - ANY COMPACTED SOILS SHOULD BE DECOMPACTED BY SCARIFICATION OR A SIMILAR APPROVED METHOD PRIOR TO PLANTING.
  - UPON COMPLETION OF THE CONSTRUCTION ACTIVITIES, EROSION AND SEDIMENT CONTROL MEASURES TO BE MAINTAINED UNTIL SITE RESTORATION ACTIVITIES ARE COMPLETED AND DISTURBED AREAS ARE NO LONGER SUSCEPTIBLE TO EROSION AND SILTATION. EXPOSED/DISTURBED SOILS SHOULD BE STABILIZED AND RE-VEGETATED USING A NATIVE SEED MIX WITH AN ANNUAL NURSE CROP, SUCH AS ANNUAL RYEGRASS (*LOLIUM MULTIFLORUM*).
- REPLANTING AREAS**
- SUITABLE SPECIES FOR PLANTING IN THE REPLANTING AREAS ARE PROVIDED WITHIN THE ACCOMPANYING REPLANTING TABLE.
  - STOCK AND SEED TO BE OBTAINED FROM A REPUTABLE NATIVE PLANTS NURSERY. THE SCIENTIFIC SPECIES NAME SHOULD BE REFERENCED TO ENSURE THAT NATIVE PLANT STOCK IS BEING OBTAINED (MANY PLANTS HAVE NATIVE AND NON-NATIVE SPECIES WHICH SHARE A COMMON NAME).
  - PLANTINGS SHOULD BE DONE BY HAND TO REDUCE MECHANICAL COMPACTION OF SOILS AND DAMAGE TO EXISTING VEGETATION. HYDRO SEEDING IS ACCEPTABLE FOR GROUND COVER. PLANTING SHOULD BE PERFORMED BY A QUALIFIED AND KNOWLEDGEABLE LANDSCAPER TO ENSURE PLANTINGS ARE SPACED APPROPRIATELY AND PLACED IN SUITABLE SUN EXPOSURES AND MOISTURE REGIMES.
  - PLANTING TO BE DONE WITHIN THE GROWING SEASON AS SOON AS THE CONSTRUCTION HAS FINISHED. SPRING PLANTING AND SEEDING IS RECOMMENDED. FALL PLANTINGS ARE SUITABLE FOR THESE SPECIES AND SHOULD PROVE SUCCESSFUL, PROVIDED HEALTHY STOCK IS USED. PLANTING FOLLOWS RECOMMENDATIONS FOR INDIVIDUAL SPECIES, AND PLANTS RECEIVE SUFFICIENT WATER PRIOR TO THE WINTER MONTHS.
  - A MONITORING PLAN TO BE IMPLEMENTED TO MANAGE REGENERATION OF INVASIVE SPECIES AND TO CONFIRM THAT THE RESTORATION EFFORTS HAVE BEEN SUCCESSFUL. SUPPLEMENTARY PLANTINGS SHOULD BE COMPLETED IF SURVIVAL RATES ARE BELOW 50%.
  - A MINIMUM OF 25% POST-CONSTRUCTION FOREST COVER SHOULD REMAIN ON THE SITE. IT IS UNDERSTOOD THAT MINOR CHANGES TO THE PLAN MAY BE NECESSARY BASED ON FINAL SITE CONDITIONS AND GRADING, HOWEVER, IF REQUIRED, ANY MAJOR CHANGES TO BE REVIEWED AND APPROVED BY RELEVANT REGULATING AGENCIES PRIOR TO BEING IMPLEMENTED.



1	FEB 01/21	FIRST SUBMISSION	SJC	SJC
0	FEB 02/21	PRELIMINARY SUBMISSION	SJC	SJC
No.	DATE	DESCRIPTION	BY	APPD
REVISION / ISSUE				

**COBIDE ENGINEERING INC.**

517 10th Street, Hanover, Ontario N4N 1R4  
Telephone: (519) 506-5959  
www.cobideeng.com

Title: **MIRAMICHI SHORES PHASE 4 TREE RETENTION PLAN**  
Town of Sauguen Shores, Ont.

Client: **MIRAMICHI SHORES LAND DEVELOPMENT LTD.**

Design: TLB Scale: 1:1000  
Drawn: JAF Approved:  
Checked: SJC  
Date: FEB 2021  
DRAWING No. 00104-TP1