

Environmental Impact Study (EIS) Report

**Project Location: 37719 Lake Line Road, Port Stanley,
ON**

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October 22, 2021

MTE File No.: 48957-100



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1.0 Introduction

MTE has been retained by Below-Me Developments (the Proponent) to complete an Environmental Impact Study (EIS) for the Kettle Creek Subdivision at 37719 Lake Line, Port Stanley in the Municipality of Central Elgin and Elgin County (the Subject Lands; Figure 1) in support of a Draft Plan of the Subdivision and Zoning By-Law amendment. An Issues Scoping Report (ISR) was previously submitted for the Subject Lands and adjacent land (BioLogic, 2015) which included a recommendation for a scoped EIS. During a pre-consultation meeting held with the Proponent, the Township of Central Elgin and Kettle Creek Conservation Authority on April 7, 2021, it was confirmed that an EIS was required as part of the Draft Plan application.

The 12.8 ha Subject Lands consist of an active sod farm and former farmstead as well as forested slopes, which are part of the Elgin County natural heritage system [Figure 1]. A municipal drain, Marr Drain, is located along the southern boundary of the Subject Lands. A 120m study area of Adjacent Lands has been applied to the Subject Lands for the purpose of evaluating contiguous or nearby natural features. The Adjacent Lands include the Lake Line Right-of-way (R.O.W.) to the north, Kettle Creek Golf and County Club and a Public school to the south, and the River Road R.O.W. to the west. Per the Official Plan of Central Elgin, the Subject Lands have a land use designation of residential in the farmed portion and natural heritage/significant woodland on the forest slopes (Schedule G) and are zoned OS2-29 and OS2-30 (Open Space). The entire Subject Lands are within the area regulated by Kettle Creek Conservation Authority under Ontario Regulation 181/06: Development, Interference with Wetlands and Alterations to Shorelines and Watercourses.

The proposal is to establish 93 single detached dwellings with associated future municipal streets on the Subject Lands, with servicing (water) from a combined sewer in the Carlow Road R.O.W., that is directed to an existing pumping station that ultimately pumps the flows up Lake Line and discharged into the treatment facility on Scotch Line. The proposed Development Area is confined to the existing agricultural portions of the Subject Lands.

Following the pre-consultation meeting held on April 7, 2021, a Terms of Reference was submitted to Central Elgin and Elgin County on August 25, 2021, to confirm the scope of natural heritage field investigations as well as the contents of the EIS report for the Subject Lands. Comments provided by Kevin McClure (Planner, Central Elgin) and Nancy Pasato (Manager of Planning, Elgin County) on August 26, 2021 were incorporated into a revised Terms of Reference which was approved on September 17, 2021 [Appendix A]. This EIS has been prepared with reference to the Municipality of Central Elgin Official Plan policies in Section 3.1.2 and 3.4.2, and Elgin County Official Plan Policies in Section D1.2, specifically, Policy D1.2.8.1 and Appendix B. The EIS will build on the ISR (BioLogic, 2015) and incorporate life science inventories from 2015 and 2021 to document existing natural heritage features and functions on the Subject Property and adjacent lands, evaluate potential impacts, and recommend appropriate avoidance (e.g. setbacks), mitigation and enhancement measures to protect the natural heritage features.

2.0 Natural Heritage Policy Overview

The following provincial and municipal legislation and policies were reviewed to inform the evaluation of significant natural heritage features and assessment of potential impacts.

2.1 Planning Act

The Provincial Policy Statement (PPS; MMAH, 2020) was issued under the *Planning Act, 1990* to provide direction to regional and local municipalities regarding planning policy, ensuring that decisions made by planning authorities were consistent with provincial policy. With respect to natural heritage features and resources, the PPS defines seven natural heritage features:

- Significant wetlands and significant coastal wetlands
- Significant woodlands
- Significant valleylands
- Significant wildlife habitat (SWH)
- Significant areas of natural and scientific interest (ANSI's)
- Fish habitat, and,
- Habitat of endangered and threatened species

These features are described in the Natural Heritage Reference Manual (MNR, 2010), a technical document intended to support the PPS which also provides guidance to help assess these natural heritage features. Section 2.1.4 of the PPS states that development and site alteration are not permitted in significant wetlands or significant coastal wetlands in Ecoregion 7E, where the Subject Lands are located. Section 2.1.5 states that development and site alteration shall not be permitted in significant woodlands, significant valleylands, SWH or ANSI's unless it has been demonstrated through an EIS that there will be no negative impacts on the features or their ecological functions. Development and site alteration are not permitted in fish habitat or habitat of endangered or threatened species, except in accordance with provincial and federal legislation.

2.2 Municipality of Central Elgin Official Plan (2013)

The Official Plan of the Municipality of Central Elgin includes policies that guide growth, economic development and the protection of natural heritage features across the municipality. With respect to Natural Heritage (Section 3.1.1), new permitted uses, or expansions/ enlargements to existing uses, buildings or structures within a Natural Heritage designation that require a Planning Act approval may be permitted only if they can be demonstrated through an Environmental Impact Study (EIS) that will demonstrate that there will be no negative impacts to the natural heritage features and/or their ecological functions.

The Subject Lands are designated as Residential in the farmed portions and Natural Heritage/ Significant Woodland on the forest slopes by the Central Elgin Official Plan (Schedule G, 2013). The Adjacent Lands to the south and to the east are also designated as Residential and Natural Heritage (Schedule G, 2013).

2.3 Municipality of Central Elgin, Zoning By-Law (2018)

The Subject Lands are currently designated as OS2-29 and OS2-30 (Open Space) by the Municipality of Central Elgin. This provision applies to lands used or proposed to be used for parks and outdoor recreational purposes and cemeteries where structures are limited. The Adjacent Lands are zoned as Residential (R1).

2.4 County of Elgin Official Plan (2015)

The purpose of the Official Plan of the County of Elgin (Final consolidation, November 2015) is to provide direction and a framework for managing growth and land use decisions within the County through the establishment of a broad, upper tier policy framework that provides guidance to local municipalities, by implementation of the PPS at the County level, and by facilitating coordination and coordination amongst local municipalities and the County on planning and development issues.

Section A4.2 describes the County's strategic objective to protect natural heritage features and areas, and their associated ecological functions. Part D of the Official Plan provides more specific policies to achieve this objective, such as criteria for defining natural heritage significance (e.g. significant woodlands) and identifying how natural heritage features should be considered in the context of development and site alteration. Development and site alteration is not permitted in significant habitat of endangered or threatened species, significant wetlands and significant coastal wetlands (D.1.2.6a)). Development and site alteration is not permitted in significant woodlands, significant valleylands, SWH and ANSIs or Adjacent Lands unless it has been demonstrated through an EIS that there will be no negative impacts on the natural features or their ecological functions. Appendix B of the Official Plan provides the County's requirements for an EIS.

Woodlands on the Subject Property are mapped as part of the County's Natural Heritage System on Map Appendix '1' of the Official Plan.

2.5 Kettle Creek Conservation Authority

The Kettle Creek Conservation Authority (KCCA) regulates lands within its watershed under Ontario Regulation 181/06, pursuant to Section 28 of the *Conservation Authorities Act*. The KCCA has jurisdiction over riverine flooding and erosion hazards, wetlands and the surrounding area, and requires that landowners obtain written approval from the Authority prior to undertaking any site alteration or development within the regulation limit.

The entire Subject Lands are within the regulation limit of the Kettle Creek Conservation Authority (KCCA). This regulation limit is associated with the Hazard Area (slope) on the north portion of the Subject Lands.

2.6 Endangered Species Act

The *Endangered Species Act, 2007* protects species listed as threatened, endangered or extirpated in Ontario from killing, harm, harassment or possession, and also protects their habitats from damage or destruction. All species are provided with general habitat protection for areas the species depend on to carry out their life processes, such as reproduction, rearing, hibernation, migration or feeding. Activities that may impact a protected species or its habitat require prior authorization from the Ministry of Environment, Conservation and Parks (MECP), unless the activities are exempt under Ontario Regulation 242/08. The provincial status of species in Ontario is determined by the Committee on the Status of Species at Risk in Ontario (COSSARO) and documented in the Species at Risk in Ontario List (SARO List).

3.0 Natural Heritage Features and Functions

Natural heritage field studies and vegetation community classification completed in 2014, 2015 and 2021 have been used to assess the Subject Lands and the Adjacent Lands for natural heritage significance with respect to the proposed future construction. The following resources were also reviewed for relevant information respecting natural heritage features on or adjacent to the Subject Lands:

- Issues Scoping Report – Glover – 37719 Lake Line & 320 Carlow Road, Port Stanley, Ontario (BioLogic, 2015)
- Central Elgin Official Plan (2013)
- The Official Plan of the County of Elgin (Consolidated 2015)
- Kettle Creek Conservation Authority Wetland Management Policies
- Land Information Ontario (LIO) mapping (MNRF, 2021a)
- Natural Heritage Information Centre (NHIC) online database (MNRF, 2021b)
- Atlas of the Breeding Birds of Ontario (Cadman et al., 2007)
- Ontario Reptile and Amphibian Atlas (ORAA; Ontario Nature, 2021)
- iNaturalist citizen science database
- eBird citizen science database

3.1 Physiography and Topography

The topography of the Subject Lands is nearly level with a moderate to steep wooded slope along the north and northwest portions of the property (BioLogic, 2015). Soils throughout are associated with modern alluvium consisting of undifferentiated material (gravel, sand, silt, clay, muck) composing side walls and terraces or flood plains of valleys associated with Kettle Creek to the east (BioLogic, 2015). The wooded slope at the north end of the Subject Lands is 27.8m with a gradient range of 0.6H:1V – 1.3H:1V, which is below the factor of safety range, excluding the reinforcement provided by vegetation (EXP, 2017). Previous geotechnical investigations have found evidence of groundwater seepage within TP2 to TP5 below depths ranging between about 1.4m and 2.7m (Trow Associates, 2007).

3.2 Designated Natural Features

The provincially-significant Port Stanley Till Earth Science Area of Natural and Scientific Interest (ANSI) is located directly north of the Subject Lands across Lake Line (LIO, 2014). The closest significant wetland, Hawk Cliff PSW, is over 2 km to the east of the subject lands (MNRF, 2014). Two locally-significant wetlands are located approximately 1 km to the north and north east (Moore Water Gardens and Port Stanley Poison Sumac Swamp). Woodlands on the Subject Property are mapped as part of Central Elgin and Elgin County's Natural Heritage System.

No other designated natural features were identified within 1km of the Subject Lands.

3.3 Species at Risk Records

Previous correspondence with the Ministry of Natural Resources and Forestry (MNRF) took place to investigate potential Species at Risk within the area of the Subject Lands with records received on June 27, 2014. This background data review was updated in 2021. Data sources used for this updated review included the Species at Risk in Ontario (SARO) List, NHIC, ORAA, and citizen science online databases such as eBird and iNaturalist. Many of these sources display data for a broad area (e.g. by upper-tier municipality, per 10km atlas square) and therefore provide only a general potential for species presence on or near the Subject Lands.

Threatened or Endangered species and their habitats with the potential to be present within 10km of the Subject Lands are listed in Table 1. These species and their habitats are protected under the Endangered Species Act. Habitat for species listed as Special Concern is considered Significant Wildlife Habitat, and is therefore discussed in Section 3.5. The potential for these species or their habitats to be present on the Subject Lands was assessed as part of this EIS using data gathered during field investigations as well as desktop analysis.

Table 1: Species at Risk Potentially Present within 10km of the Subject Lands

Common Name	Scientific Name	ESA (SARO List)	S-rank (NHIC)
Bank Swallow	<i>Riparia riparia</i>	THR	S4B
Barn Swallow	<i>Hirundo rustica</i>	THR	S5B
Bobolink	<i>Dolichonyx oryzivorus</i>	THR	S4B
Chimney Swift	<i>Chaetura pelagica</i>	THR	S4B
Eastern False Rue-anenome	<i>Enemion bitermatum</i>	THR	S2
Eastern Meadowlark	<i>Sturnella magna</i>	THR	S4B
Louisiana Waterthrush	<i>Parkesia motacilla</i>	THR	S3B
Red-headed Woodpecker	<i>Melanerpes erythrocephalus</i>	END	S4B
Acadian Flycatcher	<i>Empidonax virescens</i>	END	S2
Eastern Prickly-pear Cactus	<i>Opuntia cespitosa</i>	END	S3
Butternut	<i>Juglans cinerea</i>	END	S2?
Spiny Softshell	<i>Apalone spinifera</i>	END	S2
Little Brown Myotis	<i>Myotis lucifugus</i>	END	S3
Northern Myotis	<i>Myotis septentrionalis</i>	END	S3
Eastern Small-footed Myotis	<i>Myotis leibii</i>	END	S2S3
Tri-coloured Myotis	<i>Perimyotis subflavus</i>	END	S3?

3.4 Field Investigations

Field investigations were previously completed as part of the ISR (BioLogic, 2015) in 2014 and 2015. Additional surveys targeting the Subject Lands were undertaken between May and October, 2021 to update vegetation community classification, inventory plant species present within, document bird species breeding on or adjacent to the Subject Lands, identify potential habitat for Species at Risk [from Table 1], and record incidental observations of wildlife on the Subject Lands. These investigations were completed to support the assessment of potential impacts to natural heritage features and species at risk in the context of provincial and municipal policy. A summary of field investigations undertaken as part of the ISR (BioLogic, 2105) and current EIS is provided in Table 2.

Several field investigations were excluded from the 2021 field program based on the findings of the ISR (BioLogic, 2015) and additional unpublished data gathered for the Subject Lands. Amphibian surveys were completed on the Subject Lands in 2015 (BioLogic, unpublished data). Habitat suitable for amphibian breeding (i.e. shallow standing water) was not observed within the wetland community on the Subject Lands, therefore these surveys were not proposed for 2021. Habitat features that would concentrate snake species (e.g. candidate hibernaculum) were not documented in the ISR and there are no records of snake Species at Risk in the vicinity of the Subject Lands, therefore reptile surveys were not proposed. Migratory bird surveys were also not proposed as the development has been designed to avoid direct impacts to the woodland and stopover habitat for migratory waterfowl or shorebirds is not present on the site based ELC and the findings of the ISR. The Significant Wildlife Habitat Mitigation Support Tool (MNR, 2015) recommends avoidance of woodlands but no setback as the key mitigation measure for migratory landbirds, therefore targeted surveys would not inform the assessment of impacts.

Table 2: Summary of field investigations undertaken on the Subject Lands

Field Investigation	Date	Personnel (BioLogic/MTE)
Ecological Land Classification (preliminary)	May 23, 2014	Dylan Morse
Ecological Land Classification (update)	July 24, 2014	Will Huys, certified to complete ELC
Butternut Health Assessment	July 27, 2014	Will Huys, BHA #222
Butternut Health Assessment	October 1, 2015	Will Huys, BHA #222
Auditory Amphibian Breeding Survey	May 8, 2015	Will Huys
Auditory Amphibian Breeding Survey	July 5, 2015	Will Huys
Spring Botanical Inventory	June 15, 2015	Will Huys
Summer Botanical Inventory	August 17, 2015	Will Huys
Fall Botanical Inventory	October 15, 2015	Will Huys
Breeding Bird Survey	June 15, 2015	Will Huys
Breeding Bird Survey	June 29, 2015	Will Huys
Spring Botanical Inventory	June 3, 2021	Will Huys
Summer Botanical Inventory	August 17, 2021	Elise Roth
Breeding Bird Survey	June 3, 2021	Will Huys
Breeding Bird Survey	June 22, 2021	Will Huys
Fall Botanical Inventory	October 14, 2021	Will Huys

3.4.1 Vegetation Communities

Ecological Lands Classification (ELC) surveys were conducted in 2014 and updated in 2021. A preliminary evaluation of vegetation within the Subject Lands was conducted by Dylan Morse, on May 23, 2014 and updated and confirmed by Will Huys on July 29, 2014. Surveys were updated in 2021 on June 3 and October 14, 2021 by Will Huys, certified to complete ELC in Ontario, using protocols outlined in the Ecological Land Classification System for Southern Ontario (Lee et al., 1998). The surveys were conducted within the area of the Subject Lands. Adjacent vegetation communities were not investigated in detail.

The vegetation surrounding the Subject Lands is predominantly forested area to the west of the Subject Lands, with residential land uses to the north and east and a golf course to the south. The golf course is also owned by the Proponent and were previously investigated in 2014 & 2015 as part of the ISR (BioLogic, 2015). These additional lands are not currently proposed for development, therefore they were not investigated in detail in 2021.

The Subject Lands are comprised of two primary natural vegetation communities with cultural inclusions, as well as an Agricultural and an Anthropogenic Disturbed Area (former farmstead) (Figure 2):

- Community 1 is classified as a Dry-Fresh Sugar Maple-Beech Deciduous Forest (FOD5-2). Sugar Maple is the dominant canopy species in this forest, along with Beech. The understorey consists of Dogwood, Sumac and Multiflora Rose. The ground layer consists of species such as Horsetail, Garlic Mustard and Skunk Cabbage. There are also two inclusions associated with Community 1. Inclusion 1a is a Mineral Cultural Thicket Ecosite (CUT1) which has a dominant canopy species consisting of Ash and Black Walnut and a sub-canopy consisting of Buckthorn, Hawthorn, Sumac and Dogwood. The understorey

consists of Buckthorn, Hawthorn, Multiflora Rose and Honeysuckle. The ground layer consists of Horsetail, Goldenrod, Garlic Mustard and Mayapple. Inclusion 1b is also a Mineral Cultural Thicket Ecosite (CUT1).

- Community 2 is classified as an Organic Thicket Swamp (SWT3). White Ash and White Willow are the dominant canopy species in this seepage-fed thicket swamp. The understorey consists of Common Buckthorn, Dotted Hawthorn, Multiflora Rose and Common Elderberry. The ground layer consists of Skunk Cabbage, Spotted Joe-pye-weed and Common Boneset.

The agricultural portion of the Subject Lands is currently used for sod production. The former farmstead buildings in polygon A1 (Figure 2) were removed in 2017 due to poor or hazardous condition following the partial collapse of the barn into the silo.

3.4.2 Flora Inventory

Seasonal floristic surveys were undertaken in 2015 as well as on June 3, 2021 by Will Huys, August 17, 2021 by Elise Roth, and October 14, 2021 by Will Huys. The status of all plant species is based on the provincial NHIC database (MNR, 2020) and the list of vascular plants for the Carolinian Zone (Oldham, 2017).

A total of 121 vascular plant species were recorded on the Subject Lands, of which 70 or 57.85% are native to Ontario and 51 or 42.15% are introduced (Appendix B-1). Five Butternut trees were located on the upper portion of the wooded slope, approximately 65m north of the Development Area. All trees were assessed as Category 1, non-retainable, in 2015 following the provincial Butternut Health Assessment protocol with results submitted to MNR. Two locally-rare plant species, Swamp Agrimony and Purple Joe Pye Weed, were observed within the SWT3 community. No other plant Species at Risk and no rare plants were observed on the Subject Lands during site investigations.

3.4.3 Breeding Bird Surveys

Breeding bird surveys were conducted by Will Huys on the Subject Lands on June 15th and 29th, 2015, and June 3rd and 22nd, 2021. Surveys in 2021 consisted of 10-minute point counts at 2 stations along the edge of Communities 1 and 2 accompanied by an area search along the perimeter of the Development Area. The highest level of breeding evidence was recorded for each species using codes from the Ontario Breeding Bird Atlas (Cadman et al. 2007). Surveys began within half an hour of sunrise and were completed by 10am.

A total of 15 species were observed within the Subject Lands during breeding bird surveys. All species observed were secure (S5) or apparently secure (S4) breeding species in Ontario. A complete list of bird species observed is provided in Appendix B-2.

No Protected Species were detected during the 2021 breeding bird surveys. However, field investigations in 2015 identified 40-45 active Barn Swallow [THR] nests within the barn located in polygon A1 on the westerly portion of the Subject Lands. In 2017, three corners of the barn collapsed causing the barn to lean onto the silo, and compromising the integrity of both structures. Consequently, it is estimated that approximately 75% of the suitable nesting habitat for Barn Swallow was lost due to this unintended event. The remainder of the barn and adjacent structures within the farmstead were demolished to remove the hazard. Compensation for the removal of a portion (25%) of the original Barn Swallow [THR] habitat will be implemented in accordance with Ontario Regulation 242.08 Section 23.5 of the ESA.

3.4.4 Mammal Habitat

The Subject Lands contain a mature deciduous woodland which is assumed to provide suitable maternity roosting habitat for bats. Targeted surveys were not undertaken as the development has been designed to avoid direct impacts to the woodland.

No dens of fur-bearing mammals were observed on the Subject Lands.

3.4.5 Incidental Wildlife Observations

Four mammals and five invertebrates were observed incidentally on the Subject Lands during other targeted field investigations. These species were: Gray Squirrel, Raccoon, White-tailed Deer, Striped Skunk, Black Saddlebags, Common White-tail, Little Bluet, Cabbage White and Monarch. Monarch is listed as Special Concern on the SARO List, and Endangered on Schedule 1 of the federal Species at Risk Act.

3.5 Significant Wildlife Habitat

MNRF Significant Wildlife Habitat (SWH) Criteria Schedules for Ecoregion 7E (January 2015) use ELC ecosite codes and habitat criteria (eg. Size of ELC polygon, location of ELC polygon) to identify candidate significant wildlife habitat. A complete assessment of candidate SWH is provided in Appendix B-3. Where SWH has been confirmed through results of targeted field investigations (e.g. confirmed habitat use) this has been noted below.

3.5.1 Subject Lands

Candidate SWH was identified within the Subject Lands, associated with the woodland and swamp thicket (Communities 1 and 2), as follows:

Seasonal Concentration of Animals

- Bat Maternity Colonies (candidate) in woodland community FOD6
- Migratory Butterfly Stopover Areas (candidate) in cultural communities CUT1 and along the edge of woodland community FOD6
- Land Bird Migratory Stopover Areas (candidate) in woodland community FOD6

Specialized Habitats of Wildlife

- Seeps and springs (candidate) in swamp thicket SWT3

3.5.2 Adjacent Lands (within 120m of the Subject Lands)

Candidate SWH was identified within the Adjacent Lands, associated with the golf course area and the surrounding woodlands as follows:

Seasonal Concentration of Animals

- Bat Maternity Colonies (candidate) in woodland community FOD6
- Migratory Butterfly Stopover Areas (candidate) in cultural communities and along the edge of woodland community FOD6
- Land Bird Migratory Stopover Areas (candidate) in woodland community FOD6

Habitats for Species of Conservation Concern

- Special Concern and Rare Wildlife Species: Eastern Wood-pewee (candidate), Wood Thrush (candidate) and Broad Beech Fern (candidate) in adjacent woodlands

3.6 Habitat for Threatened and Endangered Species

Habitat potential for Protected Species on the Subject Lands was evaluated using a combination of desktop review, satellite photo interpretation and results of field investigations.

Suitable habitat is present within the Subject Lands for the following Threatened or Endangered Species:

Butternut [THR]: There were five confirmed Butternut [THR] trees identified within woodland community FOD6 on the north and northwest sides of the Subject Lands, all of which were assessed as non-retainable and are greater than 25m from the Development Area.

Little Brown Myotis, Northern Myotis, and Tri-coloured Bat [END]: Potential tree roosting habitat for Endangered bats is assumed to be present in woodland community FOD6 on the Subject Lands outside of the Development Area.

Barn Swallow [THR]: Forty Barn Swallow nests were observed in 2015 within the barn in community A1 on the Subject Lands. Due to the age and disrepair of the structure, three-quarters of the nest sites are assumed to have been removed when three corners of the building collapsed in 2017. Compensation for the removal of the remaining suitable nesting habitat (25% or 10 nests) will be implemented in accordance with Ontario Regulation 242.08 Section 23.5 of the ESA.

The remaining Threatened or Endangered species listed in Table 1 are considered absent from the Subject Lands due to lack of suitable habitat or an absence of species' observations during targeted surveys (e.g. breeding bird surveys, botanical inventory).

4.0 Natural Heritage Features Summary

A summary of significant features and functions identified on the Subject Lands and Adjacent Lands, in accordance with provincial and municipal policy, is provided in Table 3, below.

Table 3: Natural Heritage Features or Functions of the Subject Lands

Policy Category	Policy-protected Natural Heritage Feature	Description of Feature on the Subject Lands and Adjacent Lands (120m)
Provincial Policy Statement, Elgin County Official Plan and Municipality of Central Elgin Official Plan	Significant Wetlands or Significant Coastal Wetlands	<ul style="list-style-type: none"> No provincially-significant wetlands or coastal wetlands are located within 1km of the Subject Lands
	Significant Woodlands	<ul style="list-style-type: none"> Significant Woodland is present within the north and northwest area of the Subject Lands
	Significant Valleyland	<ul style="list-style-type: none"> Significant Valleyland has not been identified on the Subject Lands or Adjacent Lands. No watercourse or valley is present on the Subject Lands or Adjacent Lands.
	Significant Wildlife Habitat (SWH)	<ul style="list-style-type: none"> Candidate SWH is present on the Subject Lands for: <ul style="list-style-type: none"> Bat Maternity Colonies (candidate) in woodland community FOD6 Migratory Butterfly Stopover Areas (candidate) in cultural communities CUT1 and along the edge of woodland community FOD6 Land Bird Migratory Stopover Areas (candidate) in woodland community FOD6 Seeps and springs (candidate) in swamp thicket SWT3 Additional candidate SWH is present on the Adjacent Lands for: <ul style="list-style-type: none"> Special Concern species Eastern Wood-Pewee, Wood Thrush and Broad Beech Fern in woodlands beyond the Subject Lands

	Areas of Natural and Scientific Interest	<ul style="list-style-type: none"> The Port Stanley Till earth science ANSI is present on Adjacent Lands, north of the property limit and across Lake Line
	Fish Habitat	<ul style="list-style-type: none"> Fish habitat is absent from the Subject Lands and Adjacent Lands
	Habitat of Threatened and Endangered Species	<ul style="list-style-type: none"> 5 Butternut trees [THR] confirmed within the Subject Lands, however these are assessed as non-retainable and are located > 25m from the Development Area. Barn Swallow (THR) nests confirmed in a barn within the Subject Lands in 2015. Potential habitat for three Endangered bat species is assumed to be present within woodlands on the Subject Lands and Adjacent Lands outside of the Development Area
KCCA Regulations	Wetlands	<ul style="list-style-type: none"> The SWT3 community on the Subject Lands does not meet the definition of a regulated wetland per the <i>Conservation Authorities Act, 1990</i> as it lacks a connection with a surface watercourse. Lands periodically soaked and used for agricultural purposes and no longer exhibit wetland characteristics are also excluded from the definition of a wetland per the <i>Conservation Authorities Act, 1990</i>

	Hazard Lands	<ul style="list-style-type: none"> The slope in the north of the Subject Lands may be regulated as a hazard feature. The slope stability analysis (EXP, 2021) provides recommendations for hazard mitigation.
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5.0 Project Description

The proposal is to establish 93 single detached dwellings with associated future municipal streets on the Subject Lands. Sanitary discharge will be directed to an upgraded sewer pipe connecting to a combined sewer in the Carlow Road R.O.W. that conveys flows to an existing pumping station. The pumping station has been confirmed by the Municipality to have sufficient capacity for additional flows, which are pumped up Lake Line and ultimately discharged into a treatment facility on Scotch Line. Water servicing will be obtained from an existing watermain in the Lake Line R.O.W., through a new 150 mm diameter connection.

Under pre-development conditions there are no storm sewers on site. As part of the development, a storm sewer system will be installed to collect and convey minor runoff from the Subject Lands to a proposed dry stormwater management (SWM) pond located southeast of the site. Minor storm (5-year) and major storm (100-year) runoff will be conveyed to the same SWM pond by site grading. A portion of Marr Drain will be relocated to the servicing easement located behind lots 47-53. The proposed SWM pond will discharge through an oil and grit separator for quality control to the downstream, open channel portion of Marr Drain.

Basement construction is not recommended due to high groundwater levels and soil conditions. Stiffened slab-on-grade construction and foundation pre-loading are recommended as part of the design and construction of the residential homes (Trow, 2007).

A 6m development setback from the toe of the slope will be implemented in order to comply with the Erosion Hazard Limit (EXP, 2021) and provide a buffer to the Significant Woodland. Within this setback, a 2m wide walking trail with a permeable surface is proposed which will be located between the development area and the woodland.

An overlay of the proposed development on the natural heritage features of the Subject Lands is provided in Figure 5.

6.0 Potential Impacts and Mitigation Recommendations

Based on the completed site investigations and the assessment of significance, the Subject Lands contain Significant Woodland, have candidate Significant Wildlife Habitat and provide habitat for Butternut [END], Barn Swallow [THR] and may provide habitat for three Endangered bat species. A earth science ANSI, Port Stanley Till, is present on the Adjacent Lands to the north. In accordance with relevant municipal policy, potential direct and indirect impacts to these features must be addressed through avoidance, mitigation or compensation measures.

6.1 Significant Woodland

Communities 1 and 2 located on the northern edge of the Subject Lands are part of a Significant Woodland, as defined by the Municipality of Central Elgin Natural Heritage System. The following mitigation and compensation measures are recommended to avoid negative impacts to this natural heritage feature:

Recommendation 1: In order to protect the woodland feature and its functions, the development limit should be set back 6m from the dripline of the Significant Woodland. This 6m setback is generally coincident with the Erosion Hazard Limit (development setback for slope stability; EXP, 2021; Figure 4).

Recommendation 2: Flag the limits of the Significant Woodland and vegetation communities to be retained prior to construction to avoid inadvertent encroachment.

Recommendation 3: Incorporate naturalized plantings with native tree and shrub species in the setback area between the proposed development (e.g. walking trail) and the Significant Woodland to provide a natural buffer to the woodland.

Recommendation 4: Invasive plant species that are identified along the woodland edge or within the proposed naturalization area should be removed and best management practices for limiting the spread of floral invasive species should be followed during development.

Recommendation 5: Areas of exposed soil following construction should be stabilized with vegetation or other suitable ground cover, avoiding plant species with the potential to invade the Significant Woodland. For information on invasive, non-native plant species in southwestern Ontario refer to: <http://thamesriver.on.ca/wp-content/uploads/InvasiveSpecies/Invasive-plants.pdf>

6.2 Significant Wildlife Habitat

The following candidate (unconfirmed) SWH is present or assumed to be present on the Subject Lands or Adjacent Lands based on woodland size and characteristics.

- Bat Maternity Colonies (candidate) in woodland community FOD6
- Migratory Butterfly Stopover Areas (candidate) in cultural communities CUT1 and along the edge of woodland community FOD6
- Land Bird Migratory Stopover Areas (candidate) in woodland community FOD6
- Seeps and springs (candidate) in swamp thicket SWT3
- Habitat for Special Concern or Rare Wildlife Species: Eastern Wood-pewee (candidate), Wood Thrush (candidate) and Broad Beech Fern (candidate) in woodlands on the Adjacent Lands

All SWH is associated with the Significant Woodland or woodland edge located in the north of the Subject Lands, outside the Development Area. Direct impacts to SWH in the adjacent woodland will

be avoided as the Development Area on the Subject Lands will be set back 6m from the woodland edge.

Wildlife may also experience disturbance during construction when crossing roads or moving through active construction areas. Timing restrictions on vegetation removal are recommended to avoid disturbance to wildlife that may be using natural areas on the site, including breeding birds and bats. Nesting migratory birds are protected under the *Migratory Birds Convention Act* (MBCA), 1994. 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, of species protected under the Migratory Birds Convention Act, 1994 and/or Regulations under that Act. Some MBCA-protected species, such as Killdeer, may make use of un-maintained areas as they frequently make nests on the ground in construction sites and other disturbed areas.

Mitigation measures to avoid impacts to wildlife and wildlife habitat are recommended as follows:

Recommendation 6: Avoid vegetation clearing and site disturbance during the migratory bird breeding season (April to August 31) to ensure that no active nests will be removed or disturbed, in accordance with the Migratory Birds Convention Act and/or Regulations under that Act. If works are proposed within the breeding season, prior to any vegetation removal or ground disturbance, the area should be checked for nesting birds by a qualified professional. If there are any nesting birds, works within the nesting area should not proceed until after August 31 or the nest is confirmed inactive.

Recommendation 7: Where select tree removal is proposed, outside the Significant Woodland, removal of trees (> 10cm DBH) should occur outside the bat maternity roost period, which is approximately May 1 to September 31. This avoidance measure includes dead standing trees.

Recommendation 8: If an animal enters the work site, work at that location will stop and the animal should be permitted to leave un-harassed. If there are repeat observations of wildlife in the work area, barrier fencing (e.g. silt fence) may be used to direct wildlife away from active construction and toward natural areas.

6.3 Habitat of Endangered or Threatened Species

Based on the review of background data sources (Table 1) and results of field investigations, there is potentially suitable habitat for Bobolink [THR] and Eastern Meadowlark [THR] and confirmed habitat for Butternut [THR]. There is also evidence that the Subject Lands once supported Barn Swallow [THR] in the barn that was removed, partly due to natural causes. Potential habitat is also present, but unconfirmed, on the Adjacent Lands. Based on this, it is our opinion that the proposed development will avoid impacts to species protected under the ESA (2007). Mitigation measures for wildlife and wildlife habitat are recommended, as noted, with the following additions:

Recommendation 9: Any observation of a Protected Species should be reported to MECP. Protected Species should not be handled, harassed or moved unless they are in immediate danger.

Recommendation 10: Barn Swallow [THR] nests were found within the previously existing structure during general field investigations in 2015. It is recommended that the project will be registered with the MNRF and compensation will be implemented as required by Section 23.5 of Ontario Regulation 242/08. In accordance with the rules in this regulation, the Proponent will install artificial Barn Swallow habitat structures under the direction of a qualified biologist. As three-quarters of the barn collapsed due to structural instability, compensation for the removal one-quarter of the remaining nest sites (10 nests) is recommended.

The compensation structure(s) must provide suitable conditions for Barn Swallow nesting by providing horizontal ledges or rough vertical surfaces with a sheltered overhang, in a location that minimizes predation, and within an area that allows the Barn Swallows to enter and exit nests freely and is capable of providing long term habitat. The amount of habitat provided by the structure must also provide a greater amount of habitat than the amount that was lost in the original building or structure. Monitoring of use of the created habitat will be completed for at least three years, and a Barn Swallow Mitigation and Restoration Record will be kept on file by the Proponent.

6.4 Groundwater and Stormwater Management

The following section summarizes potential effects and recommendations related to dewatering, stormwater management and sediment and erosion control, as described in the:

- Functional Servicing Report for Kettle Creek Subdivision (SBM, 2021), and
- Preliminary Geotechnical Investigation, Proposed Residential Development, 37719 Lake Line, Port Stanley, Ontario (Trow Associates Inc., 2007)

The site has been designed to accommodate excess overland flows during minor and major storm events, using a combination of site grading, swales, rear-yard catch basins and construction of a SWM pond. Sufficient storage has been provided in the SWM pond to meet the SWM objectives for the site.

Recommendation 11: Homeowners will be provided a Homeowner's Information Package by SBM regarding the SWM function of swales and rear-yard catch basins to encourage regular maintenance and ensure proper function of surface water drainage systems.

Recommendation 12: Due to the presence of shallow groundwater and soil conditions, foundation construction for the single family homes is recommended to be pre-loaded, stiffened slab-on-grade. Localized base soil improvements may be required in wet, silty soils, such as the addition of crushed stone bedding with a geotextile.

Recommendation 13: Groundwater is expected in service trench excavations 2m deep or greater, but can likely be managed using conventional pumping techniques. Where the groundwater removal rate exceeds 50,000 L per day a Permit to Take Water must be obtained from the Ministry of Environment, Conservation and Parks.

6.5 Indirect Impacts

Natural heritage features may also experience indirect effects during construction, such as sedimentation and erosion. Additional indirect impacts on natural features will be mitigated through the implementation of standard environmental protection measures, discussed below.

Recommendation 14: [Derived from Functional Servicing Report for Kettle Creek Subdivision (SBM, 2021)] Sediment and erosion control measures have been developed to alleviate the off-site migration of sediments by incorporation of various best management practices and control measures. Such controls may include but are not limited to silt fencing, silt sacks for inlet grate protection (catch basins, and catch basin maintenance holes), tree preservation fencing and erosion control blanket treatment of significant fill/cut slopes. Suitable precautions should be undertaken in maintaining and monitoring these controls during the construction phase. The control measures to be implemented on site should include:

- Protect all exposed surfaces and control all runoff during construction;
- Maintain erosion control measures during construction;
- All collected sediment to be disposed of at an approved location;
- Minimize area disturbed during construction;
- All dewatering to be disposed of in an approved sedimentation basin;

- Protect all catch basins, maintenance holes and pipe ends from sediment intrusion with geotextile fabric (Terrafix 270R), silt sacks, or approved equal;
- Keep all sumps clean during construction;
- Prevent wind-blown dust;
- Straw bales to be used in localized areas as directed by the engineer during construction for works which are in or adjacent to flood lines, fill lines and hazardous slopes;
- Straw bales to be terminated by rounding bales to contain and filter runoff;
- Contractor to supply sediment erosion control measures and emergency plan (including emergency contacts) in case of SEC measures failure, extreme weather conditions, or spills. Any spills are to be reported to the MECP at 1-866-6638477 toll free;
- Sediment and Erosion Control measures shall be repaired without delay by the owner's contractor as instructed by the contract administrator/engineer at no expense to the owner
- On-site sediment and erosion control measures are to be reviewed and modified to meet the changing site;
- Sediment and Erosion Control measures are to be inspected weekly or following significant rainfall events;
- Obtain approval from the governing Conservation Authority prior to construction for works which are in, or adjacent to flood lines, fill lines and hazardous slopes

All of the above notes and any sediment and erosion control measures are at the minimum to be in accordance with the ministry of natural resources guidelines on sediment and erosion control for urban construction sites. Sediment and erosion control measures to be removed at completion of project (following completion of base asphalt and sod). Sediment and erosion control details and notes have been included with the Site Engineering design (Sheet 3).

Recommendation 15: Store hazardous materials away from sensitive natural features. Equipment refueling should occur a minimum of 30m away from natural features.

Recommendation 16: All disturbed areas should be re-seeded as soon as possible to maximize erosion protection and to minimize the establishment of invasive species which may spread to the adjacent Significant Woodland.

Recommendation 17: Sediment and erosion control fencing should not be removed until adequate re-vegetation and site stabilization has occurred. Additional re-vegetation plantings and/or more time for vegetation to establish may be required; however two growing seasons are typically sufficient to stabilize most sites.

Recommendation 18: Soil stockpiles should be established on the tableland in locations where natural drainage is away from the valleyland and associated wetlands. If this is not possible, and there is a possibility of any stock pile slumping and moving toward sensitive natural features, these stockpiles should be protected with robust sediment and erosion control. Access to the stockpile should be confined to the up-gradient side. The stockpile locations should be reviewed at detailed design.

Recommendation 19: Regular cleanup of the Subject Lands must be completed during construction and post-construction to ensure the adjacent natural heritage features are not degraded.

7.0 Conclusion

We have evaluated the proposal to establish 93 single detached dwellings on the Subject Lands and determined that the potential impacts to natural heritage features on Adjacent Lands have been avoided and/or mitigated with the recommendations herein and in the slope stability report (EXP, 2021). Provided the above recommendations for mitigation are followed during all stages of proposed construction, no significant impacts to the adjacent natural heritage features are expected. MTE seeks comments from the Municipality of Central Elgin, Elgin County and KCCA concerning the contents of this report. Formal comments may be submitted on behalf of the client to MTE. Should any clarification, questions, or additional materials be needed as part of the review of this report, do not hesitate to contact us.

Yours Truly,

MTE Consultants Inc.

Victoria Schweighardt, M.E.S.
Biologist
519-204-6510 ext. 2230
vschweighardt@mte85.com

Reviewed by:

Melissa Cameron, M.Sc., OALA
Senior Biologist
519-204-6510 ext. 2263
mcameron@mte85.com

9.0 References

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Figures



Figure 1: Site Location
(Elgin County Mapping, 2015)



0 1,000
Scale 1:50,000
Key Plan

* Locations are approximate and should be verified by survey where necessary.
Print on 11X17, Landscape Orientation
0 160
Scale 1:8000
October 2021 MTE Project#: 48957-100



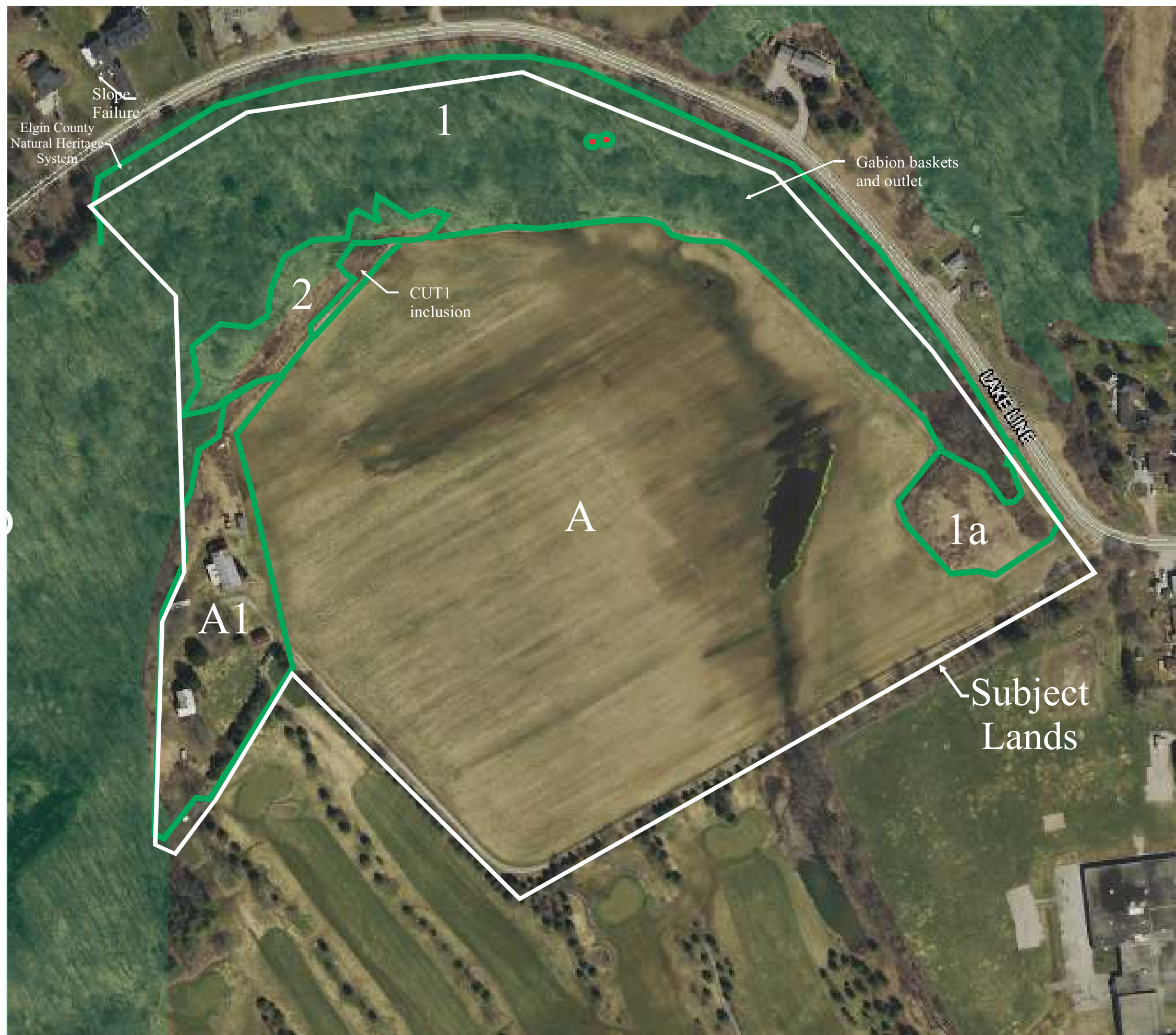


Figure 2: Vegetation Communities
(Elgin County Mapping, 2015)



0 1,000
Scale 1:50,000
Key Plan

- Legend**
- A - Agricultural
 - A1 - Anthropogenic Disturbed Area
 - 1 FOD6 Fresh-Moist Sugar Maple Deciduous Forest (2.8ha)
 - 1a CUT1 Mineral Cultural Thicket Ecosite (0.3ha)
 - 2 SWT3 Organic Thicket Swamp (seepage fed) (0.5ha)

- - Significant Woodland
- - Category 1 Butternut

* Locations are approximate and should be verified by survey where necessary.
Print on 11X17, Landscape Orientation
0 40
Scale 1:2000
October 2021 MTE Project#: 48957-100



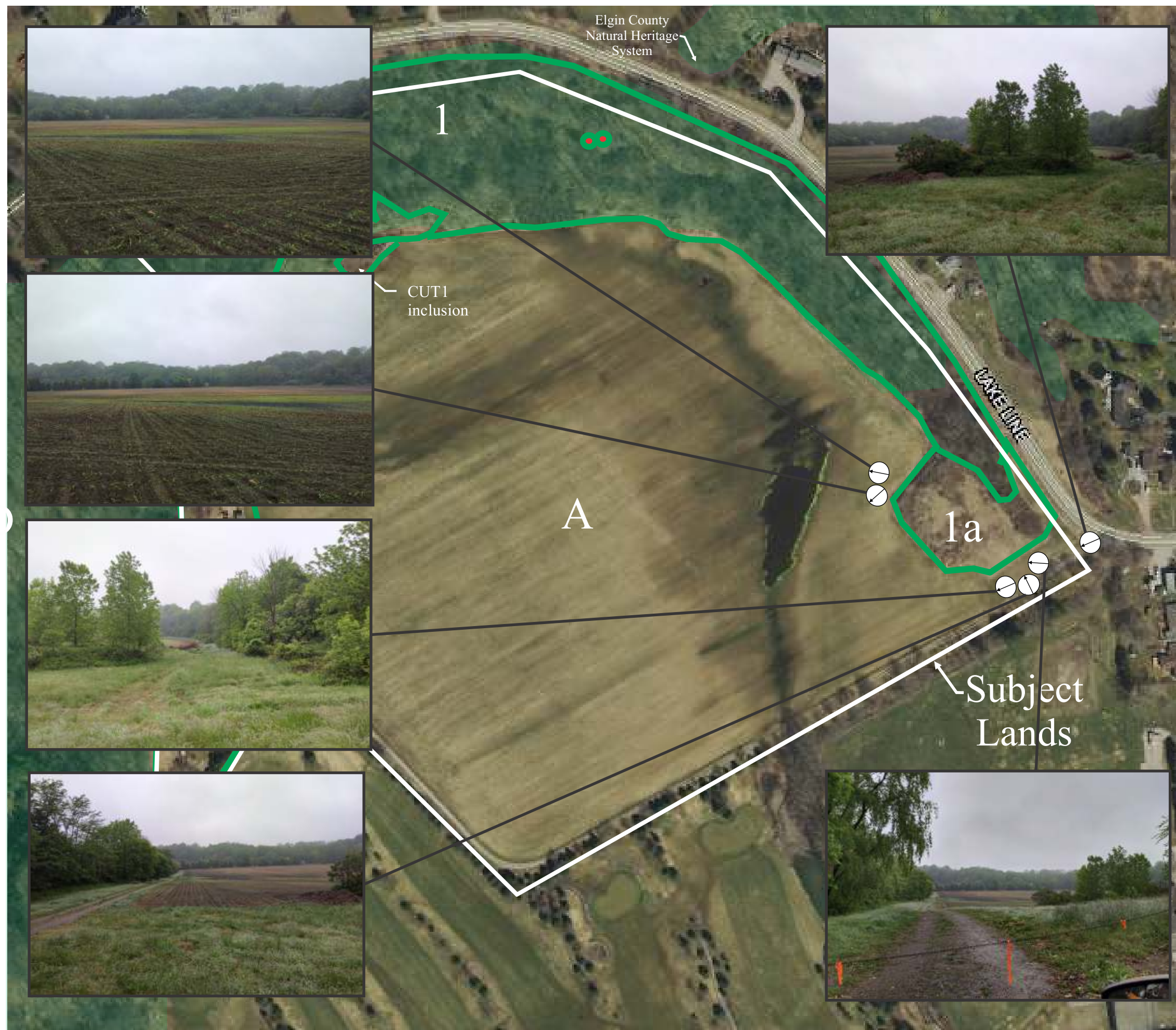


Figure 3: Site Photos
(Elgin County Mapping, 2015)



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Scale 1:50,000
Key Plan

Legend

- A - Agricultural
- A1 - Anthropogenic Disturbed Area
- 1 FOD6 Fresh-Moist Sugar Maple Deciduous Forest (2.8ha)
- 1a CUT1 Mineral Cultural Thicket Ecosite (0.3ha)
- 2 SWT3 Organic Thicket Swamp (seepage fed) (0.5ha)

- - Significant Woodland
- - Category 1 Butternut

* Locations are approximate and should be verified by survey where necessary.

Print on 11X17, Landscape Orientation

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Scale 1:2000

October 2021

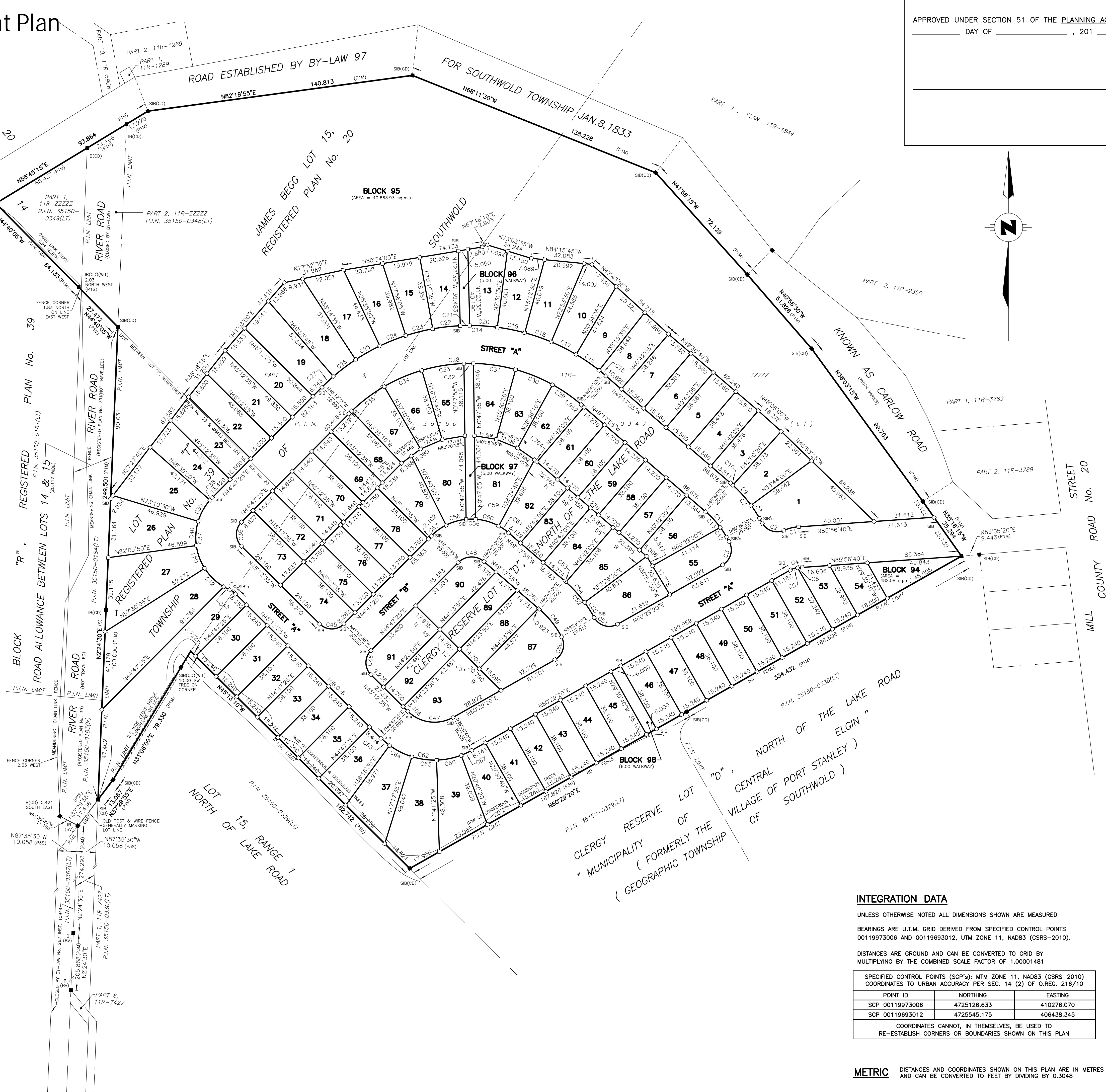
MTE Project#: 48957-100



Figure 4: Development Plan

CURVE TABLE

CURVE	RADIUS	ARC	CHORD	BEARING
C1	23.750	8.025	7.987	N76°15'49"E
C2	9.000	13.180	12.033	N71°27'52"W
C3	9.000	14.137	12.728	N15°29'18"E
C4	10.000	4.443	4.406	N73°12'58"E
C5	10.000	4.443	4.406	N73°12'58"E
C6	10.000	4.443	4.406	N73°12'58"E
C7	70.000	24.174	24.054	N39°24'19"W
C8	70.000	8.254	8.250	N32°53'23"W
C9	70.000	14.328	14.303	N42°07'54"W
C10	70.000	1.592	1.592	N48°38'49"W
C11	50.000	17.267	17.182	N39°24'19"W
C12	50.000	6.063	6.059	N32°59'08"W
C13	50.000	11.204	11.181	N42°52'45"W
C14	110.000	164.936	149.915	N87°44'45"E
C15	110.000	4.675	4.675	N50°30'59"W
C16	110.000	14.752	14.740	N55°34'33"W
C17	110.000	14.752	14.741	N63°15'34"W
C18	110.000	14.752	14.741	N70°56'36"W
C19	110.000	14.752	14.741	N78°37'38"W
C20	110.000	14.623	14.612	N86°16'39"W
C21	110.000	5.000	5.000	N88°36'42"E
C22	110.000	14.566	14.555	N83°30'57"E
C23	110.000	14.695	14.684	N75°53'43"E
C24	110.000	14.695	14.684	N68°14'27"E
C25	110.000	14.695	14.685	N60°35'11"E
C26	110.000	14.696	14.685	N52°55'55"E
C27	110.000	8.283	8.281	N46°56'51"E
C28	90.000	134.949	122.657	N87°44'45"E
C29	90.000	18.469	18.436	N55°10'39"W
C30	90.000	21.093	21.045	N67°46'13"W
C31	90.000	22.557	22.498	N81°39'53"W
C32	90.000	5.001	5.000	N89°33'47"E
C33	90.000	22.561	22.502	N80°47'24"E
C34	90.000	21.633	21.581	N66°43'21"E
C35	90.000	21.634	21.582	N52°57'01"E
C36	9.000	14.137	12.728	N0°12'35"W
C37	30.000	58.202	49.494	N10°47'17"W
C38	30.000	1.729	1.729	N43°08'19"E
C39	30.000	12.911	12.811	N29°09'30"E
C40	30.000	12.911	12.812	N4°30'02"E
C41	30.000	12.912	12.812	N20°09'31"W
C42	30.000	14.189	14.057	N46°02'16"W
C43	30.000	3.550	3.548	N62°58'35"W
C44	10.000	3.692	3.672	N55°47'17"W
C45	9.000	14.137	12.728	N69°47'25"E
C46	9.000	14.137	12.728	N0°12'35"W
C47	20.000	25.936	24.157	N82°21'39"W
C48	10.000	14.994	13.629	N67°44'45"E
C49	50.000	18.547	18.441	N38°40'18"W
C50	9.000	13.907	12.564	N16°13'18"E
C51	9.000	14.257	12.812	N74°07'52"W
C52	70.000	25.103	24.970	N39°01'29"W
C53	70.000	1.076	1.076	N48°51'29"W
C54	70.000	14.520	14.494	N42°28'30"W
C55	70.000	9.507	9.500	N32°38'29"W
C56	30.000	44.983	40.886	N87°44'45"E
C57	30.000	9.712	9.670	N54°03'53"E
C58	30.000	11.045	10.983	N73°53'12"E
C59	30.000	5.006	5.000	N89°12'51"E
C60	30.000	12.794	12.697	N73°47'17"W
C61	30.000	6.426	6.413	N55°26'05"W
C62	40.000	51.872	48.313	N82°21'39"W
C63	40.000	5.945	5.939	N49°28'02"W
C64	40.000	13.252	13.192	N63°12'58"W
C65	40.000	13.252	13.192	N82°11'54"W
C66	40.000	13.252	13.192	N78°49'09"E
C67	40.000	6.171	6.165	N64°54'29"E
C68	90.000	2.001	2.001	N45°25'38"E



APPROVED UNDER SECTION 51 OF THE PLANNING ACT THIS
DAY OF _____, 2011.

PLAN 11M-

I CERTIFY THAT THIS PLAN IS REGISTERED IN THE LAND
REGISTRY OFFICE FOR THE LAND TITLES DIVISION OF MIDDLESEX
AT _____ O'CLOCK ON THE _____ DAY OF _____
2011 AND ENTERED IN THE PARCEL REGISTER
FOR P.I.N. _____ AND THE REQUIRED
CONSENTS ARE REGISTERED AS PLAN DOCUMENT No. _____

REPRESENTATIVE FOR LAND REGISTRAR FOR THE
LAND TITLES DIVISION OF ELGIN (No. 11)

THIS PLAN IS COMPRISED OF PART OF P.I.N.

PART OF

PLAN OF SUBDIVISION
OF PART OF
CLERGY RESERVE LOT "D"
NORTH OF THE LAKE ROAD
AND PART OF
JAMES BEGG LOTS 14 & 15
REGISTERED PLAN No. 20 (MIDD)
AND PART OF
ROAD ALLOWANCE BETWEEN LOTS
14 & 15
NORTH OF THE LAKE ROAD
AND ALL OF
LOT "T", REGISTERED PLAN No. 39

IN THE
TOWNSHIP OF SOUTHWOLD
(GEOGRAPHIC TOWNSHIP OF SOUTHWOLD)
COUNTY OF ELGIN

SCALE 1:1000 (Metric)
(SCALE IN METRES)
TERRY P. DIETZ
ONTARIO LAND SURVEYOR

LEGEND

- DENOTES SURVEY MONUMENT SET
- DENOTES SURVEY MONUMENT FOUND
- SIB DENOTES STANDARD IRON BAR
- SSIB DENOTES SHORT STANDARD IRON BAR
- IB DENOTES IRON BAR
- RIB DENOTES ROUND IRON BAR
- CC DENOTES CUT CROSS
- OU DENOTES ORIGIN UNKNOWN
- SCP DENOTES SPECIFIED CONTROL POINT
- WIT DENOTES WITNESS
- M DENOTES MEASURED
- S DENOTES SET
- CD DENOTES CALLON DIETZ, O.L.S.'s
- BV DENOTES BRIAN VAUGHAN SURVEYING LIMITED, O.L.S.
- P1 DENOTES PLAN 11R-11R-ZZZZZ

NOTES

TIES TO BUILDINGS ARE AT RIGHT ANGLES TO THE BOUNDARY LINES UNLESS OTHERWISE INDICATED.

MONUMENT NOTES

ALL SET MONUMENTS SHOWN HEREON ARE IRON BARS (IB's) UNLESS OTHERWISE NOTED.

OWNER'S CERTIFICATE

THIS IS TO CERTIFY THAT:

- LOTS 1 to 93, BOTH INCLUSIVE, BLOCKS 94 to 98 THE STREETS, NAMELY STREET "A" & STREET "B" HAVE BEEN LAID OUT IN ACCORDANCE WITH MY INSTRUCTIONS.
- THE STREETS ARE HEREBY DEDICATED TO THE CORPORATION OF THE TOWNSHIP OF SOUTHWOLD AS PUBLIC HIGHWAYS.

CLIENT

DATE

NAME

I HAVE THE AUTHORITY TO BIND
THE CORPORATION

SURVEYOR'S CERTIFICATE

I CERTIFY THAT:

- THIS SURVEY AND PLAN ARE CORRECT AND IN ACCORDANCE WITH THE SURVEYS ACT, THE SURVEYORS ACT AND THE LAND TITLES ACT AND THE REGULATIONS MADE UNDER THEM.
- THE SURVEY WAS COMPLETED ON THE

PRELIMINARY - NOT MONUMENTED

DATE

TERRY P. DIETZ
ONTARIO LAND SURVEYOR

INTEGRATION DATA

UNLESS OTHERWISE NOTED ALL DIMENSIONS SHOWN ARE MEASURED

BEARINGS ARE U.T.M. GRID DERIVED FROM SPECIFIED CONTROL POINTS
00119973006 AND 00119693012, UTM ZONE 11, NAD83 (CSRS-2010).

DISTANCES ARE GROUND AND CAN BE CONVERTED TO GRID BY
MULTIPLYING BY THE COMBINED SCALE FACTOR OF 1.00001481

SPECIFIED CONTROL POINTS (SCP's): MTM ZONE 11, NAD83 (CSRS-2010) COORDINATES TO URBAN ACCURACY PER SEC. 14 (2) OF O.REG. 216/10		
POINT ID	NORTHING	EASTING
SCP 00119973006	4725126.633	410276.070
SCP 00119693012	4725545.175	406438.345

COORDINATES CANNOT, IN THEMSELVES, BE USED TO
RE-ESTABLISH CORNERS OR BOUNDARIES SHOWN ON THIS PLAN

METRIC

DISTANCES AND COORDINATES SHOWN ON THIS PLAN ARE IN METRES
AND CAN BE CONVERTED TO FEET BY DIVIDING BY 0.3048

C:_CDvault\DWG\2010\19-22517\Subplan(X-2443).dwg October 10, 2019

Callon & Dietz INCORPORATED

ONTARIO LAND SURVEYORS

CARLETON PLACE LONDON NORTH BAY

info@callondietz.com callondietz.com

SURVEY BY:

DRAWN BY: H.D.

FILE No: 19-22517 A

PLAN No: X-2443

1006001

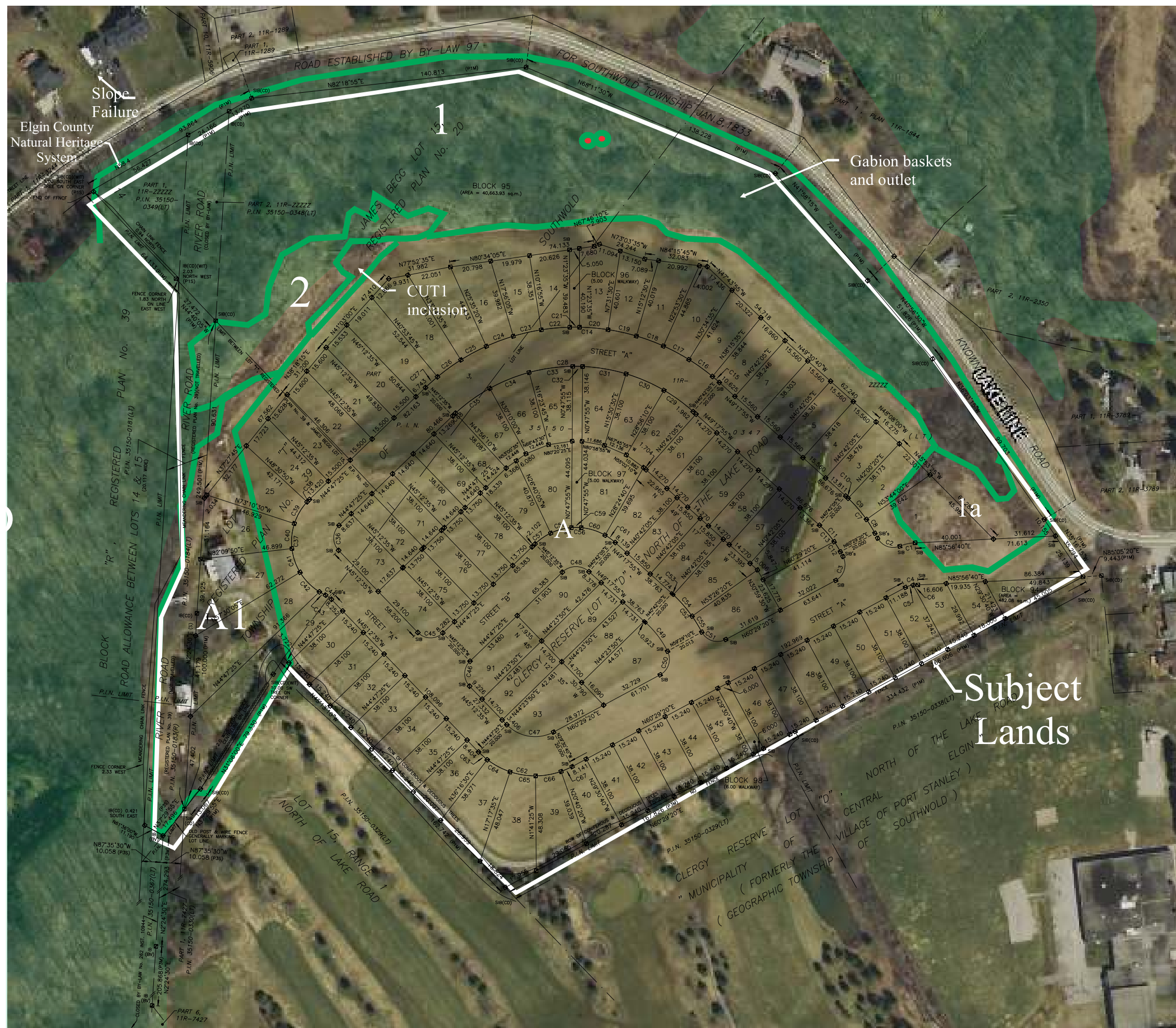


Figure 5: Development Overlay
(Elgin County Mapping, 2015)



0 1,000
Scale 1:50,000
Key Plan

Legend

- A - Agricultural
- A1 - Anthropogenic Disturbed Area
- 1 FOD6 Fresh-Moist Sugar Maple Deciduous Forest (2.8ha)
- 1a CUT1 Mineral Cultural Thicket Ecosite (0.3ha)
- 2 SWT3 Organic Thicket Swamp (seepage fed) (0.5ha)

- - Significant Woodland
- - Category 1 Butternut

* Locations are approximate and should be verified by survey where necessary.

Print on 11X17, Landscape Orientation

0 40

Scale 1:2000

October 2021

MTE Project#: 48957-100



Appendix A

Agency Consultation

Melissa Cameron

Subject: FW: Consultation Meeting - 37719 Lake Line
Location: <https://us02web.zoom.us/j/84062551719?pwd=U0UwdkFxb1p1czhReUk3NGI1bm55QT09>

Start: Wed 4/7/2021 3:00 PM
End: Wed 4/7/2021 4:00 PM
Show Time As: Tentative

Recurrence: (none)

Organizer: Lloyd Perrin

-----Original Appointment-----

From: Lloyd Perrin

Sent: Monday, March 22, 2021 1:30 PM

To: Lloyd Perrin; McCoomb, Jim; james glover; Kevin Moniz; 'Joe Gordon'; Nick Dyjach; Nancy Pasato; blima@elgin.ca; Matthew Statema; Chris McDonough

Subject: FW: Consultation Meeting - 37719 Lake Line

When: Wednesday, April 7, 2021 3:00 PM-4:00 PM (UTC-05:00) Eastern Time (US & Canada).

Where: <https://us02web.zoom.us/j/84062551719?pwd=U0UwdkFxb1p1czhReUk3NGI1bm55QT09>

Good afternoon,

The following is a Zoom meeting invite to discuss a proposal at 37719 Lake Line on Wednesday April 7th from 3:00 – 4:00 PM. A previous consultation meeting was held in December 2019 to discuss the proposal and it is the intention of this meeting to allow for the individuals who are new to the file to get up to speed and ensure that the applicant is aware of all the materials that will be required as part of their complete submission. The materials that were submitted along with the consultation request form are attached. If you have any questions, please do not hesitate to ask.

Regards,

KEVIN McCLURE, MCIP RPP Planner

Central Elgin Planning Office | Planning & Building Services Dept.

9 Mondamin Street, St. Thomas, Ontario N5P 2T9

e. kmccclure@stthomas.ca

t. 519-631-1680 ext: 4164

t. 519-633-2560

f. 519-633-6581



-----Original Appointment-----

From: Lloyd Perrin

Sent: Monday, March 22, 2021 11:53 AM

To: Lloyd Perrin; McClure, Kevin

Subject: Consultation Meeting - 37719 Lake Line

When: Wednesday, April 7, 2021 3:00 PM-4:00 PM (UTC-05:00) Eastern Time (US & Canada).

Where: <https://us02web.zoom.us/j/84062551719?pwd=U0UwdkFxb1p1czhReUk3NGI1bm55QT09>

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Lloyd Perrin is inviting you to a scheduled Zoom meeting.

Join Zoom Meeting

<https://us02web.zoom.us/j/84062551719?pwd=U0UwdkFxb1p1czhReUk3NGI1bm55QT09>

Meeting ID: 840 6255 1719

Passcode: 845800

One tap mobile

+16473744685,,84062551719# Canada

+16475580588,,84062551719# Canada

Dial by your location

+1 647 374 4685 Canada

+1 647 558 0588 Canada

+1 778 907 2071 Canada

+1 204 272 7920 Canada

+1 438 809 7799 Canada

+1 587 328 1099 Canada

Meeting ID: 840 6255 1719

Find your local number: <https://us02web.zoom.us/u/kbBrR03A1r>



September 9, 2021

MTE File No.: 48957-100

Kevin McClure, Planner Central Elgin Planning Office Planning & Building Services Dept. 9 Mondamin Street, St. Thomas, ON N5P 2T9 Email: kmccclure@stthomas.ca	Jim McCoomb, Manager of Planning Services Central Elgin Planning Office Planning & Building Services Dept. 9 Mondamin Street, St. Thomas, ON N5P 2T9 Email: jmccoomb@stthomas.ca
Lloyd Perrin, Director of Asset Management/ Development Services Municipality of Central Elgin 450 Sunset Drive, Elgin County Administration Building St. Thomas, Ontario N5R 5V1 Email: LPerrin@centralelgin.org	Nancy Pasato, Manager of Planning Elgin County 450 Sunset Drive, Elgin County Administration Building St. Thomas, Ontario N5R 5V1 Email: npasato@ELGIN.ca
Joe Gordon, Supervisor of Planning Kettle Creek Conservation Authority 44015 Ferguson Line, St. Thomas, ON, N5P 3T3 Email: joe@kettlecreekconservation.on.ca	

Dear Mr. McClure, Mr. McCoomb, Mr. Perrin, Ms. Pasato and Mr. Gordon:

MTE has been retained by Below Me Developments (James Glover) to complete an Environmental Impact Study (EIS) for the proposed Kettle Creek Subdivision at 37719 Lake Line, Port Stanley, the Municipality of Central Elgin and Elgin County (the Subject Lands) in support of a Draft Plan of the Subdivision and Zoning By-Law amendment. An Issues Scoping Report (ISR) was previously submitted for the Subject Lands and adjacent land (BioLogic, 2015) which included a recommendation for a scoped EIS. During a pre-consultation meeting held with the Township of Central Elgin and Kettle Creek Conservation Authority on April 7, 2021, it was confirmed that an EIS was required as part of the Draft Plan application. The agreed-upon scope of the EIS in that meeting was to build on the ISR (BioLogic, 2015) and incorporate life science inventories from 2015 and 2021 to document existing natural heritage features and functions on the Subject Property and adjacent lands, evaluate potential impacts, and recommend appropriate avoidance (e.g. setbacks), mitigation and enhancement measures to protect the natural heritage features.

The 12.8 ha Subject Lands consist of an active sod farm agricultural lands as well as forested slopes, which are part of the Elgin County natural heritage system [Figure 1]. The Adjacent Lands include the Lake Line Right-of-way (R.O.W.) to the north, Kettle Creek Golf and Country Club and a Public school to the south, and the River Road R.O.W. to the west. Per the Official Plan of Central Elgin, the Subject Lands have a land use designation of residential in the farmed portion and natural heritage/significant woodland on the forest slopes (Schedule G) and are zoned OS2-29 and OS2-30 (Open Space). The entire Subject Lands are within the area regulated by Kettle Creek Conservation Authority under Ontario Regulation 181/06: Development, Interference with Wetlands and Alterations to Shorelines and Watercourses.

The proposal is to establish 79 single detached lots and 9 semi-detached lots on the Subject Lands, with servicing (water) from a combined sewer in the Carlow Road R.O.W., that is directed to an existing pumping station that ultimately pumps the flows up Lake Line and discharged into the treatment facility on Scotch Line. The proposed area of development is confined to the existing agricultural portions of the Subject Lands.

This Terms of Reference is intended to confirm the scope of natural heritage field investigations as well as the contents of the EIS report for the Subject Lands as agreed upon in the pre-consultation meeting held April 7, 2021. Revisions to the first submission of the Terms of Reference (circulated August 25, 2021) are included herein to incorporate comments provided by Kevin McClure and Nancy Pasato on August 26, 2021 [Appendix A]. The Terms of Reference were prepared with reference to the Municipality of Central Elgin Official Plan policies in Section 3.1.2 and 3.4.2, and Elgin County Official Plan Policies in Section D1.2, specifically, Policy D1.2.8.1 and Appendix B.

Proposed Field Investigations and Reporting

The following field investigations are proposed for 2021 to update data previously gathered on the Subject Lands as part of the ISR (BioLogic, 2015) to inform the current EIS. Field investigations have been scoped to the Subject Lands plus a 120 m Study Area with an emphasis on natural features directly adjacent the development proposal (woodland and thicket wetland) and in consideration of previously-collected data, as noted below:

- ELC to identify and delineate vegetation communities
- Two-season botanical inventory (spring & summer). A fall inventory is not proposed as the late-flowering species targeted during this survey period are typically plants of meadow or prairie habitats, which are absent from the Subject Lands. Data from a three-season inventory completed on the Subject Lands in 2015 (BioLogic, unpublished data) will be incorporated into the EIS.
- Breeding bird surveys (late May-early July)
- Identification of potential habitat for Protected Species (provincially endangered or threatened species), including bat maternity roost trees and fur-bearing mammal dens.
- Documentation of incidental wildlife observations and their habitats in relation to the site

Several field investigations have been excluded from the 2021 field program based on the findings of the ISR (BioLogic, 2015) and additional unpublished data gathered for the Subject Lands. Amphibian surveys were completed on the Subject Lands in 2015 (BioLogic, unpublished data). Habitat suitable for amphibian breeding (i.e. shallow standing water) was not observed within the wetland communities on the Subject Lands, therefore these surveys are not proposed for 2021. Habitat features that would concentrate snake species (e.g. candidate hibernaculum) were not documented in the ISR and there are no records of snake Species at Risk in the vicinity of the Subject Lands, therefore reptile surveys are not proposed. Migratory bird surveys are also not proposed as the development has been designed to avoid direct impacts to the woodland and stopover habitat for migratory waterfowl or shorebirds is not present on the site based ELC and the findings of the ISR. The Significant Wildlife Habitat Mitigation Support Tool (MNR, 2015) recommends avoidance of woodlands but no setback as the key mitigation measure for migratory landbirds, therefore targeted surveys would not inform the assessment of impacts.

The EIS report will include a description of existing natural heritage features using background sources and data gathered during field investigations, an assessment of natural heritage feature significance and sensitivity, including an assessment of Significant Wildlife Habitat and habitat for Species at Risk, a description of the proposed undertaking, an assessment of potential impacts, and recommendations for avoidance, mitigation or enhancement of natural heritage features to assist with the site design. Figures depicting key natural features and the proposed development on the Subject Lands and within 120m will be included with the report, along with appendices documenting data collection.

Summary

This Terms of Reference for an EIS, as agreed upon in the pre-consultation meeting on April 7, 2021, has been prepared in accordance with policies of the Municipality of Central Elgin Official Plan in Sections 3.1.2 and 3.1.4, and the Elgin County Official Plan Policy D1.2.8.1 and Appendix B. We welcome your comments and look forward to confirming these Terms of Reference.

Yours Truly,

MTE Consultants Inc.

Melissa Cameron

Senior Biologist

519-204-6510 ext. 2263

mcameron@mte85.com



Figure 1: Vegetation Communities
(Elgin County Mapping, 2006)



Scale 1:50,000
Key Plan

- Legend**
- A - Agricultural (7.93ha)
 - A1 - Anthropogenic Disturbed Area (0.55ha)
 - 1 FOD5-2 Dry-Fresh Sugar Maple-Beech Deciduous Forest (1.9ha)
 - 1a (CUT1 Mineral Cultural Thicket Ecosite 0.5ha)
 - 1b (CUW1 Mineral Cultural Woodland Ecosite 0.6ha)
 - 2 SWT2 Mineral Thicket Swamp (0.9ha)
- Significant Woodland (approximate boundary)

* Locations are approximate and should be verified by survey where necessary.
Print on 11X17, Landscape Orientation
Scale 1:2000
August 2021
MTE Project#: 48957-100



Appendix A

Agency Comments for EIS Terms of Reference (submitted Aug 25, 2021)

Melissa Cameron

From: Melissa Cameron
Sent: Thursday, August 26, 2021 2:07 PM
To: 'Nancy Pasato'; McClure, Kevin; McCoomb, Jim; 'LPerrin@centralelgin.org'; 'Joe Gordon'
Cc: 'Kevin Moniz'; james glover
Subject: RE: EIS Terms of Reference for 37719 Lake Line, Port Stanley

Hi Nancy,

Thank you for your comments! The EIS was scoped in a meeting on April 7th, 2021 and is based on the development proposal, the findings of the ISR (BioLogic 2015) and additional data gathered by BioLogic in 2015. These data were discussed in the scoping meeting, however I understand you may not have been present so I've incorporated that information into my responses below.

1. Plant Inventory – a three-season inventory was completed on the Subject Lands by BioLogic in 2015 (data unpublished). Our 2021 updated field investigations are scoped to the natural features adjacent the current development proposal (woodland and thicket) in which late-flowering species typical of open habitats, like meadow or prairie, are not expected.
2. Wildlife Inventories
 - a. Breeding bird surveys are proposed during the appropriate season (late-May/June). These have been completed.
 - b. Habitat assessments for mammals (e.g. bats, fur-bearing mammals) are included in the TOR (bullets 4 & 5).
 - c. Amphibian surveys were completed on the Subject Lands by BioLogic in 2015 (data unpublished). Habitat suitable for amphibian breeding (i.e. shallow standing water) was not observed within the wetland communities on the Subject Lands, therefore these surveys are excluded from the 2021 TOR and EIS.
 - d. There were no features observed on the Subject Lands in the ISR that would concentrate snake species (e.g. candidate hibernaculum) and no records of snake Species at Risk in the vicinity of the Subject Lands, therefore reptile surveys are not proposed.
 - e. Migratory Bird surveys are not proposed as the development has been designed to avoid direct impacts to the woodland (Candidate SWH for migratory landbird stopover) and Candidate SWH for migratory waterfowl or shorebirds is not present on the site based ELC and the on the findings of the ISR. The Significant Wildlife Habitat Mitigation Support Tool (MNR, 2015) recommends avoidance of woodlands as the key mitigation measure for migratory landbirds, and no setback beyond the feature is recommended for this particular SWH type. The potential for indirect impacts to candidate SWH will be addressed in the EIS.
 - f. Significant Wildlife Habitat and habitat for Species at Risk were assessed as part of the ISR (BioLogic, 2015) and these assessments will be updated in the 2021 EIS.
3. For 2021, our focus for field investigations is on the natural features in communities 1 and 2 and updating the data set from 2014/2015. However, the EIS will address the entire area shown as Subject Lands (including community A1) plus a 120m Study Area.

If we can provide more information to assist in your review of the Terms of Reference please let us know. We would be happy to add the information noted above to the TOR document if it satisfies the County's concerns.

Best regards,

Melissa

Client First | Right Solution | Work Together

Melissa Cameron, M.Sc., M.LA, OALA
Senior Biologist
London x2263

From: Nancy Pasato <npasato@ELGIN.ca>

Sent: Thursday, August 26, 2021 9:46 AM

To: McClure, Kevin <kmccclure@stthomas.ca>; Melissa Cameron <MCameron@mte85.com>; McCoomb, Jim <jmccoomb@stthomas.ca>; 'LPerrin@centralelgin.org' <LPerrin@centralelgin.org>; 'Joe Gordon' <joe@kettlecreekconservation.on.ca>

Cc: 'Kevin Moniz' <kevin@sbmltd.ca>; james glover <jamesgluv@gmail.com>

Subject: RE: EIS Terms of Reference for 37719 Lake Line, Port Stanley

Hello Melissa – following up from Kevin's email, having reviewed the requirements of an EIS as outlined in Appendix B of the County Official Plan, it appears much of the required information is missing from your terms of reference. For instance:

- as per clause b), a three season inventory is required – why does your terms of reference only outline two?
- as per clause c), no mention of a three season survey of bird, mammal and reptile and amphibian species and an assessment of potential wildlife species based on available habitat types, in addition to the bird survey being undertaken during the peak period for migratory and breeding bird activity (i.e. May and June for Breeding Bird Activities and May to October for peak migratory activity)
- the ToFR also does not seem to indicate that you will be reviewing the southern pointed corner (labelled as A1 on the attached drawing) – please confirm this

Please review Appendix B of the County OP and address the required items, in addition to the requirements for Central Elgin in your Terms of Reference and ultimately, within the EIS.

Thanks.

Nancy Pasato, RPP

Manager of Planning



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St. Thomas, ON. N5R 5V1
(519) 631-1460 ext.126
www.elgincounty.ca



From: McClure, Kevin <kmccclure@stthomas.ca>

Sent: August 26, 2021 9:35 AM

To: Melissa Cameron <MCameron@mte85.com>; McCoomb, Jim <jmccoomb@stthomas.ca>; 'LPerrin@centralelgin.org' <LPerrin@centralelgin.org>; Nancy Pasato <npasato@ELGIN.ca>; 'Joe Gordon' <joe@kettlecreekconservation.on.ca>

Cc: 'Kevin Moniz' <kevin@sbmltd.ca>; james glover <jamesgluv@gmail.com>

Subject: RE: EIS Terms of Reference for 37719 Lake Line, Port Stanley

Good morning Melissa,

The Municipality of Central Elgin has specific criteria in its Official Plan that speaks to Issues Scoping Reports and Environmental Impact Statements (attached). I believe that you and your client should be satisfied that there is sufficient analysis undertaken to ensure that the information submitted satisfies the requirements in the Official Plan and that there is demonstration that the proposed development and/or site alteration will not have any negative impacts on the natural heritage features and their ecological functions.

Regards,

KEVIN MCCLURE, MCIP RPP Planner

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f. 519-633-6581



From: Melissa Cameron

Sent: Wednesday, August 25, 2021 3:14 PM

To: McClure, Kevin <kmccclure@stthomas.ca>; McCoomb, Jim <jmcccoomb@stthomas.ca>; 'LPerrin@centralelgin.org' <LPerrin@centralelgin.org>; 'Nancy Pasato' <npasato@ELGIN.ca>; 'Joe Gordon' <joe@kettlecreekconservation.on.ca>

Cc: 'Kevin Moniz' <kevin@sbmltd.ca>; james glover <jamesgluv@gmail.com>

Subject: EIS Terms of Reference for 37719 Lake Line, Port Stanley

CAUTION:

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Dear Mr. McClure, Mr. McCoomb, Mr. Perrin, Ms. Pasato and Mr. Gordon:

MTE has been retained by Below Me Developments (James Glover) to complete an Environmental Impact Study (EIS) for the proposed Kettle Creek Subdivision at 37719 Lake Line, Port Stanley, the Municipality of Central Elgin and Elgin County (the Subject Lands) in support of a Draft Plan of Subdivision and Zoning By-Law amendment. An Issues Scoping Report (ISR) was previously submitted for the Subject Lands and adjacent land (BioLogic, 2015) which included a recommendation for a scoped EIS. During a pre-consultation meeting held with the Township of Central Elgin and Kettle Creek Conservation Authority on April 7, 2021, it was confirmed that an EIS was required as part of the Draft Plan application. The EIS will build on the ISR (BioLogic, 2015) and incorporate life science inventories from 2021 to document existing natural heritage features and functions on the Subject Property and adjacent lands, evaluate potential impacts, and recommend appropriate avoidance (e.g. setbacks), mitigation and enhancement measures to protect the natural heritage features.

A Terms of Reference (TOR) for the EIS is attached which describes the proposed scope of natural heritage field investigations as well as the contents of the EIS report for the Subject Lands, as agreed upon in the pre-consultation meeting held April 7, 2021.

We would appreciate your confirmation of receipt of this email and look forward to confirming the TOR with you in advance of our EIS report submission.

Sincerely,

Melissa

**Melissa Cameron, M.Sc., M.L.A, OALA | Senior Biologist
MTE Consultants Inc.**

T: 519-204-6510 x2263 | MCameron@mte85.com

123 St George St., London, Ontario N6A 3A1

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Our structural engineering team is growing with the acquisition of Atkins + Van Groll. Visit our [website](#) to learn more.

COVID-19 Update: We remain operational and are currently available by email and phone, however, our offices are closed. Staff that are required to visit job sites or perform field work are required to follow MTE health and safety policies and procedures, as well as additional COVID-19 protocols, which can be viewed [here](#).

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Notice: A number of Elgin County services are unavailable at this time due to the evolving health situation (COVID-19). Please visit www.elgincounty.ca for daily updates.

Appendix B

Species Lists

Floral Inventory										
Scientific Name	Common Name	CW	GRank	COSEWIC	Nrank	SARO	SRank	EL	Type	Invasive
<i>Abutilon theophrasti</i>	Velvetleaf	3.0	GNR		NNA		SE5	IC	FO	
<i>Acer saccharinum</i>	Silver Maple	-3.0	G5		N5		S5	C	TR	
<i>Agrimonia parviflora</i>	Swamp Agrimony	-1.0	G5		N4		S4	R	FO	
<i>Agrostemma githago</i> var. <i>githago</i>	Common Corncockle	3.0	GNR	TNR	NNA		SE3		FO	
<i>Agrostis stolonifera</i>	Creeping Bentgrass	-3.0	G5		N5		SE5	IC	GR	
<i>Alliaria petiolata</i>	Garlic Mustard	0.0	GNR		NNA		SE5	IC	FO	Y
<i>Ambrosia artemisiifolia</i>	Common Ragweed	3.0	G5		N5		S5	C	FO	
<i>Arctium minus</i>	Common Burdock	3.0	GNR		NNA		SE5	IC	FO	
<i>Asclepias syriaca</i>	Common Milkweed	5.0	G5		N5		S5	C	FO	
<i>Barbarea vulgaris</i>	Bitter Wintercress	0.0	GNR		NNA		SE5	IC	FO	
<i>Berberis thunbergii</i>	Japanese Barberry	3.0	GNR		NNA		SE5	IU	SH	Y
<i>Carex blanda</i>	Woodland Sedge	0.0	G5		N5		S5	C	SE	
<i>Chelone glabra</i>	White Turtlehead	-5.0	G5		N5		S5	X	FO	
<i>Cichorium intybus</i>	Chicory	3.0	GNR		NNA		SE5	IC	FO	
<i>Circaea canadensis</i>	Broad-leaved Enchanter's Nightshade	3.0	G5		N5		S5	C	FO	
<i>Cirsium arvense</i>	Canada Thistle	3.0	G5		NNA		SE5	IC	FO	Y
<i>Cirsium vulgare</i>	Bull Thistle	3.0	GNR		NNA		SE5	IC	FO	
<i>Convolvulus arvensis</i>	Field Bindweed	5.0	GNR		NNA		SE5	IX	VI	
<i>Cornus alternifolia</i>	Alternate-leaved Dogwood	3.0	G5		N5		S5	X	SH	
<i>Cornus racemosa</i>	Gray Dogwood	0.0	G5		N5		S5	X	SH	
<i>Cornus sericea</i>	Red-osier Dogwood	-3.0	G5		N5		S5	C	SH	
<i>Dactylis glomerata</i>	Orchard Grass	3.0	GNR		NNA		SE5	IC	GR	
<i>Daucus carota</i>	Wild Carrot	5.0	GNR		NNA		SE5	IC	FO	
<i>Dipsacus fullonum</i>	Common Teasel	3.0	GNR		NNA		SE5	IC	FO	Y
<i>Echinochloa crus-galli</i>	Large Barnyard Grass	-3.0	GNR		NNA		SE5	IC	GR	
<i>Elaeagnus umbellata</i>	Autumn Olive	3.0	GNR		NNA		SE3	IR	SH	Y
<i>Eleocharis obtusa</i>	Blunt Spikerush	-5.0	G5		N5		S5	C	SE	
<i>Elymus repens</i>	Creeping Wildrye	3.0	GNR		NNA		SE5	IC	GR	
<i>Elymus virginicus</i>	Virginia Wildrye	-3.0	G5		N5		S5		GR	
<i>Epilobium ciliatum</i>	Northern Willowherb	-3.0	G5		N5		S5		FO	
<i>Epilobium parviflorum</i>	Small-flowered Willowherb	3.0	GNR		NNA		SE4		FO	Y
<i>Epipactis helleborine</i>	Eastern Helleborine	3.0	GNR		NNA		SE5	IU	FO	Y
<i>Equisetum arvense</i>	Field Horsetail	0.0	G5		N5		S5	C	FE	
<i>Erigeron annuus</i>	Annual Fleabane	3.0	G5		N5		S5	C	FO	
<i>Erigeron hyssopifolius</i>	Daisy Fleabane	-3.0	G5		N5		S5		FO	
<i>Eupatorium perfoliatum</i>	Common Boneset	-3.0	G5		N5		S5	C	FO	
<i>Euphorbia corollata</i>	Flowering Spurge	5.0	G5		N4		S4		FO	
<i>Euthamia graminifolia</i>	Grass-leaved Goldenrod	0.0	G5		N5		S5	C	FO	
<i>Eutrochium maculatum</i>	Spotted Joe Pye Weed	-5.0	G5		N5		S5		FO	
<i>Eutrochium purpureum</i>	Purple Joe Pye Weed	0.0	G5		N4		S4	R	FO	
<i>Fagus grandifolia</i>	American Beech	3.0	G5		N5		S4	C	TR	
<i>Fraxinus americana</i>	White Ash	3.0	G5		N5		S4	C	TR	
<i>Fraxinus pennsylvanica</i>	Green Ash	-3.0	G5		N5		S4	C	TR	
<i>Geum canadense</i>	White Avens	0.0	G5		N5		S5	X	FO	

Click Here to
Generate/Refresh
Inventory Table

<i>Glechoma hederacea</i>	Ground Ivy	3.0	GNR		NNA		SE5	IX	FO	
<i>Hackelia virginiana</i>	Virginia Stickseed	3.0	G5		N5		S5	X	FO	
<i>Hesperis matronalis</i>	Dame's Rocket	3.0	G4G5		NNA		SE5	IC	FO	Y
<i>Hypericum perforatum</i>	Common St. John's-wort	5.0	GNR		NNA		SE5	IC	FO	Y
<i>Impatiens capensis</i>	Spotted Jewelweed	-3.0	G5		N5		S5	C	FO	
<i>Juglans nigra</i>	Black Walnut	3.0	G5		N4		S4?	C	TR	
<i>Juncus tenuis</i>	Path Rush	0.0	G5		N5		S5	C	RU	
<i>Juniperus virginiana</i>	Eastern Red Cedar	3.0	G5		N5		S5	U	TR	
<i>Leontodon hispidus</i>	Common Hawkbit		GNR		NNA		SEH		FO	
<i>Leucanthemum vulgare</i>	Oxeye Daisy	5.0	GNR		NNA		SE5	IC	FO	
<i>Ligustrum vulgare</i>	European Privet	3.0	GNR		NNA		SE5	IR	SH	Y
<i>Lindera benzoin</i>	Spicebush	-3.0	G5		N5		S4	C	SH	
<i>Liriodendron tulipifera</i>	Tulip Tree	3.0	G5		N4		S4	C	TR	
<i>Lobelia siphilitica</i>	Great Blue Lobelia	-3.0	G5		NNR		S5	X	FO	
<i>Lolium arundinaceum</i>	Tall Fescue	3.0	GNR		NNA		SE5	IC	GR	
<i>Lonicera japonica</i>	Japanese Honeysuckle	3.0	GNR		NNA		SE2	IR	VW	Y
<i>Lonicera tatarica</i>	Tartarian Honeysuckle	3.0	GNR		NNA		SE5		SH	Y
<i>Lythrum salicaria</i>	Purple Loosestrife	-5.0	G5		NNA		SE5	IC	FO	Y
<i>Malus prunifolia</i>	Pear-leaved Crabapple	5.0	GNR		NNA		SE1	IR	SH	
<i>Mellilotus albus</i>	White Sweet-clover	3.0	G5		NNA		SE5	IC	FO	Y
<i>Mimulus ringens</i>	Square-stemmed Monkeyflower	-5.0	G5		N5		S5	X	FO	
<i>Monarda fistulosa</i>	Wild Bergamot	3.0	G5		N5		S5		FO	
<i>Morus alba</i>	White Mulberry	0.0	GNR		NNA		SE5	IU	TR	Y
<i>Muhlenbergia mexicana</i>	Mexican Muhly	-3.0	G5		N5		S5	C	GR	
<i>Nepeta cataria</i>	Catnip	3.0	GNR		NNA		SE5	IC	FO	
<i>Oenothera biennis</i>	Common Evening Primrose	3.0	G5		N5		S5	X	FO	
<i>Ostrya virginiana</i>	Eastern Hop-hornbeam	3.0	G5		N5		S5	C	TR	
<i>Oxalis stricta</i>	Upright Yellow Wood-sorrel	3.0	G5		N5		S5	X	FO	
<i>Parthenocissus vitacea</i>	Thicket Creeper	3.0	G5		N5		S5	C	VW	
<i>Persicaria careyi</i>	Carey's Smartweed	-3.0	G4		N4		S4		FO	
<i>Petroselinum crispum</i>	Garden Parsley	5.0	GNR		NNA		SE1	IR	FO	
<i>Phalaris arundinacea</i>	Reed Canary Grass	-3.0	G5		N5		S5	C	GR	Y
<i>Phragmites australis</i>	Common Reed	-3.0	G5		N5		S4?		GR	Y
<i>Physocarpus opulifolius</i>	Eastern Ninebark	-3.0	G5		N5		S5	X	SH	
<i>Poa pratensis</i>	Kentucky Bluegrass	3.0	G5		N5		S5		GR	
<i>Podophyllum peltatum</i>	May-apple	3.0	G5		N5		S5	C	FO	
<i>Populus deltoides</i>	Eastern Cottonwood	0.0	G5		N5		S5		TR	
<i>Prunus serotina</i>	Black Cherry	3.0	G5		N5		S5	C	TR	
<i>Rhamnus cathartica</i>	Common Buckthorn	0.0	GNR		NNA		SE5	IC	SH	Y
<i>Rhus typhina</i>	Staghorn Sumac	3.0	G5		N5		S5	C	SH	
<i>Robinia pseudoacacia</i>	Black Locust	3.0	G5		NNA		SE5	IC	TR	Y
<i>Rosa multiflora</i>	Multiflora Rose	3.0	GNR		NNA		SE5	IX	SH	Y
<i>Rosa palustris</i>	Swamp Rose	-5.0	G5		NNR		S5	X	SH	
<i>Rubus idaeus ssp. idaeus</i>	Common Red Raspberry	3.0	G5T5		NNR		SE1		SH	
<i>Rubus occidentalis</i>	Black Raspberry	5.0	G5		N5		S5	X	SH	
<i>Rudbeckia hirta</i>	Black-eyed Susan	3.0	G5		N5		S5	C	FO	

[illegible]



AVIFAUNAL SURVEY INFORMATION SUMMARY SHEET

Project: 48957-100
Collector(s): W. Huys

	Date	Start	Finish	Weather
Visit 1	3-Jun-21	8:00am	8:30am	overcast
Visit 2	22-Jun-21	8:00am	8:30am	cool, overcast

Species Abbr.	Species Name	Comm. 1				S Rank	ESA Status	PIF Status	Notes
		Visit 1		Visit 2					
		Code	No.	Code	No.				
KILL	Killdeer	P	2	OB	1	S5			In field
GCFL	Great Crested Flycatcher	SH	1			S4	-		
WAVI	Warbling Vireo	SM	1	SM	1	S5			
BCCH	Black-capped Chickadee	SM	1			S5	-		
HOWR	House Wren	SM	1			S5			
AMRO	American Robin	P	4	FY	3	S5			
YWAR	Yellow Warbler	P/T	2	T	2	S5			
AMRE	American Redstart	SM	1	SM	1	S5			
EATO	Eastern Towhee			VO	1	S4		RC	
SOSP	Song Sparrow	P	2	SM	1	S5			
NOCA	Northern Cardinal	SH	2	OB	3	S5			
INBU	Indigo Bunting			SM	1	S4			
RWBL	Red-winged Blackbird	P	5			S4			
BHCO	Brown-headed Cowbird	SH	2	SH	2	S4			
BAOR	Baltimore Oriole	P	2	P	2	S4		RC,RS	Along lane

Evidence Codes:

Breeding Bird - Possible

SH=Suitable Habitat SM=Singing Male

Breeding Bird - Probable

T=Territory A=Anxiety Behaviour D=Display N=Nest Building P=Pair V=Visiting Nest

Breeding Bird - Confirmed

DD=Distraction NE=Eggs AE=Nest Entry NU=Nest Used NY=Nest Young FY=Fledged Young FS=Food/Faecal Sack

Other Wildlife Evidence

OB=Observed DP=Distinctive Parts TK=Tracks VO=Vocalization HO=House/Den FE=Feeding Evidence CA=Carcass

Fy=Eggs or Young SC=Scat SI=Other Signs (specify)

FL=Flyover FO=Foraging



AVIFAUNAL SURVEY INFORMATION SUMMARY SHEET

W. Huys

	Date	Start	Finish	Weather
Visit 1	15-Jun-15	6:45 AM	7:15 AM	24C, wind 1, 10% cloud, 0 precipitation
Visit 2	29-Jun-15	7:30 AM	8:00 AM	15C, wind 1, 0% cloud, 0 precipitation

Species Abbr.	Species Name	Comm. 1			Comm. 2				S Rank	ESA Status	PIF Status	Notes
		Visit 1		Visit 2	Visit 1		Visit 2					
		Code	No.	No.	Code	No.	Code	No.				
WAVI	Warbling Vireo	SM	1	SM	1				S5			
AMRO	American Robin	FY	10						S5			
YWAR	Yellow Warbler	NE	4	NE	2				S5			
SOSP	Song Sparrow	P	2	P	2				S5			
NOCA	Northern Cardinal	P	5	P	2				S5			
RWBL	Red-winged Blackbird	FY	8						S4			
AMGO	American Goldfinch			P	3				S5			

Evidence Codes:

Breeding Bird - Possible

SH=Suitable Habitat SM=Singing Male

Breeding Bird - Probable

T=Territory A=Anxiety Behaviour D=Display N=Nest Building P=Pair V=Visiting Nest

Breeding Bird - Confirmed

DD=Distracted NE=Eggs AE=Nest Entry NU=Nest Used NY=Nest Young FY=Fledged Young FS=Food/Faecal Sack

Other Wildlife Evidence

OB=Observed DP=Distinctive Parts TK=Tracks VO=Vocalization HO=House/Den FE=Feeding Evidence CA=Carcass

Fy=Eggs or Young SC=Scat SI=Other Signs (specify)

Appendix C – Candidate Significant Wildlife Habitat Assessment Table

Subject Lands ELCs: FOD6, SWT3, CUT1,

Adjacent Lands ELC's: FOD6, CUP3

Seasonal Concentration of Animals

Wildlife Habitat	ELC Codes Triggers	Additional Habitat Criteria	Subject Lands Candidate SWH	Adjacent Lands Candidate SWH
Waterfowl Stopover and Staging Areas (Terrestrial)	CUT1, A	- Fields with spring sheet water are present within the Agricultural portion of the Subject Lands, however these do not contain waste grains which would concentrate staging waterfowl.	No	No
Waterfowl Stopover and Staging Areas (Aquatic)	None Present	- Marsh wetlands large enough to support significant concentration of waterfowl are absent from the Subject Lands and Adjacent Lands.	No	No
Shorebird Migratory Stopover Area	None Present	- Beach areas, bars, seasonally flooded, muddy and un-vegetated shoreline habitat are absent from the Subject Lands and Adjacent Lands	No	No
Raptor Wintering Area	FOD6 CUT1	- Habitat >20ha with a combination of forest and open uplands is absent from the Subject Lands and Adjacent Lands	No	No
Bat Hibernacula	None Present	- No caves, mine shafts, underground foundations present	No	No
Bat Maternity Colonies	FOD6	- Woodlands on and Adjacent to the Subject Lands are assumed to provide suitable roosting habitat for bats	Candidate	Candidate
Turtle Wintering Areas	None present	- Deep (>2m) permanent waterbodies are greater than 120m from the Subject Lands	No	No
Reptile Hibernaculum	None Present	- No burrows, rock piles, rock crevices, or mammal burrows were observed on the Subject Lands	No	No

Colonially-Nesting Bird Breeding Habitat (Bank / Cliff)	CUT1	- No exposed cliffs or banks	No	No
Colonially-Nesting Bird Breeding Habitat (Trees/Shrubs)	None Present	- Mixed and deciduous treed wetland is absent from the Subject Lands. The small swamp thicket community is of insufficient size to support a concentration of colonial-nesting birds. No nesting colonies were observed in this community during field investigations.	No	No
Colonially-Nesting Bird Breeding Habitat (Ground)	CUT1	- Islands or peninsulas associated with open water or in the marshy areas are absent from the Subject Lands	No	No
Migratory Butterfly Stopover Areas	FOD6 CUT1	- The Subject Lands are located within 5km of Lake Erie or Lake Ontario, however limited nectar producing and egg-laying plants were observed along the forest edges and in cultural communities. - Monarch was observed on the Subject Lands during field investigations.	Candidate	Candidate
Land Bird Migratory Stopover Areas	FOD6	- The Subject Lands are located within 5km of Lake Erie or Lake Ontario. Woodlands on the Subject Lands and Adjacent Lands are assumed to provide stopover habitat for migrating landbirds.	Candidate	Candidate
Deer Winter Congregation Areas	FOD6	- Deer winter congregation areas are typically mapped by MNRF. No deer winter congregation areas are mapped within the Subject Lands or Adjacent Lands	No	No

Rare Vegetation Communities

Wildlife Habitat	ELC Codes Triggers	Additional Habitat Criteria	Subject Lands Candidate SWH	Adjacent Lands Candidate SWH
Cliffs and Talus Slopes	None Present	- No vertical cliffs with bedrock >3m in height	No	No
Sand Barren	None Present	- No sand barren areas >0.5ha	No	No
Alvar	CUT1 CUW1	- No alvars >0.5ha	No	No
Old Growth Forest	FOD5	- Woodland area not >0.5ha, dominant tree species not >140 years old	No	No
Savannah	None Present	- No savannah habitat with 25-60% tree cover	No	No
Tallgrass Prairie	None Present	- No ground cover dominated by prairie grasses	No	No
Other Rare Vegetation	None Present	- No Provincially Rare vegetation communities	No	No

Specialized Habitats of Wildlife considered SWH

Wildlife Habitat	ELC Codes Triggers	Additional Habitat Criteria	Subject Lands Candidate SWH	Adjacent Lands Candidate SWH
Waterfowl Nesting Area	SWT3	<ul style="list-style-type: none"> - No wetland >0.5ha or cluster of smaller wetlands are present on the Subject Lands. The swamp thicket on the Subject Property is too small and lacking in standing water to support a concentration of nesting waterfowl. - 	No	No
Bald Eagle and Osprey Nesting, Foraging, Perching	FOD6	<ul style="list-style-type: none"> - Nests of Bald Eagle or Osprey were not observed within the Subject Lands. - No super-canopy trees providing ideal perches are present on the Subject Lands or Adjacent Lands 	No	No
Woodland Raptor Nesting Habitat	None Present	<ul style="list-style-type: none"> - Natural or conifer plantation woodlands/ forest stands >30ha with >4ha of interior habitat are absent from the Subject Lands. - No raptor nests were observed within the study area 	No	No
Turtle Nesting Areas	None Present	<ul style="list-style-type: none"> - No exposed mineral soil adjacent to wetland 	No	No
Springs and Seeps	None Present	<ul style="list-style-type: none"> - Seepage from the base of the woodland slope is present on the Subject Lands 	Candidate	No
Amphibian Breeding Habitat (Woodland)	FOD6 SWT3	<ul style="list-style-type: none"> - The thicket swamp at the base of the woodland slope does not retain sufficient water in spring to support concentrations of breeding amphibians 	No	No
Amphibian Breeding Habitat (Wetlands)	None Present	<ul style="list-style-type: none"> - No wetlands >500m² and >120m from woodland ecosites are present on the Subject Lands or Adjacent Lands 	No	No
Woodland Area-Sensitive Bird Breeding Habitat	None Present	<ul style="list-style-type: none"> - Large mature (>60 years old) forest stand or woodlots >30ha with interior habitat are absent from the Subject Lands and Adjacent Lands 	No	No

Habitats of Species of Conservation Concern

Wildlife Habitat	ELC Codes Triggers	Additional Habitat Criteria	Subject Lands Candidate SWH	Adjacent Lands Candidate SWH
Marsh Breeding Bird Habitat	None Present	- There is no marsh habitat present within the Subject Lands or Adjacent Lands to support nesting by marsh birds	No	No
Open Country Bird Breeding Habitat	None Present	- Natural and cultural fields >30ha are absent from the Subject Lands and Adjacent Lands	No	No
Shrub/Early Successional Bird Breeding Habitat	CUT1	- Large fields succeeding to shrub and thicket habitats >10ha in size are absent from the Subject Lands and Adjacent Lands	No	No
Terrestrial Crayfish	SWT3	- Seepage wetland habitat present with forest edge habitat, however no crayfish chimneys were observed	No	No
Special Concern and Rare Wildlife Species (NHIC and MNRF pre-consultation)		NHIC identified several species are potentially on or adjacent to the Subject Lands		
Broad Beech Fern (SC)		- Broad Beech Fern was not observed during targeted plant surveys on the Subject Lands in 2015 and 2021 - Suitable deciduous forest habitat for Broad Beech Fern is assumed to be present on the Adjacent Lands	No	Candidate
Bald Eagle (SC)		- Suitable habitat for Bald Eagle (forest near major lake) may be present within the woodland of the Subject Lands as well as the Adjacent Lands, however no nests and no suitable perching trees (super-canopy trees) were observed. - Bald Eagle may be unlikely to use habitat in close proximity to existing roads and residences	No	No
Eastern Ribbonsnake (SC)		- Suitable marsh habitat is absent from the Subject Lands	No	No
Eastern Wood-pewee (SC)		- Suitable deciduous forest is present within the Subject Lands and the Adjacent Lands - Eastern Wood-pewee was not detected on the Subject Lands during breeding bird surveys in 2015 or 2021	No	Candidate
Peregrine Falcon (SC)		- Suitable steep cliff ledges close to large bodies of water are absent from the Subject Lands and Adjacent Lands	No	No

Snapping Turtle (SC)		<ul style="list-style-type: none"> - Suitable pond habitat may be present within the nearby golf course, however these ponds are > 120m from the Subject Lands 	No	No
Wood Thrush (SC)		<ul style="list-style-type: none"> - Suitable mature deciduous forest is present within the Subject Lands and the Adjacent Lands - Wood Thrush was not detected on the Subject Lands during breeding bird surveys in 2015 or 2021 	No	Candidate

Animal Movement Corridors

Wildlife Habitat	ELC Codes Triggers*	Additional Habitat Criteria	Subject Lands Candidate SWH	Adjacent Lands Candidate SWH
Amphibian Movement Corridors	None Present	<ul style="list-style-type: none"> - Amphibian movement corridors are identified once breeding habitat is confirmed. There are no suitable movement corridors present for amphibians within the Subject Lands 	No	No

Appendix C

Field Data Sheets

ELC COMMUNITY DESCRIPTION & CLASSIFICATION	SITE: <i>Glover - Port Stanley</i>		POLYGON: <i>1</i>	
	SURVEYOR(S): <i>D. Morse</i>		DATE: <i>May 23/14</i>	TIME: start <i>12:30</i> finish <i>4:00</i>
	UTMZ:	UTME:	UTMN:	

POLYGON DESCRIPTION

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

STAND DESCRIPTION:

LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (up to 4 sp) (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1 CANOPY	2	4	<i>sug. maple >> horn. aspen = beech > elm > oak</i>
2 SUB-CANOPY	3	3	<i>sug. maple >> bur. thorn = hawthorn > beech > elm</i>
3 UNDERSTOREY	3	4	<i>bur. thorn > hawthorn > inf. r. > dogwood > sumac</i>
4 GRD. LAYER	6	3	<i>bur. oak > grass / wildflower > s. c. > may apple</i>

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

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

STAND COMPOSITION:	BA:
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SIZE CLASS ANALYSIS:	a	< 10	a	10 - 24	o	25 - 50	n	> 50
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STANDING SNAGS:	o	< 10	o	10 - 24	n	25 - 50	n	> 50
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DEADFALL / LOGS:	o	< 10	o	10 - 24	r	25 - 50	n	> 50
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ABUNDANCE CODES: N = NONE R = RARE O = OCCASIONAL A = ABUNDANT

COMM. AGE:		PIONEER		YOUNG	x	MID-AGE		MATURE		OLD GROWTH
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SOIL ANALYSIS:

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

COMMUNITY CLASSIFICATION:

ELC CODE

COMMUNITY CLASS:	<i>Forest</i>	F0
COMMUNITY SERIES:	<i>Deciduous Forest</i>	F0D
ECOSITE:	<i>Dry-Fresh Sugar Maple Deciduous Forest</i>	F0D-5
VEGETATION TYPE:	<i>Dry-Fresh Sugar Maple-Beech Deciduous Forest</i>	F0D5-2
INCLUSION (a)	<i>Mineral Cultural Thicket</i>	CULT1 (1a)
COMPLEX (b)	<i>Mineral Cultural Woodland</i>	CULW1 (1b)

Notes:

PLANT SPECIES LIST

SITE: Glamis - Port Stanley

POLYGON: 1

DATE: May 13, 2014

SURVEYOR(S): O. Morse

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

ABUNDANCE CODES: R = RARE O = OCCASIONAL A = ABUNDANT D = DOMINANT

SPECIES CODE	LAYER				COL.
	1	2	3	4	
Ash	
black walnut					
crabapple		.			
sugar maple	.	.			
cottonwood					
aspen trembling					
am. beech					
hemlock					
elm					
dogwood					
sumac			.		
redosier dogwood			.		
multi flora rose			.		
buckthorn		.	d		
floribunda			d		
s. s. h.					
horsetail					
garlic mustard				.	
stink cabbage					
mayapple					
dandelion					
grasses					
nettle					
sens. fern					

[illegible]

ELC MANAGEMENT / DISTURBANCE		SITE: <u>Clower - Port Stanley</u>			
		POLYGON: <u>1</u>			
		DATE: <u>May 23, 2014</u>			
		SURVEYOR(S): <u>D. Morse</u>			
DISTURBANCE / EXTENT	0	1	2	3	SCORE †
TIME SINCE LOGGING	<u>> 30 YRS</u>	15 - 30 YRS	5 - 15 YRS	0 - 5 YEARS	0
INTENSITY OF LOGGING	<u>NONE</u>	FUEL WOOD	SELECTIVE	DIAMETER LIMIT	0
EXTENT OF LOGGING	<u>NONE</u>	LOCAL	WIDESPREAD	EXTENSIVE	
SUGAR BUSH OPERATIONS	<u>NONE</u>	LIGHT	MODERATE	HEAVY	0
EXTENT OF OPERATIONS	<u>NONE</u>	LOCAL	WIDESPREAD	EXTENSIVE	
GAPS IN FOREST CANOPY	<u>NONE</u>	<u>SMALL</u>	INTERMEDIATE	LARGE	1
EXTENT OF GAPS	<u>NONE</u>	<u>LOCAL</u>	WIDESPREAD	EXTENSIVE	
LIVESTOCK (GRAZING)	<u>NONE</u>	LIGHT	MODERATE	HEAVY	0
EXTENT OF LIVESTOCK	<u>NONE</u>	LOCAL	WIDESPREAD	EXTENSIVE	
ALIEN SPECIES	<u>NONE</u>	OCCASIONAL	<u>ABUNDANT</u>	DOMINANT	4
EXTENT OF ALIEN SPECIES	<u>NONE</u>	LOCAL	WIDESPREAD	EXTENSIVE	
PLANTING (PLANTATION)	<u>NONE</u>	OCCASIONAL	ABUNDANT	DOMINANT	0
EXTENT OF PLANTING	<u>NONE</u>	LOCAL	WIDESPREAD	EXTENSIVE	
TRACKS AND TRAILS	<u>NONE</u>	<u>FAINT TRAILS</u>	WELL MARKED	TRACKS OR	1
EXTENT OF TRACKS/TRAILS	<u>NONE</u>	<u>LOCAL</u>	WIDESPREAD	EXTENSIVE	
DUMPING (RUBBISH)	<u>NONE</u>	<u>LIGHT</u>	MODERATE	HEAVY	1
EXTENT OF DUMPING	<u>NONE</u>	<u>LOCAL</u>	WIDESPREAD	EXTENSIVE	
EARTH DISPLACEMENT	<u>NONE</u>	LIGHT	MODERATE	HEAVY	0
EXTENT OF DISPLACEMENT	<u>NONE</u>	LOCAL	WIDESPREAD	EXTENSIVE	
RECREATIONAL USE	<u>NONE</u>	<u>LIGHT</u>	MODERATE	HEAVY	0
EXTENT OF RECR. USE	<u>NONE</u>	<u>LOCAL</u>	WIDESPREAD	EXTENSIVE	
NOISE	<u>NONE</u>	<u>SLIGHT</u>	MODERATE	INTENSE	1
EXTENT OF NOISE	<u>NONE</u>	<u>LOCAL</u>	WIDESPREAD	EXTENSIVE	
DISEASE/DEATH OF TREES	<u>NONE</u>	<u>LIGHT</u>	MODERATE	HEAVY	1
EXTENT OF DISEASE / DEATH	<u>NONE</u>	<u>LOCAL</u>	WIDESPREAD	EXTENSIVE	
WIND THROW (BLOW DOWN)	<u>NONE</u>	LIGHT	MODERATE	HEAVY	0
EXTENT OF WIND THROW	<u>NONE</u>	LOCAL	WIDESPREAD	EXTENSIVE	
BROWSE (e.g. DEER)	<u>NONE</u>	<u>LIGHT</u>	MODERATE	HEAVY	1
EXTENT OF BROWSE	<u>NONE</u>	LOCAL	WIDESPREAD	EXTENSIVE	
BEAVER ACTIVITY	<u>NONE</u>	LIGHT	MODERATE	HEAVY	0
EXTENT OF BEAVER	<u>NONE</u>	LOCAL	WIDESPREAD	EXTENSIVE	
FLOODING (pools & puddling)	<u>NONE</u>	LIGHT	MODERATE	HEAVY	0
EXTENT OF FLOODING	<u>NONE</u>	LOCAL	WIDESPREAD	EXTENSIVE	
FIRE	<u>NONE</u>	LIGHT	MODERATE	HEAVY	0
EXTENT OF FIRE	<u>NONE</u>	LOCAL	WIDESPREAD	EXTENSIVE	
ICE DAMAGE	<u>NONE</u>	LIGHT	MODERATE	HEAVY	0
EXTENT OF ICE DAMAGE	<u>NONE</u>	LOCAL	WIDESPREAD	EXTENSIVE	
OTHER	<u>NONE</u>	LIGHT	MODERATE	HEAVY	
EXTENT	<u>NONE</u>	LOCAL	WIDESPREAD	EXTENSIVE	

† INTENSITY x EXTENT = SCORE

ELC COMMUNITY DESCRIPTION & CLASSIFICATION	SITE: <i>Glover Post Stanley</i>		POLYGON: <i>1a</i>	
	SURVEYOR(S): <i>D. Morse</i>		DATE: <i>May 23, 2014</i>	TIME: start <i>12:30</i> finish <i>4:30</i>
	UTMZ:	UTME:	UTMN:	

POLYGON DESCRIPTION

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

STAND DESCRIPTION:

LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (up to 4 sp) (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1 CANOPY	2	2	Ash >> Black Walnut
2 SUB-CANOPY	3	4	Buckthorn = Hawthorn > Sumac > Dogwood
3 UNDERSTOREY	3	4	Buckthorn = Hawthorn > Multi Flora Rose > Honeysuckle
4 GRD. LAYER	7	3	Muscadine = Golden Rod > Garlic Mustard > Mayapple

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

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

STAND COMPOSITION:	BA:
--------------------	-----

SIZE CLASS ANALYSIS:	a	< 10	o	10 - 24	r	25 - 50	n	> 50
----------------------	---	------	---	---------	---	---------	---	------

STANDING SNAGS:	n	< 10	n	10 - 24	n	25 - 50	n	> 50
-----------------	---	------	---	---------	---	---------	---	------

DEADFALL / LOGS:	r	< 10	n	10 - 24	n	25 - 50	n	> 50
------------------	---	------	---	---------	---	---------	---	------

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

COMM. AGE:	PIONEER	<input checked="" type="checkbox"/> YOUNG	MID-AGE	MATURE	OLD GROWTH
------------	---------	---	---------	--------	------------

SOIL ANALYSIS:

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

COMMUNITY CLASSIFICATION:

ELC CODE

COMMUNITY CLASS:	<i>Cultural</i>	<i>CU</i>
COMMUNITY SERIES:	<i>Cultural Thicket</i>	<i>CUT</i>
ECOSITE:		
VEGETATION TYPE:		
INCLUSION	<i>Mineral Cultural Thicket Ecosite</i>	<i>CUT1</i>
COMPLEX		

Notes:

SITE: Clover - Port Stanley
POLYGON: 1a
DATE: May 23, 2014
SURVEYOR(S): D. Morse

[illegible][illegible]

ELC PLANT SPECIES LIST	SITE:
	POLYGON:
	DATE:
	SURVEYOR(S):

SOIL TEXTURE x HORIZON	1	2	3	4	5
Om -1b <u>0</u> A					

MOTTLES	0					
GLEY	0					
BEDROCK	999					
WATER TABLE	0					
CARBONATES	999					
DEPTH OF ORGANICS	16					
PORE SIZE DISC #1	999					
PORE SIZE DISC #2	999					
MOISTURE REGIME	6					

[illegible]

[illegible]

1	2	3	4	5
<p>LF5</p> <p>A</p>				

MOTTLES	70					
GLEY	999					
BEDROCK	999					
WATER TABLE	999					
CARBONATES	999					
DEPTH OF ORGANICS	4					
PORE SIZE DISC #1	999					
PORE SIZE DISC #2	999					
MOISTURE REGIME	3					

[illegible]

N:\Templates\Field Sheets\BioLogic General Field Sheet

Butternut Data Collection Form 1 - 2010 Edition

Surveyor ID
or BHA # 222

(PLEASE USE BLOCK LETTERS)

Date (dd/mm/yyyy)

01 - 10 - 2015

Shaded fields are mandatory for Butternut Health Assessments

Surveyor
Contact

First W I L L Last H U Y S

Email w h u y s @ b i o l o g i c . c a

Telephone (519) 281-5962 Telephone Other () X

Property
Owner

First J A M E S Last G L O V E R

or Company

(check if same
as surveyor)

Email

Telephone () Telephone Other () X

Property Owner's Mailing address

Address 320 CARLOW RD Postal Code N5L1B6 Prov. ON

City PORT STANLEY

Tree Location (if different from mailing address)

Address/(911#) 37719 LAKE ROAD

Township S O U T H W O L D Lot Con

City PORT STANLEY

Directions

☐ Yes ☒ No
☐ Yes ☐ No

 Can Share Location Information with other Butternut Recovery Organizations?
 Site visits OK? (prior arrangements will always be made for a site visit)

 > (Greater than)
 < (Less than)

Butternut Trees Tally by Diameter Class

(Do a dot tally in blank space; write total# in box for each)

Tree Condition	< 3 cm	3-15 cm	16-30cm	>30 cm
Vigorous: > 50% Live Crown Minor or no cankers				
Poor Vigor: <50% Live Crown or >50% Live Crown + heavily cankered stem				
Dead				

Historically, do some trees produce seeds? ☐ Y ☐ N ☐ UnknownEstimated area containing butternut
for properties > 1 acre (0.4 hectares): ☐ Acres ☐ HectaresOverall Property Description
(area(s) containing Butternut)

- ☐
- Rolling Upland
- ☐
- Bottomland
-
- ☐
- Valley Slope
- ☐
- Variable
-
- ☐
- Tableland
- ☐
- Unknown

Vegetation Community/ies

- ☐
- Open
- ☐
- Fencerow
-
- ☐
- Shrubland
- ☐
- Roadside
-
- ☐
- Deciduous Forest
- ☐
- Quarry
-
- ☐
- Conifer Forest
- ☐
- Urban Yard
-
- ☐
- Mixed Forest
- ☐
- Urban Park

Other

Soil Drainage

- ☐
- Well Drained
-
- ☐
- Moderately Drained
-
- ☐
- Poorly Drained
-
- ☐
- Unknown

Soil Texture

- ☐
- Clay
- ☐
- Sand
-
- ☐
- Clay Loam
- ☐
- Variable
-
- ☐
- Loam
- ☐
- Unknown
-
- ☐
- Loamy Sand

Soil Depth

- ☐
- > 1metre
-
- ☐
- 30 - 99cm
-
- ☐
- < 30cm
-
- ☐
- Variable
-
- ☐
- Unknown

Please enter matching numerical page link code on forms 1 and 2

Page Link

481717

(Contact Information follows all applicable
privacy policies and guidelines)
 Please return forms to:
 Forest Gene Conservation Association
 Suite 233, 266 Charlotte St.
 Peterborough, ON, K9J 2V4
 www.fgca.net

49731

Butternut Data Collection FORM 2 (2010 Edition)

(PLEASE USE
BLOCK LETTERS)

Fill when Form 1 indicates canker is well
established. The information on Form 2
must be filled out for all trees when doing a
Butternut Health Assessment.

Shaded fields are mandatory for Butternut Health Assessments

Site Code(A,B,...Z, AA...)

Surveyor ID
or BHA #

222

Date (dd/mm/yyyy)

01 - 10 - 2015

Surveyor Last Name

H W Y S

Tree ID Numbering: 1,2,3,...Starting from 1 for each site

Tree #	Zone	Easting	Northing
01	17	481717	4724778

☐ Crown Class ☐ Live Crown % ☐ Main Stem Length(m)
☐ Twig Dieback ☐ Branch Dieback ☐ Defoliation ☐ Discolouration
☐ #Stems ☐ DBH(cm)
☐ Butternut Origin ☐ Natural ☐ Planted ☐ Unknown
☐ Seed Signs ☐ Male Flowers ☐ Female Flowers ☐ Seed Set ☐ None

Assess below live crown

#Epic-Live	#Epic-Dead	Bark Type	# Callused Wounds

Root = <2m >2m
 #Open #Sooty
 04 09
 04 03
 00 00

Metres from badly cankered tree
☐ < 40 ☐ > 40 ☐ None Found

Competing Species

HYBRID

Tree #	Zone	Easting	Northing
02	17	481719	4724781

☐ Crown Class ☐ Live Crown % ☐ Main Stem Length(m)
☐ Twig Dieback ☐ Branch Dieback ☐ Defoliation ☐ Discolouration
☐ #Stems ☐ DBH(cm)
☐ Butternut Origin ☐ Natural ☐ Planted ☐ Unknown
☐ Seed Signs ☐ Male Flowers ☐ Female Flowers ☐ Seed Set ☐ None

Assess below live crown

#Epic-Live	#Epic-Dead	Bark Type	# Callused Wounds

Root = <2m >2m
 #Open #Sooty
 00 00
 00 00
 00 00

Metres from badly cankered tree
☐ < 40 ☐ > 40 ☐ None Found

Competing Species

HYBRID

Tree #	Zone	Easting	Northing
	1		

☐ Crown Class ☐ Live Crown % ☐ Main Stem Length(m)
☐ Twig Dieback ☐ Branch Dieback ☐ Defoliation ☐ Discolouration
☐ #Stems ☐ DBH(cm)
☐ Butternut Origin ☐ Natural ☐ Planted ☐ Unknown
☐ Seed Signs ☐ Male Flowers ☐ Female Flowers ☐ Seed Set ☐ None

Assess below live crown

#Epic-Live	#Epic-Dead	Bark Type	# Callused Wounds

Root = <2m >2m
 #Open #Sooty
 00 00
 00 00
 00 00

Metres from badly cankered tree
☐ < 40 ☐ > 40 ☐ None Found

Competing Species

Tree #	Zone	Easting	Northing
	1		

☐ Crown Class ☐ Live Crown % ☐ Main Stem Length(m)
☐ Twig Dieback ☐ Branch Dieback ☐ Defoliation ☐ Discolouration
☐ #Stems ☐ DBH(cm)
☐ Butternut Origin ☐ Natural ☐ Planted ☐ Unknown
☐ Seed Signs ☐ Male Flowers ☐ Female Flowers ☐ Seed Set ☐ None

Assess below live crown

#Epic-Live	#Epic-Dead	Bark Type	# Callused Wounds

Root = <2m >2m
 #Open #Sooty
 00 00
 00 00
 00 00

Metres from badly cankered tree
☐ < 40 ☐ > 40 ☐ None Found

Competing Species

Tree #	Zone	Easting	Northing
	1		

☐ Crown Class ☐ Live Crown % ☐ Main Stem Length(m)
☐ Twig Dieback ☐ Branch Dieback ☐ Defoliation ☐ Discolouration
☐ #Stems ☐ DBH(cm)
☐ Butternut Origin ☐ Natural ☐ Planted ☐ Unknown
☐ Seed Signs ☐ Male Flowers ☐ Female Flowers ☐ Seed Set ☐ None

Assess below live crown

#Epic-Live	#Epic-Dead	Bark Type	# Callused Wounds

Root = <2m >2m
 #Open #Sooty
 00 00
 00 00
 00 00

Metres from badly cankered tree
☐ < 40 ☐ > 40 ☐ None Found

Competing Species

Please enter matching page link code on forms 1 and 2

Page Link

481717

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privacy policies and guidelines)

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Suite 233, 266 Charlotte St.
Peterborough, ON, K9J 2V4
www.fgca.net

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Table 3: Key for Field Identification of Butternut Hybrids

Trait	Description	Assign score of:
Leaf Retention	Leaves yellow and drop early in the fall, late August to mid-September	0
	Leaves yellow and drop in mid-fall, after the first frost	1
	Leaves stay green late into the fall and drop after a hard frost	2
Dormant Terminal Bud	Terminal bud elongated and slender, conical, and tan-coloured	0
	Terminal bud broadest at base, less elongated, slightly green coloured	1
	Terminal bud stout, pyramid shaped, green or yellow green in colour	2
Dormant Twigs	Dark olive green or reddish-brown, slender, sometimes with hairs below the terminal bud	0
	Tan to brownish green and stout, sometimes with patches of hairs, especially below terminal bud	1
	Tan to light green, stout, often with abundant rusty red or tan hairs	2
Lenticel Shape on New Twigs	Lenticels on most recent growth uniformly small, round, white, abundant, and evenly distributed; if some are elongated or dash-shaped, elongation is perpendicular to direction of the branch	0
	Lenticels on most recent growth mostly small, round, white, abundant, with patchy distribution; if some are elongated or dash-shaped, elongation is parallel to direction of branch	1
	Lenticels on most recent growth large, tan and corky, patchy distribution, many dash-shaped and elongated parallel to branch	2
Pith Color of 1-Year Twig	Very dark, chocolate brown	0
	Medium brown (colour of dark maple syrup)	1
	Tan to honey coloured	2
Leaf Scar	Top edge of most leaf scars straight or slightly arched	0
	Top edge of some leaf scars with small descending "V" shaped notch	1
	Top edge of most or all leaf scars with clear descending "V" shaped notch	2
Leaf Length	Most leaves less than 46 cm long	0
	Many leaves 46 cm or longer	1
Color of Bark Fissures on Mature Trees	Dark grey or black	0
	Light grey or silvery	1
	Tan or slightly pinkish	2
Green Hull Characteristics	Densely hairy and very sticky	0
	Somewhat hairy and only slightly sticky	2
Nut Shape	Nut cylindrical, round in cross section, with thin, sharp corrugations; the suture/seam is not easily distinguished from the longitudinal ridges	0
	Nut slightly asymmetrical, with noticeable valleys between longitudinal ridges	1
	Nut asymmetric, diamond shaped or flattened, with dull or sparse corrugations; the suture/seam is easily identified and forms the widest part of the body of the nut	2
Catkin Length When Fully Extended and Shedding Pollen	Shorter than 11.5 cm	0
	11.5 – 14 cm	1
	Longer than 14 cm	2

Table 4: Data Sheet for Field Identification of Butternut Hybrids

BHA name:	Will Hays		Tree ID #:		Tree ID #:		Tree ID #:
BHA ID #:	222		Tree ID #:		Tree ID #:		Tree ID #:
BHA Report #:	222-006		Tree ID #:	01	Tree ID #:	02	
Assessment Date(s):	Oct. 1, 2015		Tree ID #:		Tree ID #:		
Tree location (site address):	37719 Lake Road, Ft. Stanton		Tree ID #:		Tree ID #:		
Client name:	James Glover		Tree ID #:		Tree ID #:		
Traits (must evaluate at least five traits):			Score Assigned:	Score Assigned:	Score Assigned:	Score Assigned:	Score Assigned:
Leaf Retention			1	1			
Dormant Terminal Bud			1	1			
Dormant Twigs			1	1			
Lenticel Shape on New Twigs			2	2			
Pith Color of 1-Year Twig			0	1			
Leaf Scar			2	1			
Leaf Length			0	1			
Color of Bark Fissures on Mature Trees			1	0			
Green Hull Characteristics			1	1			
Nut Shape			1	1			
Catkin Length When Fully Extended and Shedding Pollen			1	1			
How to interpret total score: 0 to 3 = Butternut; 4 or greater = Hybrid			8	8			
Total:							

GENERAL SITE INFORMATION FIELD SHEET

Project: 48957-100

Date: June 3, 2021

Collector(s): WHL

Project Manager:

Visit #:

Time started: 8:00

Time finished: 8:30

Combined collectors' hours: 0.5

☐ NHIC List

☐ MNR EO's☐ none

11

not provided to collector

[illegible]

Graphic ☐

Attached or Name

Checked by Project Manager

☐ Date:

☐ Date: _____

ELC		SITE: 48957-106		POLYGON: 1	
COMMUNITY DESCRIPTION & CLASSIFICATION		SURVEY(S): DATE: Jan 3, 2011		TIME: start finish	
UTMZ: W4		UTME:		UTMN:	
POLYGON DESCRIPTION					
SYSTEM	SUBSTRATE	TOPOGRAPHIC FEATURE	HISTORY	PLANT FORM	COMMUNITY
<input type="checkbox"/> TERRESTRIAL <input type="checkbox"/> WETLAND <input type="checkbox"/> AQUATIC	<input type="checkbox"/> ORGANIC <input type="checkbox"/> MINERAL SOIL <input type="checkbox"/> PARENT MIN. <input type="checkbox"/> ACIDIC BEDRK. <input type="checkbox"/> BASIC BEDRK. <input type="checkbox"/> CARB. BEDRK.	<input type="checkbox"/> LACUSTRINE <input type="checkbox"/> RIVERINE <input type="checkbox"/> BOTTOMLAND <input type="checkbox"/> TERRACE <input type="checkbox"/> VALLEY SLOPE <input type="checkbox"/> TABLELAND <input type="checkbox"/> ROLL UPLAND <input type="checkbox"/> CLIFF <input type="checkbox"/> TALUS <input type="checkbox"/> CREVICE / CAVE <input type="checkbox"/> ALVAR <input type="checkbox"/> ROCKLAND <input type="checkbox"/> BEACH / BAR <input type="checkbox"/> SAND DUNE <input type="checkbox"/> BLUFF	<input type="checkbox"/> NATURAL <input type="checkbox"/> CULTURAL	<input type="checkbox"/> PLANKTON <input type="checkbox"/> SUBMERGED <input type="checkbox"/> FLOATING-LVD. <input type="checkbox"/> GRAMINOID <input type="checkbox"/> FORB <input type="checkbox"/> LOCHEN <input type="checkbox"/> BRYOPHYTE <input type="checkbox"/> DECIDUOUS <input type="checkbox"/> CONIFEROUS <input type="checkbox"/> MIXED	<input type="checkbox"/> LAKE <input type="checkbox"/> POND <input type="checkbox"/> RIVER <input type="checkbox"/> STREAM <input type="checkbox"/> MARSH <input type="checkbox"/> SWAMP <input type="checkbox"/> FEN <input type="checkbox"/> BOG <input type="checkbox"/> MEADOW <input type="checkbox"/> PRAIRIE <input type="checkbox"/> THICKET <input type="checkbox"/> SAVANNAH <input type="checkbox"/> WOODLAND <input type="checkbox"/> FOREST <input type="checkbox"/> PLANTATION
SITE	COVER				
<input type="checkbox"/> OPEN WATER <input type="checkbox"/> SHALLOW WATER <input type="checkbox"/> SURFICIAL DEP. <input type="checkbox"/> BEDROCK	<input type="checkbox"/> OPEN <input type="checkbox"/> SHRUB <input type="checkbox"/> TREED				

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

HT CODES: 1 = >25 m 2 = 10-24 m 3 = 2-9 m 4 = 1-4 m 5 = 0.5-4 m 6 = 0.2-4 m 7 = HT-0.2 m
CVR CODES: 0 = NONE 1 = 0% < CVR 10% 2 = 10 < CVR 25% 3 = 25 < CVR 60% 4 = CVR > 60%

STAND COMPOSITION: BA:

SIZE CLASS ANALYSIS:		< 10		10 - 24		25 - 50		> 50	
STANDING SNAGS:		< 10		10 - 24		25 - 50		> 50	
DEADFALL / LOGS:		< 10		10 - 24		25 - 50		> 50	
ABUNDANCE CODES:		N = NONE		R = RARE		O = OCCASIONAL		A = ABUNDANT	
COMM. AGE:	PIONEER	YOUNG	MID-AGE	MATURE	OLD	GROWTH			

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

COMMUNITY CLASSIFICATION:		ELC CODE	
COMMUNITY CLASS:	CULTURAL	CU	
COMMUNITY SERIES:	THICKET	CUT	
ECOSITE:	MINERAL	CUTI	
VEGETATION TYPE:			
INCLUSION			
COMPLEX			

Notes:

ELC		SITE:		POLYGON:	
MANAGEMENT / DISTURBANCE		DATE:		SURVEY(S):	
DISTURBANCE	EXTENT	0	1	2	3
TIME SINCE LOGGING		> 30 YRS	15 - 30 YRS	5 - 15 YRS	0 - 5 YEARS
INTENSITY OF LOGGING		NONE	FUEL WOOD	SELECTIVE	DIAMETER LIMIT
EXTENT OF LOGGING		NONE	LOCAL	WIDESPREAD	EXTENSIVE
SUGAR BUSH OPERATIONS		NONE	LIGHT	MODERATE	HEAVY
EXTENT OF OPERATIONS		NONE	LOCAL	WIDESPREAD	EXTENSIVE
GAPS IN FOREST CANOPY		NONE	SMALL	INTERMEDIATE	LARGE
EXTENT OF GAPS		NONE	LOCAL	WIDESPREAD	EXTENSIVE
LIVESTOCK (GRAZING)		NONE	LIGHT	MODERATE	HEAVY
EXTENT OF LIVESTOCK		NONE	LOCAL	WIDESPREAD	EXTENSIVE
ALIEN SPECIES		NONE	OCCASIONAL	ABUNDANT	DOMINANT
EXTENT OF ALIEN SPECIES		NONE	LOCAL	WIDESPREAD	EXTENSIVE
PLANTING (PLANTATION)		NONE	OCCASIONAL	ABUNDANT	DOMINANT
EXTENT OF PLANTING		NONE	LOCAL	WIDESPREAD	EXTENSIVE
TRACKS AND TRAILS		NONE	FAINT TRAILS	WELL MARKED	TRACKS OR
EXTENT OF TRACKS/TRAILS		NONE	LOCAL	WIDESPREAD	EXTENSIVE
DUMPING (RUBBISH)		NONE	LIGHT	MODERATE	HEAVY
EXTENT OF DUMPING		NONE	LOCAL	WIDESPREAD	EXTENSIVE
EARTH DISPLACEMENT		NONE	LIGHT	MODERATE	HEAVY
EXTENT OF DISPLACEMENT		NONE	LOCAL	WIDESPREAD	EXTENSIVE
RECREATIONAL USE		NONE	LIGHT	MODERATE	HEAVY
EXTENT OF RECR. USE		NONE	LOCAL	WIDESPREAD	EXTENSIVE
NOISE		NONE	SLIGHT	MODERATE	INTENSE
EXTENT OF NOISE		NONE	LOCAL	WIDESPREAD	EXTENSIVE
DISEASE/DEATH OF TREES		NONE	LIGHT	MODERATE	HEAVY
EXTENT OF DISEASE / DEATH		NONE	LOCAL	WIDESPREAD	EXTENSIVE
WIND THROW (BLOW DOWN)		NONE	LIGHT	MODERATE	HEAVY
EXTENT OF WIND THROW		NONE	LOCAL	WIDESPREAD	EXTENSIVE
BROWSE (e.g. DEER)		NONE	LIGHT	MODERATE	HEAVY
EXTENT OF BROWSE		NONE	LOCAL	WIDESPREAD	EXTENSIVE
BEAVER ACTIVITY		NONE	LIGHT	MODERATE	HEAVY
EXTENT OF BEAVER		NONE	LOCAL	WIDESPREAD	EXTENSIVE
FLOODING (pools & puddling)		NONE	LIGHT	MODERATE	HEAVY
EXTENT OF FLOODING		NONE	LOCAL	WIDESPREAD	EXTENSIVE
FIRE		NONE	LIGHT	MODERATE	HEAVY
EXTENT OF FIRE		NONE	LOCAL	WIDESPREAD	EXTENSIVE
ICE DAMAGE		NONE	LIGHT	MODERATE	HEAVY
EXTENT OF ICE DAMAGE		NONE	LOCAL	WIDESPREAD	EXTENSIVE
OTHER		NONE	LIGHT	MODERATE	HEAVY
EXTENT		NONE	LOCAL	WIDESPREAD	EXTENSIVE

† INTENSITY x EXTENT = SCORE

ELC PLANT SPECIES LIST	SITE:
	POLYGON:
	DATE:
	SURVEYOR(S):

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

ABUNDANCE CODES: R = RARE O = OCCASIONAL A = ABUNDANT D = DOMINANT

[illegible][illegible]

GENERAL SITE INFORMATION FIELD SHEET

Project: 48957-100

Date: June 22 2021

Project Manager:

Collector(s): W H

Visit #: _____

Time started: 8:00 Time finished: 8:30 Combined collectors' hours: 0.5

☐ NHIC List ☐ MNR EO's ☐ none ☐ not provided to collector[illegible]

ELC		SITE: 48957-100		POLYGON: 1	
COMMUNITY DESCRIPTION & CLASSIFICATION		SURVEYOR(S): WA		DATE: Jan 3, 2001	TIME: start finish
UTMZ: _____		UTME: _____		UTMN: _____	

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

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

HT CODES: 1 = >25 m 2 = 10-24 m 3 = 2-9 m 4 = 1-4 m 5 = 0.5-4 m 6 = 0.2-4 m 7 = HT<0.2 m
 CVR CODES 0= NONE 1= 0% < CVR 10% 2= 10 < CVR 25% 3= 25 < CVR 60% 4= CVR > 60%

STAND COMPOSITION:	BA:
--------------------	-----

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

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

COMM. AGE :	PIONEER	YOUNG	MID-AGE	MATURE	OLD GROWTH
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SOIL ANALYSIS:	
TEXTURE:	DEPTH TO MOTTLES / GLEY g = G=
MOISTURE:	DEPTH OF ORGANICS: (cm)
HOMOGENEOUS / VARIABLE	DEPTH TO BEDROCK: (cm)

COMMUNITY CLASSIFICATION:		ELC CODE
COMMUNITY CLASS:	CULTURAL	CU
COMMUNITY SERIES:	THICKET	CUT
ECOSITE:	MIXED	CUT1
VEGETATION TYPE:		
INCLUSION		
COMPLEX		

Notes:

ELC		SITE:		POLYGON:	
MANAGEMENT / DISTURBANCE		DATE:		SURVEYOR(S):	
DISTURBANCE	EXTENT	0	1	2	3
TIME SINCE LOGGING		> 30 YRS	15 - 30 YRS	5 - 15 YRS	0 - 5 YRS
INTENSITY OF LOGGING		NONE	FUEL WOOD	SELECTIVE	DIAMETER LIMIT
EXTENT OF LOGGING		NONE	LOCAL	WIDESPREAD	EXTENSIVE
SUGAR BUSH OPERATIONS		NONE	LIGHT	MODERATE	HEAVY
EXTENT OF OPERATIONS		NONE	LOCAL	WIDESPREAD	EXTENSIVE
GAPS IN FOREST CANOPY		NONE	SMALL	INTERMEDIATE	LARGE
EXTENT OF GAPS		NONE	LOCAL	WIDESPREAD	EXTENSIVE
LIVESTOCK (GRAZING)		NONE	LIGHT	MODERATE	HEAVY
EXTENT OF LIVESTOCK		NONE	LOCAL	WIDESPREAD	EXTENSIVE
ALIEN SPECIES		NONE	OCCASIONAL	ABUNDANT	DOMINANT
EXTENT OF ALIEN SPECIES		NONE	LOCAL	WIDESPREAD	EXTENSIVE
PLANTING (PLANTATION)		NONE	OCCASIONAL	ABUNDANT	DOMINANT
EXTENT OF PLANTING		NONE	LOCAL	WIDESPREAD	EXTENSIVE
TRACKS AND TRAILS		NONE	FAINT TRAILS	WELL MARKED	TRACKS OR
EXTENT OF TRACKS/TRAILS		NONE	LOCAL	WIDESPREAD	EXTENSIVE
DUMPING (RUBBISH)		NONE	LIGHT	MODERATE	HEAVY
EXTENT OF DUMPING		NONE	LOCAL	WIDESPREAD	EXTENSIVE
EARTH DISPLACEMENT		NONE	LIGHT	MODERATE	HEAVY
EXTENT OF DISPLACEMENT		NONE	LOCAL	WIDESPREAD	EXTENSIVE
RECREATIONAL USE		NONE	LIGHT	MODERATE	HEAVY
EXTENT OF RECR. USE		NONE	LOCAL	WIDESPREAD	EXTENSIVE
NOISE		NONE	SLIGHT	MODERATE	INTENSE
EXTENT OF NOISE		NONE	LOCAL	WIDESPREAD	EXTENSIVE
DISEASE/DEATH OF TREES		NONE	LIGHT	MODERATE	HEAVY
EXTENT OF DISEASE / DEATH		NONE	LOCAL	WIDESPREAD	EXTENSIVE
WIND THROW (BLOW DOWN)		NONE	LIGHT	MODERATE	HEAVY
EXTENT OF WIND THROW		NONE	LOCAL	WIDESPREAD	EXTENSIVE
BROWSE (e.g. DEER)		NONE	LIGHT	MODERATE	HEAVY
EXTENT OF BROWSE		NONE	LOCAL	WIDESPREAD	EXTENSIVE
BEAVER ACTIVITY		NONE	LIGHT	MODERATE	HEAVY
EXTENT OF BEAVER		NONE	LOCAL	WIDESPREAD	EXTENSIVE
FLOODING (pools & puddling)		NONE	LIGHT	MODERATE	HEAVY
EXTENT OF FLOODING		NONE	LOCAL	WIDESPREAD	EXTENSIVE
FIRE		NONE	LIGHT	MODERATE	HEAVY
EXTENT OF FIRE		NONE	LOCAL	WIDESPREAD	EXTENSIVE
ICE DAMAGE		NONE	LIGHT	MODERATE	HEAVY
EXTENT OF ICE DAMAGE		NONE	LOCAL	WIDESPREAD	EXTENSIVE
OTHER		NONE	LIGHT	MODERATE	HEAVY
EXTENT		NONE	LOCAL	WIDESPREAD	EXTENSIVE

† INTENSITY x EXTENT = SCORE

GENERAL SITE INFORMATION FIELD SHEET

Project: 48957-100

Date: Oct. 1 2021

Project Manager:

Collector(s): W.H.

Visit #:

Time started: 9:00 Time finished: 9:30 Combined collectors' hours: 0.5

☐ NHIC List ☐ MNR EO's ☐ none ☐ not provided to collector[illegible]