1598 Richmond Street
Hunter Subdivision
Natural Heritage Support

Environmental Impact Study

Project Location:
1598 Richmond Street, Dorchester, ON

Prepared for:
Auburn Developments Inc.
560 Wellington Street, 2nd Floor
London, ON N6A 3R4

Prepared by:
MTE Consultants Inc.
123 St. George Street
London, ON N6A 3A1

July 25, 2022

MTE File No.: 48975-100

Engineers, Scientists, Surveyors.

Contents

Figures

Tables

Appendices

1.0 Introduction

Auburn Developments Inc. (the Proponent) is submitting a Plan of Subdivision and Zoning By-Law amendment applications for the development at 1598 Richmond Street, Dorchester in the Municipality of Thames Centre. The property is located on Lots 9 & 10, Concession 4 North Division Dorchester, Municipality of Thames Centre, Middlesex County. The area of proposed development includes the entire Legal Parcel and is referred to as the Subject Lands for the purpose of this report [Figure 1]. 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 Subject Lands are a combination of active agricultural lands and natural vegetation communities. There are abandoned buildings and barns in the centre of the Subject Lands, on the east side of Richmond Street. On the west side of Richmond Street, a small drain cuts through the property. To the east, south and west of the Subject Lands are residential communities. To the north, there are additional rural residential homes with active croplands.

The proposal is to develop low-medium density residential subdivision with associated roads, driveways and areas of open space. The EIS is generally preceded by a Terms of Reference for an EIS to identify features of potential natural heritage significance and recommend a scope of work for an EIS. A Terms of Reference was submitted to the Upper Thames River Conservation Authority (UTRCA) on July 9th, 2021 with comments from the UTRCA on January 14, 2022 [Appendix A].

Life science data collection on the Subject Lands was completed in 2021 and 2022. This report compiles the data collection for these years.

1.1 Report Objective

This report is an Environmental Impact Study (EIS) as requested by the Municipality of Thames Centre and UTRCA [Appendix A]. An Environmental Impact Study (EIS) is completed for development applications on lands that contain or are within or adjacent to Group A, B or C “green system” natural heritage features (Municipality of Thames Centre Official Plan, Consolidated 2020). The EIS report contains recommendations for avoidance of impacts, mitigation of impacts, environmental management strategies and monitoring requirements to protect the significant natural heritage features and functions.

1.2 Format

Natural heritage features and functions identified in this EIS were evaluated through a review of the Natural Heritage Reference Manual (NHRM, 2010) for policy 2.1 of the Provincial Policy Statement (MMAH, 2020), Middlesex County Official Plan (1999, consolidated 2006) and Section 3 (Agricultural & Green-Space System Policies) of the Municipality of Thames Centre Official Plan (TCOP) (2004, Consolidated, 2020). This EIS has been completed in accordance with the Municipality of Thames Centre Study (EIS) Requirements (Policy 3.2.3.1).

This report will be circulated to the Municipality of Thames Centre and UTRCA for agency review and comment on the findings and recommendations.

This EIS contains the following components, in accordance with the standards noted above:

Section 2.0 Policy Overview and Land Use Settings
Section 3.0 Triggers for the EIS
Section 4.0 Description of the Natural Environment
Section 5.0 Evaluation of Significance and Policy Analysis
Section 6.0 Natural Heritage Features Summary
Section 7.0 Project Description
Section 8.0 Potential Impacts and Mitigation Measures

1.3 Background Documents

The following additional studies were reviewed to provide context and supporting data for the EIS:

- Middlesex Natural Heritage Systems Study (2003) which forms part of the municipal planning policies. The study was updated in 2014 but not incorporated into Official Plans.
- Upper Thames River Source Protection Area Assessment Report (Thames-Sydenham and Region Source Protection Committee, 2015)
- Hydrogeological Assessment (EXP, 2022)

1.4 Pre-Consultation

A Terms of Reference (TOR) was submitted to the UTRCA on July 9th, 2021 with comments received on January 14, 2022 [Appendix A].

A Species at Risk pre-screening report was also submitted to the Ministry of Environment Conservation and Parks (MECP) on January 14, 2022; a response has not yet been received.

2.0 Land Use Setting and Policy Overview

The Subject Lands are a combination of active agricultural lands and natural vegetation communities [Figure 1]. There is abandoned buildings and barn structures in the centre of the Subject Lands, on the east side of Richmond Street. On the west side of Richmond Street, a small drain cuts through the property. To the east, south and west of the Subject Lands are residential communities. To the North, there are additional rural residential homes with active croplands.

Provincial and municipal legislation and policies were reviewed to inform the evaluation of significant natural heritage features on and adjacent to the Subject Lands.

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. These policies in the context of this development are further reviewed in section 5 of this EIS through the municipal policies.

2.2 Municipality of Thames Centre Official Plan (Consolidated 2020)

The Municipality of Thames Centre Official Plan (TCOP) includes environmental policies that provide direction for the long-term protection and conservation of natural heritage features and areas and the ecological functions, processes, and linkages that they provide in the Municipality of Thames Centre. The general environmental goals of the Official Plan include, but are not limited to, the following:

- Use subwatersheds, valleylands and larger landscape features to integrate the Natural Heritage System with regional systems
- Provide for the identification, protection, rehabilitation, and management of natural heritage features and areas and their ecological functions.
- To encourage improvements to water quality and general aquatic habitat in all municipal watercourses
- Minimize or prevent negative impacts on natural heritage features by regulating development, identifying environmental constraints, requiring an EIS as needed and implementing mitigation measures

Natural Heritage features are identified and mapped on Appendix 1 Part A of the Official Plan (Consolidated 2020). Natural Heritage features have been subdivided into Group A, B and C components of the "Green Space" system. Group A features (Provincially Significant Wetlands, Habitats for Endangered and Threatened Species and Fish Habitat) have a Natural Area designation which prohibits development and site alteration except in accordance with provincial and federal legislation (Endangered Species Act and Federal Fisheries Act). Group B features include Regionally Significant Wetlands, Significant Valleys and Woodlands, Significant Woodlands and woodland patches identified by the Middlesex Natural Heritage Study (2003), Significant Wildlife Habitat, Areas of Natural and Scientific Interest (Provincial and Regional ANSIs), and Environmentally Significant Areas. Group B features receive a Protection designation and development or site alteration is not permitted unless evaluated by a professional and demonstrated to have no negative impacts on the features or associated ecological functions. Group C features include streambank and floodplains along with hazard lands. Group C features are subject to Conservation Authority approvals

2.2.1 Environmental Classifications

County of Middlesex, Schedule C (1999, Consolidated 2006)

Schedule C is used to identify features for further consideration when land use change is proposed. There are features identified on the subject lands and adjacent lands. This schedule is to be reviewed in conjunction with the Land Use schedule discussed below. However, until the planning application and approvals are initiated, the Woodlands Conservation By-Law (No. 5738) regulates the injuring and destruction of trees and encourages preservation and planting of trees to conserve and enhance woodlands throughout the County of Middlesex.

Municipality of Thames Centre, Appendix 1: Part A (2004, Consolidated 2020)

There are two woodlands less than 4 ha (Group B Features) along the east side of the Subject Lands. The scale of the Appendix 1 map covers the watershed and these features are more clearly identified on the Land Use Schedule discussed below.

2.2.2 Land Use Designations

County of Middlesex, Schedule A (1999, Consolidated 2006)

The Subject Lands are designated as Agricultural Areas (Schedule A) with no Natural Areas identified.

Municipality of Thames Centre, Schedule B-1 (2004, Consolidated 2020)

The Subject Lands are designated as Residential on Schedule B-1: Land Use Plan- Dorchester Settlement Area Municipality of Thames Centre Official Plan (2020) [Figure 2]. There are two small pockets designated as Protection Area (group B feature), consistent with the woodlands less than 4 ha note above in Section 2.2.1. At the southwest corner of Marion Street and Richmond Street, there is an area designated as Neighbourhood Commercial.

2.2.3 Zoning By-Laws

The Municipality of Thames Centre Zoning By-Law No. 75-2006

The Subject Lands are primarily zoned Future Development (FD) with two areas [Figure 3] zoned as Environmental Protection (EP) which is consistent with the Official Plan Land Use schedules [Figure 2]. The FD Zone allows for only existing use of buildings or structures. The EP zone only allows the alteration or erection of the following buildings or structures: boat dock or ramp, conservation use, existing agricultural use, wildlife preserve and works of a conservation authority. A zoning by-law amendment will be required to reflect the change in zone use to residential subdivision as proposed in this application.

2.3 Upper Thames River Conservation Authority

The UTRCA regulates lands within its watershed under Ontario Regulation 157/06, pursuant to Section 28 of the *Conservation Authorities Act*. The UTRCA 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.

Within the Subject Lands, the area along the Sandusky Drain in the west end and along the corridor to the south (UT-MD-83) is within an Upper Thames River Conservation Authority (UTRCA) regulation limit for flood hazards [Figure 4]. In addition, there is an unevaluated wetland in the northeast corner of the Subject Lands which is also regulated. UTRCA should be consulted to determine how features on the Subject Lands and Adjacent Lands may be regulated in accordance with O.Reg. 157/06.

2.4 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).

2.5 Fisheries Act

The federal *Fisheries Act, 1985* (amended 2019) manages fisheries resources, as well as conserves and protects fish and fish habitat, including by preventing pollution. Protections apply to all fish and fish habitat in Canada. Under the Act, fish habitat is defined as “water frequented by fish and any other areas on which fish depend directly or indirectly to carry out their life processes, including spawning grounds and nursery, rearing, food supply and migration areas” (section 2[1]). The Act presents two main prohibitions: the prohibition of any work, undertaking, or activity that result in the harmful alteration, disruption or destruction of fish habitat [section 35(1)] and the prohibition of any work, undertaking, or activity that results in the death of fish by any other means other than fishing [section 34.4(1)]. Authorizations to proceed with a proposed work, undertaking, or activity that may harm fish or fish habitat may be provided by the Minister of Fisheries and Oceans, in accordance with sections 34.4(2)(b) and 35(2)(b).

2.6 Fish and Wildlife Conservation Act

The *Fish and Wildlife Conservation Act, 1997* (FWCA) regulates hunting, trapping, fishing, and related activities in Ontario in order to address the conservation of fish and wildlife resources in the province, including mammals, birds, reptiles, amphibians and fish. Under the Act, a person that hunts or traps wildlife requires a license administered by the Ministry of Natural Resources and Forestry (MNRF). Deliberate capture of wildlife or fish for the purpose of salvage and relocation is regulated under the FWCA.

2.7 Migratory Birds Convention Act

The federal *Migratory Birds Convention Act, 1994* aims to protect and conserve migratory birds as populations and individual birds in Canada and the United States. 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 bird species protected under the Migratory Birds Convention Act, 1994 and/or Regulations under that Act. Many bird species not protected by the MBCA (e.g. raptors) are protected under the FWCA.

3.0 Triggers for EIS

The Municipality of Thames Centre requires natural heritage studies to be completed where development or site alteration is proposed entirely or partially within the distances adjacent to Natural Heritage System components set out in Policy 3.2.3.1 in the Municipality of Thames Centre Official Plan (Consolidated 2020).

The proponent is planning a low-medium residential subdivision development at 1598 Richmond Street, Dorchester. This Environmental Impact Study (EIS) are required based on the following triggers from the Municipality of Thames Centre Official Plan (2020):

- Proposed development within 50 m of a Group B Feature
- Proposed development within 120 m of Unevaluated Wetlands (UTRCA)
- UTRCA Flood Hazard Regulations

An application for a permit under the UTRCA Ontario Regulation 157/06, is required in addition to this EIS. Additionally, the *Endangered Species Act* (2007) protects species and habitat not specifically identified on County of Oxford Schedules. To be consistent with the Provincial Policy Statement (Ministry of Municipal Affairs and Housing (MMAH), 2020), the requirements for an additional study can be triggered without any adjacent features identified on the Municipality of Thames Centre Schedules.

The following section (Section 4.0) reviews the natural heritage setting of the Subject Lands. Section 5.0 reviews the proposed land use change in conjunction with general natural heritage issues that require consideration in the application process.

4.0 Description of the Natural Environment

The following section reviews the abiotic and biotic features on and within 120m of the Subject Lands that contribute to the overall natural heritage features and functions of the Subject Lands and Adjacent Lands. This review provides relevant background information for interpreting environmental features and functions for evaluation in Section 5.0.

4.1 Physical Setting

4.1.1 Bedrock and Physiography

The Subject Lands are underlain by Middle Devonian-aged limestone, dolostone, and shale of the Dundee Formation (Ontario Geological Survey, 1991). It is a part of the Algonquin Arch forming the ridge along the Ontario peninsula between Michigan Basin and Appalachian Basin. Bedrock is not exposed within the Subject Lands (EXP, 2022). On the west end of the Subject Lands there is Modern alluvial deposits, glaciofluvial deposits and till. The east end of the Subject Lands is primarily glaciofluvial deposits and till.

4.1.2 Soils

The Soils of Middlesex County Soil Survey Report No. 56 indicates deep mesic organic soils (OD2) with rapid to imperfect drainage on the west end of the Subject Lands. The remainder of the Subject Lands is primarily part of the Bryanston and Honeywood soil associations with well to imperfect drainage.

On a site specific level, the Subject Lands have areas of silt, sandy silt/silty sand, clayey silt/till overlying sand and sand and gravel. Organic deposits are present within wetland communities on site with the sand mostly present in the western portion of the site (EXP, 2022).

4.1.3 Topography

In the general vicinity of the Subject Lands, the topography is very gently sloping to gently sloping (Soil Survey Report No. 56). On a site-specific scale, the Subject Lands are very gently sloping on the west end and gently sloping on the east end with some hilly topography. Topography ranges from 275 metres above mean sea level (AMSL) at the northeast corner to 256 m AMSL (EXP, 2022).

4.1.4 Hydrology

The Subject Lands are located within the Upper Thames River Source Water Protection Area (Thames-Sydenham & Region Source Protection Committee, 2015). The eastern half of the Subject Lands are within a Significant Groundwater Recharge Area (SGRA) with vulnerability scores of 4 and 6 and the western half of the Subject Lands is within a Highly Vulnerable Aquifer (HVA) with a score of 6. Due to the SGRA and HVA, the Subject Lands are susceptible to contamination and sourcewater protection should be taken into consideration.

Surface Water: Based on orthographic imagery interpretation, review of drainage maps (OMAFRA, 2021) and regulation maps (UTRCA), there is one open drain (Sandusky Drain), flowing through the Subject Lands generally from the north to the south. Based on the hydrogeological assessment by EXP (2022) the Porter Subdivision Drain (not found) and Hunter Branch merge with the Sandusky Drain to ultimately flow to the Thames River, south of the Subject Lands.

Groundwater: Based on the EXP hydrogeological assessment (2022), groundwater levels across the site are relatively high and near the ground surface (less than 1m below ground surface). Monitoring wells indicated some response to precipitation. Groundwater flow is generally from the northeast to the southwest. The shallow groundwater is affected in different areas of the Subject Lands by hydraulic conductivity, topography, drainage and geology.

4.2 Biological Setting

Life science data were collected on the Subject Lands and Adjacent Lands by MTE Consultants in 2021. This section summarizes the background review of natural heritage features in the area of the Subject Lands and compiles the data collected by MTE.

4.2.1 Records Review

The Land Information Ontario (LIO) mapping (MNRF, 2021) and Natural Heritage Information Centre (NHIC) online database (2021) were reviewed for natural heritage features of provincial significance on the Subject Lands or Adjacent Lands.

No Areas of Natural and Scientific Interest (ANSI), Provincially Significant Wetlands (PSW), or Environmentally Significant Areas (ESA) are located on or within 120m of the Subject Lands. The North Dorchester Swamp is approximately 800m to the northeast of the Subject Lands.

4.2.2 Species Records

For this EIS, Protected Species are those listed as Endangered or Threatened on the Species at Risk in Ontario (SARO) List of the *Endangered Species Act* (*ESAct*, 2007). Only species listed as Endangered or Threatened on the SARO List receive protection for individuals or habitat under the *ESA*. A Species at Risk Preliminary Screening Report was submitted to the MECP on January 14, 2022. Comments have not yet been received to confirm ESAct requirements.

Species of Conservation Concern (SOCC) are those listed as Special Concern on the SARO list, species with a provincial ranking of S1-S3, or locally-designated species. Provincial status rankings for plants, vegetation communities, and wildlife are based on the number of occurrences in Ontario and have the following meanings:

S1: critically imperiled; often fewer than 5 occurrences
S2: imperiled; often fewer than 20 occurrences
S3: vulnerable; often fewer than 80 occurrences
S4: apparently secure
S5: secure
S?: unranked, or, if following a ranking, rank uncertain (e.g. S3?)

A review of the NHIC species records, the Ontario Breeding Bird Atlas, the Ontario Reptile and Amphibian Atlas, citizen science online databases such as eBird and iNaturalist, and the Species at Risk in Ontario (SARO) List was also conducted to identify SOCC with the potential to be present in the area of the Subject Lands [Table 1]. 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.

Targeted surveys or habitat assessments for these Protected Species and SOCC were conducted by MTE on the Subject Lands as part of the current EIS. Survey methods and results are discussed in Sections 4.3 and 4.4.

Table 1: Protected Species & SOCC Potentially Present in the Vicinity of the Subject Lands

Common Name	Scientific Name	SARO Status	S-rank	Data Source	Year of Record
American Badger	*Taxidea taxus*	END	S2	SARO	-
Blanding's Turtle	*Emydoidea blandingii*	THR	S3	NHIC	-
Butternut	*Juglans cinerea*	END	S3?	SARO	-
Eastern Small-footed Myotis	*Myotis leibii*	END	S2S3	SARO	-
Little Brown Myotis	*Myotis lucifugus*	END	S3	SARO	-
Northern Myotis	*Myotis septentrionalis*	END	S3	SARO	-
Red-headed Woodpecker	*Melanerpes erythrocephalus*	END	S3	OBBA	-
Tri-coloured Bat	*Perimyotis subflavus*	END	S3?	SARO	-
Bank Swallow	*Riparia riparia*	THR	S4B	OBBA	-
Barn Swallow	*Hirundo rustica*	THR	S4B	OBBA, eBird	-
Bobolink	*Dolichonyx oryzivorus*	THR	S4B	OBBA	-
Chimney Swift	*Chaetura pelagica*	THR	S3B	OBBA	-
Eastern Meadowlark	*Sturnella magna*	THR	S4B, S3N	OBBA	-
Least Bittern	*Ixobrychus exilis*	THR	S4B	eBird	2019
Rainbow Mussel	*Villosa iris*	THR	S2S3	NHIC	-
Silver Shiner	*Notropis photogenis*	THR	S2S3	NHIC	-
Wavy-rayed Lampmussel	*Lampsilis fasciola*	THR	S2	NHIC	-
Eastern Wood-Pewee	*Contopus virens*	SC	S4B	OBBA, eBird	2019
Golden-Winged Warbler	*Vermivora chrysoptera*	SC	S3B	OBBA	-
Northern Map Turtle	*Graptemys geographica*	SC	S4	NHIC, ORRA	2017
Snapping Turtle	*Chelydra serpentina*	SC	S4	ORAA	2019
Wood Thrush	*Hylocichla mustelina*	SC	S4B	OBBA	-

4.3 Field Investigations

Site investigations were completed in 2021 and 2022 to document existing vegetation communities, inventory plant species present within or adjacent the Subject Lands, document bird species breeding on or adjacent to the Subject Lands, identify potential habitat for Protected Species, and record incidental observations of wildlife on the Subject Lands (Table 2).

Table 2: Table of Ecological Surveys on the Subject Lands in 2021 and 2022

Date	Survey Type	Time	Weather	Staff
April 27, 2021	Calling Anurans	10:30pm-11:15pm	Partly cloudy, warm	Lindsay McKay, Elise Roth
May 12, 2021	Bat Habitat assessment	5:00pm-7:00pm	Clear, warm	LM
May 17, 2021	Calling Anurans	11:15pm-11:45pm	Clear, warm	LM,ER
May 20, 2021	Spring Plant Inventory	10:30am-5:00pm	Clear, warm, calm	Will Huys, Victoria Schveighardt
June 2, 2021	Spring Plant Inventory	8:00am-1:00pm	Cloudy, cool	WH,ER
June 15, 2021	Breeding Bird Survey	6:00am-8:00am	Clear, cool	Zach Anderson,VS
June 21, 2021	Calling Anurans	9:46pm-	Cloudy, warm	ER,VS
June 30, 2021	Breeding Bird Survey	6:45am-8:00am	Warm, overcast, light rain	ZA,VS
July 22, 2021	Turtle Basking	9:00am-	Cloudy, warm, calm	ZA,ER
July 26, 2021	Turtle Basking	-	Clear, warm, sunny	LM,ER
August 19, 2021	Summer Plant Inventory	8:30am – 12:30pm	Overcast, warm	WH
October 13, 2021	Fall Plant Inventory	9:30am-	Overcast, warm	ER,VS
April 22, 2022	Blanding's Turtle Survey	1:00pm-2:04pm	Clear, warm, sunny	ER,WH
April 29, 2022	Blanding's Turtle Survey	11:00am-12:45pm	Clear, warm, sunny	ER,LM
May 4, 2022	Blanding's Turtle Survey	2:00pm-3:30pm	Cloudy, warm	ER,LM
May 17, 2022	Blanding's Turtle Survey	1:00pm-3:30pm	Clear, warm, sunny	ER, Tanya Cooper
May 25, 2022	Blanding's Turtle Survey	9:00am-10:30am	Sunny, warm	ER,WH

4.3.1 Vegetation Communities

Vegetation communities within the Subject Lands were assessed by MTE plant and wildlife technician Will Huys, certified to conduct ELC in Southern Ontario, with Victoria Schveighardt on May 20, 2021 and Elise Roth on June 2, 2021, using protocols outlined in the Ecological Land Classification System for Southern Ontario (Lee et al., 1998). Provincial significance of vegetation communities is based on the rankings assigned by the NHIC (2020).

All communities identified are secure in Ontario (NHIC, 2020) [Table 3; Figure 5]. Area measurements are based on interpretation of aerial photos and include community inclusions. ELC data collection sheets are provided in Appendix C.

Floristic surveys were undertaken throughout 2021 as outlined in Table 2. The status of all plant species is based on the provincial NHIC database (MNRF, 2020) and the list of vascular plants for the Carolinian Zone (Oldham, 2017). A full botanical list, by community, is provided in Appendix D.

Table 3: Ecological Land Classifications for the Subject Lands

Community Type	Polygon	ELC Code	Description	S-rank	Area (ha) within Subject Lands
Cultural Communities					
Cultural	1	CUM1	Mineral Cultural Meadow	n/a	~5.21
Cultural	4	CUW1	Mineral Cultural Woodland	n/a	~0.92
Cultural	7	CUM1	Mineral Cultural Meadow	n/a	~1.56
Cultural	9	CUM1	Mineral Cultural Meadow	n/a	~2.50
Cultural	10	n/a	Residential Lands	n/a	~1.71
Natural Communities					
Natural	2	MAS3	Organic Shallow Marsh	n/a	~1.73
Natural	3	SWC3	White Cedar Organic Coniferous Swamp	n/a	~0.78
Natural	5	MAS	Shallow Marsh	n/a	~0.22
Natural	6	MAM2/CUM1	Mineral Meadow Marsh/Mineral Cultural Meadow	n/a	~1.38
Natural	8	MAM2	Mineral Meadow Marsh	n/a	~2.47

Vegetation community groups along with potential groundwater indicator plants (TRCA, 2017) are as follows:

Community 1 is a Mineral Cultural Meadow (CUM1). Community 1 is primarily grasslands with meandering trails throughout and some trees. Trails appear to be used by nearby residents for recreational activities, including all-terrain vehicles and motorbikes. Where trees are present, the canopy consists of Sugar Maple, Manitoba Maple with some Black Locust and Eastern Cottonwood.

Cockspur Hawthorn was observed in Community 1. This hawthorn species is considered rare for Middlesex County (Oldham, 2017), however it was not considered rare within Middlesex County in *Rare Vascular Plants of Ontario, Fourth Edition* (Oldham & Brinker, 2009), and no sources dated after 2009 were referenced for Middlesex County in the 2017 *List of Vascular Plants of Ontario's Carolinian Zone* (Oldham, 2017). This hawthorn species is apparently secure (S4) in Ontario and one of the most common Hawthorn species in the province (MNRF, 2021). NHIC last evaluated that

status of this species in 2015 and noted that it is fairly common in the Carolinian Zone of southern Ontario (NHIC, 2021b). Cockspur Hawthorn can be found in many areas, including along streams and riverbanks, in forest edges, on sandy hillsides, on roadsides, in fields or pastures, in thickets, and sometimes in wet ground (Reznicek, Voss & Walters, 2011). It is found through the London area and as a result, we suggest this species should not be considered regionally rare and may be so only due to lack of reporting.

Community 2 is an Organic Shallow Marsh (MAS3) with open water areas. The canopy is dominated by Tamarack with Goldenrod and Dogwood. The understorey is comprised of Sedge, Cattail and Reed Canary Grass. Skunk Cabbage and Common Boneset, considered groundwater indicator plants, were observed in Community 2.

Community 3 is a White Cedar Organic Coniferous Swamp (SWC3). The community is heavily dominated by Eastern White Cedar. The following groundwater indicators were observed in Community 3: Skunk Cabbage and Naked Mitrewort. Regionally-rare species observed in Community 3 include Evergreen Wood Fern, Downy Willowherb, Bristly Dewberry and Purple Meadow-rue. Community 3 is directly adjacent to Community 2 in the northeast portion of the Subject Lands. A small area of Community 3 is also located in the far northeast corner of the Subject Lands extending into the Adjacent Lands.

Community 4 is a Mineral Cultural Woodland (CUW1). The canopy is dominated by apple and Manitoba Maple with some occasional ash. Skunk Cabbage, considered a groundwater indicator, was observed in a small area at south east boundary near Eva Street.

Community 5 is a low spot in the field that was not historically present (not in 1954 air photos). This feature is considered a Shallow Marsh (MAS) with a canopy that consists of Willow, Eastern Cottonwood and White Elm. The understory is comprised of Bitter Nightshade, Willow and Manitoba Maple. It was observed to be dry later in the spring season.

Community 6 is the Sandusky Drain and is a combination of a Mineral Meadow Marsh (MAM2) (with a flowing channel) and a Mineral Cultural Meadow (CUM1) along the banks. The following groundwater indicators were observed in Community 6: Skunk Cabbage. Regionally-rare species observed in Community 6 include Downy Willowherb and Purple Meadow-rue.

Community 7 is a Mineral Cultural Meadow (CUM1). The predominant species are Eastern Cottonwood, ash, Manitoba Maple, Freeman Maple, willow and Norway Maple. The understorey contains Eastern Red Cedar, spirea and dogwood. Skunk Cabbage and Turtlehead, considered groundwater indicator plants, were observed in a small area of Community 7 near culvert under tracks.

Community 8 is a Mineral Meadow Marsh (MAM2). A soil sample was collected in Community 8 confirming organic soil materials. The following groundwater indicators were observed in Community 8: Skunk Cabbage. Regionally-rare species in Community 8 include Water Sedge, Downy Willowherb and Purple Meadow-rue.

Community 9 is a Mineral Cultural Meadow (CUM1). The canopy is comprised of Manitoba Maple, willow and Trembling Aspen with occasional European White Poplar in the understorey. Regionally-rare species observed in Community 9 include Downy Willowherb and Purple Meadow-rue in low areas of the patch.

Community 10 is a Residential Farmyard with natural and landscaped species present. Northern Catalpa, Common Hackberry, Silver Maple, Freeman Manitoba and Manitoba Maple, Tree-of-Heaven, willow and Norway Spruce are found within the Community. Several abandoned buildings and debris are present throughout the Community.

The rest of the Subject Lands are farmland.

4.3.2 Floristic Quality Analysis

Based on the floral inventory, vegetation communities 1 to 9 were assessed using SOFIA (Southern Ontario Floral Inventory Analysis) (Lebedyk, 2018). SOFIA provides several values based on floral inventories to evaluate the value and natural quality of vegetation communities. These values are provided in Table 4.

The Coefficient of Conservatism (CoC) is a value (0 to 10) assigned to each species based on the species' degree of fidelity to certain ecological parameters (Oldham, Bakowsky & Sutherland, 1995). Plants found in a wide range of vegetation communities are assigned low values while those that are found in a narrow range of parameters are assigned high values. For a community, the mean Coefficient of Conservatism (CoC) is calculated between all species observed, and this provides a measure of floristic quality (Lebedyk, 2018). A community with a Mean CoC that is >3.5 is of sufficient floristic quality to be of remnant natural quality. A Mean CoC >4.5 would indicate a relatively intact natural area with high floristic quality. None of the communities exceed 4.5 and only community 3 exceed the 3.5 value [Table 4].

Another measure is the Floristic Quality Index (FQI). FQI is intended to indicate the overall vegetative quality of a community, and is calculated by multiplying the mean CoC by the square root of the number of species present (Oldham, Bakowsky & Sutherland, 1995). Based on a study of urban woodlands in the Chicago area, a community with a FQI <20 is considered to have minimal significance from a natural quality perspective, and a community with a FQI >35 has sufficient conservatism and richness to be floristically important from a provincial perspective. None of the communities exceeded 35 and Community 3 and 8 were above the minimal significance threshold [Table 4].

Table 4: Southern Ontario Floral Inventory Analysis (SOFIA) Results

Vegetation Community	Mean CoC	FQI	% Native Species	Comments
Community 1 Mineral Cultural Meadow	1.42	10.26	56	• Insufficient remnant floristic quality • below minimum natural quality value
Community 2 Organic Shallow Marsh	3.43	18.14	93	• Insufficient remnant floristic quality • below minimum natural quality value
Community 3 White Cedar Organic Coniferous Swamp	**4.20**	**27.89**	89	• **sufficient** remnant floristic quality • **above** minimum natural quality value
Community 4 Mineral Cultural Woodland	2.82	11.64	76	• Insufficient remnant floristic quality • below minimum natural quality value
Community 5 Shallow Marsh	1.50	4.74	60	• Insufficient remnant floristic quality • below minimum natural quality value
Community 6 Mineral Meadow Marsh/ Mineral Cultural Meadow	2.61	18.29	80	• Insufficient remnant floristic quality • below minimum natural quality value
Community 7 Mineral Cultural Meadow	2.60	17.08	74	• Insufficient remnant floristic quality • below minimum natural quality value
Community 8 Mineral Meadow Marsh	2.80	**24.25**	79	• Insufficient remnant floristic quality • **above** minimum natural quality value
Community 9 Mineral Cultural Meadow	1.54	9.37	57	• Insufficient remnant floristic quality • below minimum natural quality value

4.3.3 Aquatic Habitat Assessment

The Sandusky Drain (Community 6) has a defined and relatively natural channel form, with evidence of permanent flowing water. The drain banks are fully vegetated Groundwater discharge is present on the east portion of the watercourse across Richmond Street (EXP, 2022). Fish data

provided by the UTRCA [Appendix A], labelled as the Hunt Drain, supports common warm and cool water fish species. No other watercourses were observed that are noted by the UTRCA on their regulation map.

A review of the Fisheries and Oceans Canada (DFO) Species at Risk mapping did not identify aquatic species protected by the *Endangered Species Act* (2007) or Species at Risk Critical Habitat within or Adjacent to the Subject Lands.

4.4 Candidate Significant Wildlife Habitat

MNRF Significant Wildlife Habitat (SWH) Criteria Schedules for Ecoregion 7E (January 2015) use ELC ecosite codes and habitat criteria (e.g. size of ELC polygon, proximity to other natural features) to define candidate SWH. A full assessment of candidate SWH was completed for the Subject Lands using a combination of desktop analysis and ELC as described in Section 4.3.1, and is provided in Appendix E. The summary of candidate SWH is provided below.

The following candidate SWH was noted on the Subject Lands:

Seasonal Concentration of Animals

- Turtle Wintering Areas
- Reptile Hibernaculum
- Colonially-Nesting Bird Breeding Habitat (Trees/Shrubs) – Green Heron possible

Specialized Habitats of Wildlife

- Turtle Nesting Area
- Amphibian Breeding Habitat (Wetlands)

Habitats for Species of Conservation Concern Considered SWH

- Marsh Breeding Bird Habitat (Green Heron possible)
- Terrestrial Crayfish

Special Concern and Rare Wildlife Species

- Eastern Wood-Pewee (SC)
- Snapping Turtle (SC)

The following candidate SWH was noted on the Adjacent Lands:

Seasonal Concentration of Animals

- Bat Maternity Colonies

Special Concern and Rare Wildlife Species

- Eastern Wood-Pewee (SC)
- Wood Thrush (SC)

Candidate features were further evaluated using the results of targeted faunal site investigations (Section 4.5) to determine if SWH was confirmed based on criteria such as species presence, abundance, and diversity. Results of the assessment of significance for SWH are presented after Section 4.5.

4.5 Faunal Site Investigations

Breeding bird surveys, a bat maternity roost survey and general habitat investigations were completed within the Subject Lands in 2021.

4.5.1 Avifauna

Breeding bird surveys were conducted by MTE ecologists Zach Anderson and Victoria Schveighardt on June 15th and June 30th, 2021. Surveys consisted of an area search in all

vegetation communities within 30m of the Subject Lands. 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 27 species were observed within the Subject Lands. All species observed were secure (S5B) or apparently secure (S4B) breeding species in Ontario.

Barn Swallow was observed foraging in Community 2 and Community 9. The exterior and interior of buildings in Community 10 (no buildings elsewhere) were inspected for Barn Swallow nests as access was possible. No evidence of nests or nest scars was observed. A Green Heron pair was observed in Community 2 (indicator of marsh breeding habitat). A complete list of bird species observed is provided in Appendix F.

4.5.2 Amphibians

Targeted amphibian breeding surveys were completed within the Subject Lands on April 27th, and May 17th, 2021 by MTE ecologists Lindsay Mckay and Elise Roth and on June 21th, 2021 by MTE ecologists Elise Roth and Victoria Schveighardt. All monitoring was completed using the Great Lakes Marsh Monitoring Protocols (Bird Studies Canada, 2009). Two stations were determined based on presence of permanent water [Figure 5]. Station A was facing east toward Community 2 with Community 5 directly behind (within hearing range). Station B was facing west toward Community 6 on the west side of Richmond Street. Station A is a permanent pond with vegetated banks. On the east side of Community 2 is a White Cedar Organic Coniferous Swamp. Station B was adjacent to Community 6, a Mineral Meadow Marsh/ Mineral Cultural Meadow. Both Communities provide permanent water and vegetative habitat for amphibians. On April 27th, Community 5, a Shallow Marsh, was separately investigated for calling amphibians during which time no amphibians were heard. The subsequent surveys did not include Community 5 as a Station as water was not present.

During the first two surveys a number of amphibians were heard calling including American Toads, Green Frogs, Gray treefrogs, Chorus Frogs and Spring Peepers [Appendix G]. During the last survey on June 21st no amphibians were heard calling.

Table 5: Amphibian Call Count Code Results

Species	Station A (Community 2/3)			Station B (Community 6/8)		
	April	May	June	April	May	June
Spring Peeper	3	2-9	-	-	-	-
Chorus Frog	1-1		-	-	-	-
American Toad	1-2	1-2	-	-	-	-
Gray Tree Frog		1-4	-	-	-	-
Green Frog		1-1	-	-	-	-

*Note: First number indicates calling code (1-3) and second number indicates number of individuals heard.

4.5.3 Reptiles

Old foundations of abandoned residential structures and barns are present within Community 10 of the Subject Lands, in addition to a large rock pile in the agricultural fields [Figure 5]. These features may provide reptile hibernation sites, although rock piles do not typically extend below-grade which is required for successful overwintering. While targeted surveys for snakes were not specifically conducted on the Subject Lands, on June 2 2021 approximately 5 Eastern Gartersnakes and 5 Brown Snakes were observed within Community 10 (the residential farmyard). Snakes were observed under remnant shed materials on the ground and on a sandy slope surrounded by abandoned structures and old foundations.

In Community 2, which has open water areas, targeted turtle surveys were conducted on July 22 and 26, 2021 following the Survey Protocol for Blanding's Turtle in Ontario (MNRF, 2015). During the first survey on July 22, 2021, surveyors used binoculars to identify any turtles within the

wetland. Surveyors walked along the feature as accessible, to view from different vantage points. During the second survey on July 26, 2021 a canoe was used to enter the wetland and search the wetland area. On this sunny, clear morning more than 5 Midland Painted Turtles were observed.

Additional targeted basking surveys for Blanding's Turtles, which was identified during the records review as present within the North Dorchester Swamp, were completed in 2022 following the Survey Protocol for Blanding's Turtle in Ontario (MNRF, 2015). Surveys were conducted between 8am and 5pm with air temperatures above 5 degrees Celsius on sunny days or above 15 degrees Celsius on overcast or partially cloudy days. Five surveys were conducted under appropriate weather conditions on April 22, April 29, May 4, 17 and 25, 2022. Using an inflatable raft, surveyors paddled around Community 2 while using binoculars to visually identify basking turtles. Surveyors spent 1 hour observing turtles in Community 2 during each survey for a total for 10 survey hours (1 hour per surveyor per survey). Approximately 20 turtles were observed on April 22, greater than 12 turtles on April 29, 9 turtles on May 4, 10 turtles on May 17 and 30 turtles on May 25, 2022. All turtles observed were again determined to be Midland Painted Turtles.

4.5.4 Bat Habitat

Candidate bat maternity roost trees were identified using guidance from the *Survey Protocol for Species at Risk within Treed Habitats: Little Brown Myotis, Northern Myotis & Tri-coloured Bat* (MNRF, 2017). This protocol involves assessing trees based on: Species, diameter at breast height (DBH), height, presence of loose/peeling bark, cavity and cavity height, decay class, open canopy, and proximity of other snags. A review of candidate bat maternity roost trees was undertaken as part of the tree and vegetation inventory, completed by MTE ecologist Lindsay McKay on April 22, 2021. Five candidate bat maternity roost trees were identified within the Subject Lands [Figure 6]. Four of the five trees (2 Red Maple and 2 Burr Oak), were observed within the Agricultural Lands and one tree, a Sugar Maple, was observed along the northeast property boundary in Community 1. Trees greater than 30m outside of the Subject Lands were not surveyed.

4.5.5 Other

No mammal burrows were observed within the Subject Lands.

4.6 Significant Wildlife Habitat Assessment

Significant wildlife habitat was assessed using the results of targeted faunal site investigations and in accordance with specific criterion outlined in the Ecoregion Criteria Schedules 7E (MNRF, 2015), such as species presence, abundance or diversity. Where a candidate SWH meets the criteria for significance, the SWH is considered "confirmed". SWH which could not be confirmed due to a lack of data (e.g. on Adjacent Lands where access was not permitted) remains candidate SWH [Appendix E]. The assessment of SWH on the Subject Lands is described in Sections 4.6.1 to 4.6.20, below.

4.6.1 Turtle Wintering Areas

Targeted turtle surveys in 2021 and 2022 identified more than 5 Midland Painted Turtlesduring each survey, confirming SWH for turtle wintering.

- Subject Lands are **confirmed SWH** (Community 2).

4.6.2 Reptile Hibernaculum

Targeted snake surveys were not conducted; however, incidental observations include 5 Gartersnakes and 5 Brown Snakes on June 2, 2021 on a sandy slope surrounded by abandoned structures and old foundation features within the Subject Lands. Based on the presence and number of snakes, reptile hibernaculum is assumed significant.

- Subject Lands are **confirmed SWH** (Community 10).

4.6.3 Colonially-Nesting Bird Breeding Habitat (Trees/Shrubs)

A pair of Green Herons was observed during targeted breeding bird surveys on June 15th, 2021. More than two Heron nests were not observed.

- Subject Lands are **not SWH**

4.6.4 Waterfowl Nesting Area

Both Wood Duck and Mallard pairs were observed during targeted breeding bird surveys on June 15th and June 30th, 2021 in Community 2. One additional listed species would be needed to confirm significance.

- Subject Lands are **not SWH**

4.6.5 Turtle Nesting Area

Sandy exposed soil is abundant on the east side of Communities 2 and 3 providing suitable nesting habitat for turtles.

- Subject Lands are **Candidate SWH** (unfarmed areas next to Community 2 and 3).

4.6.6 Amphibian Breeding Habitat (Woodland)

During targeted calling anuran surveys at Station A (Community 2/3) on April 27th, 2021 Spring Peepers were observed at a calling code 3 with accompanying Chorus Frogs and American Toads. On May 17, 2021 Spring Peepers, Green Frogs, Gray Treefrogs and American Toads were heard calling at various codes. Using the ecoregion criteria, the Community is confirmed SWH.

- Subject Lands are confirmed **SWH** (Community 2/3).

4.6.7 Marsh Breeding Bird Habitat

A pair of Green Herons was observed during targeted breeding bird surveys on June 15th, 2021 in Community 2.

- Subject Lands are **confirmed SWH** (Community 2).

4.6.8 Terrestrial Crayfish Habitat

Terrestrial crayfish burrows were observed within the Subject Lands on May 20th, 2021 and May 17, 2022 around the perimeter of Communities 2 and 3. Farmland is not considered SWH.

- Subject Lands are **confirmed SWH** (non-agricultural lands, edges of Communities 2 and 3)

4.6.9 Special Concern and Rare Wildlife Species

Eastern Wood-Pewee was not observed during targeted breeding bird surveys in June, 2021.

- Subject Lands are **not SWH** (Eastern Wood Pewee)

5.0 Evaluation of Significance and Policy Analysis

This section assesses the natural heritage features and functions of the Subject Lands in accordance with provincial, municipal and Conservation Authority regulatory policies. Provincial and municipal natural heritage policies provide guidelines that determine appropriate land uses on and adjacent to natural heritage features and functions. Policies that pertain to this site include the:

- Provincial Policy Statement (PPS) Section 2.1, (MMAH 2020)
- Municipality of Thames Centre Official Plan (Consolidated 2020)
- UTRCA Regulations

The natural heritage features protected under the Provincial Policy Statement (PPS) section 2.1 (MMAH, 2020) will be addressed under the Thames Centre Green Space System (Section 3.2 Natural Heritage Features and Natural Hazard Areas) and reviewed using the Natural Heritage Reference Manual (Sections 5-11) (MNR, 2010).

5.1 Municipality of Thames Centre Green Space System

The Municipality of Thames Centre Green Space System consists of significant natural features, their functions and corridors that connect them to one another. The Green Space System categorizes significant natural features into three groups: Group A, B and C features with corresponding designations to provide policy direction. A Natural Area designation provides guidance for Group A features, a Protection Area designation provides guidance for Group B features and an Environmental Area designation provides guidance for Group C features within the Green Space System. Group A, B and C features are assessed below in accordance with Section 3.2.1 of the Municipality of Thames Centre Official Plan.

5.1.1 Group A Features

Provincially Significant Wetlands

There are no mapped provincially significant wetlands (PSW) within or adjacent to the Subject Lands. The closest mapped PSW is approximately 800 m to the northeast, the North Dorchester Swamp. The Dorchester Swamp is a Provincially Significant Wetland (PSW) approximately 3km south of the Subject Lands.

Habitats for Endangered and Threatened Species

Five candidate bat maternity roosts were observed within the Subject Lands on May 12, 2021. Confirmation of any additional ESAct considerations is pending MECP review of the submitted pre-screen report.

Fish Habitat

There is fish habitat associated with the drainage feature (Sandusky Drain). UTRCA provided internal fish data outlining species present (labelled as the Hunt Drain) [Appendix A].

5.1.2 Group B Features

Regionally Significant Wetlands

There is no Regionally Significant Wetlands within or Adjacent to the Subject Lands mapped on Appendix 1: Part A of the Municipality of Thames Centre Official Plan (2020).

Unevaluated Wetlands

There are three (3) unevaluated wetlands present within the Subject Lands which include Communities 2 and 3, 5, and 6 and 8.

Given the floristic quality of Community 3 and the associated SWH in Communities 2 and 3 (Green Heron nesting, Turtles overwintering and possible nesting and Terrestrial Crayfish burrows), this wetland should be considered Regionally Significant and should be retained in its entirety.

Community 6 is associated with the Sandusky Drain and the attached Community 8 is in the area that is mapped as the Porter Subdivision Drain. Community 6 supports fish habitat while some locally rare plants were found in both Community 6 and 8. The features would be considered a Group B feature although this feature has been culturally influenced by drainage works. A buffer has not been proposed for these features given the topography of the site and possibility to readjust some of the boundaries through development. This is reviewed later in the EIS.

Community 5 a low spot in the field that was not present as wetland in 1954. It is less than 0.5 ha with poor floristic quality and no amphibian breeding evidence. This feature is not considered regionally important and should be removed as a Group B feature on the Official Plan.

Significant Woodlands and Woodland patches

There are two small patches of woodland on the east end of the Subject Lands as mapped by the Municipality of Thames Centre Schedule B-1. Significant Woodlands are mapped adjacent to and within the Subject Lands on the Middlesex County Official Plan Appendix 1: Part A [Figure 6; "MNHS 2014 Woodland"]. Upon investigation, the northernmost feature is a wetland (Community 3) and is discussed above as an unevaluated wetland.

The east Subject Lands contains a portion of a feature identified as a vegetation patch meeting 1 or more criterion for significance by the Middlesex Natural Heritage Study (2014).

Significant Valleylands

There are no mapped Significant Valleylands within or adjacent to the Subject Lands according to the Appendix 1: Part A of the Municipality of Thames Centre Official Plan (2020). The Sandusky Drain Supports Fish Habitat and has been discussed in that context above.

Significant Wildlife Habitat

The following Significant Wildlife Habitat was confirmed or candidate on the Subject Lands in Section 4.6.

- Turtle Wintering Areas (Community 2)
- Reptile Hibernaculum (Community 10)
- Turtle Nesting Area (Candidate) (Communities 2 &3)
- Amphibian Breeding Habitat (Woodland) (Community 2)
- Marsh Breeding Bird Habitat (Community 2)
- Terrestrial Crayfish Habitat (Communities 2 & 3)

The following SWH was noted as possible on the Adjacent Lands but unconfirmed.

- Bat Maternity Colonies
- Eastern Wood-Pewee (SC)
- Wood Thrush (SC)

Provincially Significant Areas of Natural and Scientific Interest (ANSIs)

There are no mapped Provincial Life Science ANSI's in or near the Subject Lands. The closest is the Dorchester Swamp is a Provincially Significant Life Science ANSI located approximately 3km to the south of the Subject Lands.

Regionally Significant ANSIs & Environmentally Significant Areas (ESAs)

No mapped Regionally Significant ANSIs or ESAs are within or Adjacent to the Subject Lands based on Appendix 1: Part A of the Municipality of Thames Centre Official Plan (2020). The closest

Regionally Significant ANSI is 800m to the northeast associated with the North Dorchester Swamp PSW.

5.1.3 Group C Features

Natural hazard lands, Erosion lands, Stream-bank Corridors and Floodplains

According to maps provided by the UTRCA [Figure 4], the area along the Sandusky Drain in the Subject Lands is within an Upper Thames River Conservation Authority (UTRCA) regulation limit in addition to areas along the Canadian National Railway overlapping on the Subject Lands. The east end of the Subject Lands is also within the UTRCA Regulation Limit. There is potential hazard, erosion or flooding lands within these areas.

5.2 Conservation Authority Policies

5.2.1 Conservation Authority Regulation Limit

The Upper Thames River Conservation Authority (UTRCA) regulates lands within its watershed under Ontario Regulation 157/06, pursuant to Section 28 of the *Conservation Authorities Act*. The UTRCA 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 area associated with the Sandusky Drain, southern portions of the Subject Lands and the east end of the Subject Lands are within the UTRCA Regulation Limit. UTRCA policies for the Development, Interference with Wetlands and Alterations to Shorelines and Watercourses Regulation (157/06) apply to the Subject Lands. An application for a permit under O. Reg. 157/06 is required for the project.

A 30m buffer, as outlined in the UTRCA EIS Policy Manual (UTRCA, 2017) has been identified for the purposes of further review later in this EIS [Figure 6].

6.0 Natural Heritage Features Summary

A summary of significant features and functions identified on the Subject Lands in accordance with provincial and municipal policy, is provided in Table 5, below.

Table 6: Natural Heritage Features or Functions of the Subject Lands

Policy Category	Natural Heritage Feature	Description of Feature on the Subject Lands and Adjacent Lands
Provincial Policy Statement and Municipality of Thames Centre Policies	Significant Woodlands	• Woodland within the Subject Lands and Adjacent Lands has been mapped as Significant in the Middlesex County Natural Heritage Systems Study (2003 and 2014) • Woodland within and adjacent to the Subject Lands has been mapped as Significant by the Middlesex County Official Plan Appendix 1: Part A.
	Significant Wildlife Habitat (SWH)	The following Significant Wildlife Habitat was confirmed or candidate on the Subject Lands (Section 4.6). • Turtle Wintering Areas • Reptile Hibernaculum (Candidate) • Turtle Nesting Area (Candidate) • Amphibian Breeding Habitat (Woodland) • Marsh Breeding Bird Habitat • Terrestrial Crayfish Habitat The following SWH was noted on the Adjacent Lands but unconfirmed. • Bat Maternity Colonies • Eastern Wood-Pewee (SC) • Wood Thrush (SC)
	Unevaluated Wetlands	• Community 2/3 is a Group B wetland • Community 6/8 is a Group B wetland but includes disturbed municipal drains. Some of this wetland may be a result of poor drainage • Community 5 should be removed as a Group B feature.
	Fish Habitat	• The Sandusky Drain supports warm to cool water fish species.
	Habitat of Threatened and Endangered Species	• Potential bat maternity roosts for Endangered bat species (5 trees) are present on the Subject Lands.
UTRCA Regulations	Regulation Limit	• The surrounding area of the Sandusky Drain, and along the southern property boundary are within the UTRCA Regulation Limit for Flood Hazards. • Community 2/3 is a regulated wetland interference area.

7.0 Project Description

The proposal is to develop a low-medium density residential subdivision with associated roads, driveways and areas of open space within the Municipality of Thames Centre [Figures 7 & 8]. The total area of the Subject Lands is approximately 43ha. The lands will be used for housing and roads. Development has been designed with consideration for the open surface water features and wetland feature on the east side of the Subject Lands. Approximately 1.67 ha of Open Space will be left on either side of the drain flowing through the Subject Lands crossing Richmond Street. Communities 2 and 3 will be retained within the Subject Lands to main ecological functions of the wetland features. Two municipal road allowances are within the Subject Lands. One is a continuation of Ida Street and Land B as identified on Middlesex County Interactive Mapping runs north to south in the east end of the Subject Lands. Both road allowances would remain closed under the current development plan.

Stormwater Management

Two Stormwater Management (SWM) ponds are to be included in the design of the subdivision. One SWM pond is 0.6ha on the east side of Richmond Street along Marion Street and the other one is 3.6ha located along the southern property boundary on the east side of Richmond Street. Both SWM ponds are irregular in shape.

Sandusky Drain

The proposal has maintained the Sandusky Drain plus a 15m buffer.

Low Impact Development (LID) Measures
The implementation of LID measures are encouraged. Individual field percolation tests at proposed locations of LID measures should be conducted to ensure location suitability. A list of LID mitigation measures is provided in the Hydrogeological Assessment (EXP, 2022).

Wetlands

Community 2 and 3 has been retained.

Approximately 0.53 ha of Community 8 is being developed in this proposal. There is opportunity to adjust the wetland boundary to the north (Community 9) as compensation. This is discussed in the next section of the EIS.

Other Considerations

Candidate Bat maternity roosts will be removed in this plan as will the Candidate Snake Hibernaculum. Compensation for these features and/or followup studies are recommended in the next section of the EIS.

8.0 Potential Impacts and Mitigation Recommendations

Based on the completed site investigations and the policies reviewed, the Subject Lands contain Natural Heritage Features, including habitat for Protected Species.

Natural Heritage features identified within the Subject Lands which need to be considered with respect to the subdivision development are:

- Significant Woodland
- Significant Wildlife Habitat (confirmed on Subject Lands, candidate on Adjacent Lands)
- Habitat of Endangered or Threatened species
- Regionally Significant Wetland
- Fish Habitat

8.1 Direct Impacts and Mitigation Recommendations

Community 5 was considered not part of the significant natural heritage system and will be removed as part of this development. Some wildlife salvage may be required dependent on the time of year the areas is regraded.

Recommendation 1: Review Community 5 prior to site grading works and complete a wildlife salvage, if necessary. Transfer wildlife to Community 3 /4 nearby.

While communities 2, 3 and 4 will be protected from future development, these features on the east side of an unopened road allowance are part of a Medium Density Block. Final buffers, setbacks, ownership and management in this area will be reviewed as part of the site plan application for this block.

Recommendation 2: Undertake a scoped review of the medium density block along the east part of the Subject Lands at the time of site plan and detailed design, to finalize the setbacks, buffers and long term ownership and management of those features.

Community 1 supports Cockspur Hawthorn which is considered regionally rare based on available data at a provincial level. However, this species is found regularly in Middlesex County in field work completed by MTE and as a result, the ranking should be updated. Nevertheless, this hawthorn species is distributed through Community 1 and some of these trees will be retained in the buffers and setbacks

Recommendation 3: Review the medium density block and identify Cockspur Hawthorn that will be retained at detailed design for that phase.

Community 8 is impacted with the proposed development resulting in 0.53 ha lost along the south boundary of this feature. To the north, there is Open Space that is being retained which can be an area of expanded wetland compensation of 0.81 ha. Landscape features can be added to this wetland to encourage breeding amphibian populations and to support turtle nesting and overwintering.

Recommendation 4: Develop a landscape wetland creation plan to compensate for the loss of wetland habitat. This plan should include features to encourage amphibian breeding pools and separate turtle overwintering ponds plus nesting areas along the wetland perimeter.

A number of regionally-rare plant species have been located within the Subject Lands including the following:

- Cockspur Hawthorn (Community 1)
- Evergreen Wood Fern (Community 3)
- Bristly Dewberry (Community 3)
- Downy Willowherb (Communities 3, 6, 8, 9)
- Purple Meadow-rue (Communities 3, 6, 8, 9)
- Water Sedge (Community 8)

Regionally-rare species should be retained within the respective communities where possible. If not possible, plants should be relocated to retained vegetation communities. Plant species should be transplanted to appropriate habitats (i.e upland or wetland environments). Transplantation and or propagation techniques as required will be established upon detail design.

Recommendation 5: Prior to removal of wetland habitat in Community 8, regionally rare plants noted above should be salvage and planted in the existing or created wetland habitats.

Recommendation 6: Any site restoration or re-vegetation plan should be developed, using plant species native to Ecoregion 7E and appropriate for the existing site conditions. Plant species chosen should preferably be included in the UTRCA recommended plant lists (UTRCA, 2021a).

A Reptile Hibernaculum is assumed present in or near Community 10 due to the presence of snakes. The hibernaculum location was not confirmed but sufficient snake numbers were observed at or near emergence to suggest one is nearby. The rock pile on site may also act as reptile hibernaculum. The possible hibernation area is proposed for removal and, as a precaution, a new snake hibernaculum is proposed as compensation.

Recommendation 7: Construct a snake hibernaculum along the south side of the Subject Lands, following Best Management Practices for Identifying, Managing and Creating Habitat for Ontario's Species at Risk Snakes (MNRF, 2018).

8.2 Indirect Direct Impacts and Mitigation Recommendations

8.2.1 Fish Habitat

Direct fish habitat is present in the Sandusky Drain within the Subject Lands as per internal studies conducted by the UTRCA. Both cool and warm water species have been sampled by the UTRCA. The fish community is comprised of game fish, bait fish and suckers with no known Protected Species. Based on the species present, this drain should be considered warm water. As such a 15m buffer has been applied.

Recommendation 8: A 15 m buffer on either side of the open drain should be flagged and heavy duty sediment erosion and control fencing installed along the buffer boundaries prior to construction.

Recommendation 9: Any inwater construction works, if required at site plan, should occur outside of the fish breeding and spawning season from March 15th to July 15th.

Water supply to the wetland to be retained will be an important component of the detailed design phase water balance. However, at this level of planning application (Draft Plan), the hydrogeology studies and engineering review suggests the wetlands to be retained are largely groundwater supported. Overall, with traditional stormwater management approaches, increased runoff and reduced infiltration (28% - 57% of pre-development) can be expected. However, appropriate soils for Low Impact Development (LID) measures should be determined by block by block testing to support the hydrology of the wetlands with recommended post-development infiltration techniques (EXP, 2022).

Recommendation 10: Finalize the water balance at detailed design with a focus on diffuse clean water inputs to replicate the groundwater dominance of wetlands in Community 2/3 and Community 8.

A target of 80% pre-development volumes should be maintained post-development. A summary of pre-development and post-development water balance calculations along with LID measures are provided in the Hydrogeological Assessment (EXP, 2022).

8.2.2 Significant Wildlife Habitat

The following Significant Wildlife Habitat was confirmed or candidate on the Subject Lands in Section 4.6.

- Turtle Wintering Areas
- Reptile Hibernaculum
- Turtle Nesting Area (Candidate)
- Amphibian Breeding Habitat (Woodland)
- Marsh Breeding Bird Habitat
- Terrestrial Crayfish Habitat
- Habitat for Midland Painted Turtle (overwintering)

The following SWH was noted on the Adjacent Lands but unconfirmed.

- Bat Maternity Colonies
- Eastern Wood-Pewee (SC)
- Wood Thrush (SC)

Significant Wildlife Habitat associated with the wetland feature, Community 2, will be protected as Community 2 is not proposed for removal. A post development buffer of 10 to 15m is sufficient to maintain groundwater flows and discourage edge encroachment. However, with proposed draft plan layout, an average buffer of 30m has been achieved. Turtle wintering areas, amphibian breeding habitat (woodland), marsh breeding bird habitat, terrestrial crayfish habitat and habitat for overwintering Midland Painted Turtles will all be retained within Community 2 and the recommended buffer, as well as the additional expansion to the 30m average buffer provided in this plan.

Recommendation 11: Install wildlife barrier fence along the development limits of Community 2 and 3 ahead of construction.

Recommendation 12: A naturalization plan for the lands retained beyond the wetland habitat will be needed at detailed design.

Recommendation 13: Avoid vegetation clearing and site disturbance during migratory bird breeding season (April 1st to August 31st) 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 31st or the nest is confirmed inactive.

Recommendation 14: 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.

8.2.3 Habitat for Threatened and Endangered Species

A prescreening report was submitted to the MECP on January 14, 2022. No response has been received yet.

Five candidate bat maternity roost trees for Little Brown Myotis or Northern Myotis were identified within the Subject Lands. These will be removed as per the development plan. Sufficient roosting opportunity for bats is available in the adjacent woodland to the east and north. While no negative impacts on roosting opportunities for bats is expected, subject to MECP agreement, an artificial habitat is proposed for further precautions the following recommendations are listed below.

Recommendation 15: Removal of potential roost trees should take place outside of bat rearing and roosting season (no removal between April 1st- September 31st). This extends the migratory bird window (recommendation 12) an additional month for these five trees.

Recommendation 16: Install an artificial bat roost habitat at the SWM ponds in the south portion of the site.

Recommendation 17: 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.

8.2.4 Migratory Birds and Wildlife

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.

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 reptiles.

Recommendation 18: Plan vegetation removal activities to avoid breeding, nesting and migration periods of amphibians and turtles (generally April 1st to September 31st).

8.3 Construction Impacts and Mitigation Recommendations

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

Site personnel should be advised to take particular care when working in this active period for wildlife and instructed how to respond appropriately to wildlife encounters.

Recommendation 19: Make workers aware of potential incidental encounters with wildlife and the necessary protections. If an animal enters the work site, work at that location will stop and the animal should be permitted to leave without being harassed. If there are repeat observations of wildlife in the work area, barrier fencing may be used to direct wildlife away from active construction and toward natural areas.

Recommendation 20: No Bank Swallow [THR] were observed within or adjacent to the Subject Lands, however creation of suitable habitat (e.g. soil stockpiles) during construction should be avoided. Best management practices for deterring nesting during construction activities should be implemented (OMNRF, 2017). These measures should include stockpile slope management (i.e., grading stockpiles, eliminating vertical extraction faces, reducing slopes to 70 degrees or less) until at least July 15.

8.3.1 Sediment and Erosion Control Measures

A critical time for the protection of natural heritage features is during the construction phase. For all works and especially those within 30 m of adjacent natural heritage features, substantial sediment and erosion control measures will be required to ensure that indirect impacts to the Wetland and Significant Woodlands, and the other natural heritage features identified in this report are avoided or mitigated. With this proposed plan, development limits have been set at or close to the 30m distance. On the medium density(MD) block to the east, this buffer distance could be reduced given the site topography. This will be further reviewed when that MD block moves to the site plan approval stage.

Recommendation 21: A detailed interim stormwater management plan is needed to guide the construction phase and protect the wetland features. Stormwater must be discharged away from the adjacent wetland and watercourse features. This will be provided along with LID measures at detail design.

Recommendation 22: A multi-barrier approach for sediment and erosion control will be used for this development. Prior to works on site, robust sediment and erosion control fencing should be installed adjacent to the Wetland and Sandusky Drain. The fence will act as a barrier to keep construction equipment and spoil away from the slopes and vegetation to remain, and prevent erosion and sedimentation of the adjacent Wetland and drain. Sediment and erosion control fencing will be installed according to the Erosion and Sediment Control Guide for Urban Construction (TRCA, 2019).

Recommendation 23: During construction, the lands between the sediment and erosion control fencing should be maintained. The fence along the Sandusky Drain (Community 6) and Community 2 should remain in place until construction is complete and the remainder of the natural areas to remain are sodded or seeded and naturalized.

Recommendation 24: Soil stockpiles should be established in locations where natural drainage is away from the adjacent wetlands and watercourses. No soil should be stockpiled in the area of close proximity to the Wetland features or Sandusky Drain. If this is not possible and there is a possibility of any stock pile slumping and moving toward the edge of these natural heritage features, the 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 determined at detailed design.

Recommendation 25: Sediment and erosion control fencing should be inspected prior to construction to ensure it was installed correctly and during construction to ensure that the fencing is being maintained and functioning properly. Any issues that are identified are resolved in the same day.

Recommendation 26: 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 27: All disturbed areas should be re-seeded as soon as possible to maximize erosion protection and to minimize volunteer populations of invasive species which may spread to the natural heritage features.

Recommendation 28: Roof runoff to bare ground can generate considerable sediment movement beyond the construction limits. Until the grounds have been vegetated and stable for housing and development adjacent to vegetation, roof leaders should be directed to the streets or nearby stabilized vegetated areas.

8.3.2 Construction Site Management

Recommendation 29: Regular cleanup of the Subject Lands must be completed during construction and post-construction to ensure the adjacent natural heritage features are not degraded.

Recommendation 30: Equipment should be cleaned prior to arrival on site including tires, undercarriage, and any part of the equipment that may transport invasive seeds to the site.

Recommendation 31: Noise disturbance should be limited to allowable hours per the Municipality of Thames Centre By-Law. Where possible, construction noise from heavy machinery should also be avoided during the migratory bird breeding period, defined as April 1st to August 31st, to avoid disturbance of birds nesting within the natural features.

Recommendation 32: Dust abatement measures (e.g. watering) are recommended if site grading will occur during extended dry weather periods.

8.4 Post Construction Impacts and Mitigation Recommendations

8.4.1 Landowner Education

Recommendation 33: Develop an information package to educate the land owner(s) on appropriate ways to dispose of landscaping and lawn maintenance waste, garbage, and protect the natural heritage components beyond the property boundaries. This is important for preservation of the adjacent Significant natural features.

Recommendation 34: The installation of educational signage on permanent fencing post-development is recommended to inform land owner(s) of the significance of the adjacent Significant natural heritage features.

Recommendation 35: Information material (i.e. posters or brochures) should be provided to new residents to inform them of the natural heritage significance of the adjacent woodlands and the species present within.

8.5 Monitoring Plan

Mitigation and compensation measures recommended in this EIS aim to minimize and compensate for the direct and indirect impacts to the significant natural heritage features and functions. The monitoring plan is recommended to document the implementation of the mitigation and compensation measures during construction and post-construction.

The monitoring plan will be 2-phase and will consist of a construction monitoring plan and a long-term post-construction plan. The construction monitoring plan will monitor for construction-related impacts, document successes or deficiencies of the implemented mitigation measures and provide guidance on remedial actions for circumstances when mitigation is not successful [e.g. Erosion and Sedimentation Control (ESC) measures]. This plan should continue from clearing and grubbing through to building construction until grounds adjacent to natural features are vegetated and stabilized. This plan will be developed during the detailed design stage. Reports should be made available to the UTRCA and Thames Centre staff.

Long-term post-construction monitoring shall evaluate the success of the proposed active naturalization efforts and woodland compensation, as well as areas of invasive species management. This plan should include remedial actions that are triggered if effects exceed pre-determined thresholds (e.g. supplemental plantings if survival rates are low). Monitoring requirements should be determined at the detailed design stage in consultation with agency staff.

Recommendations for monitoring include, but are not limited to:

- Encroachment activities and correction – once the development is at 80% build-out, annual reporting to the municipality of Thames Centre should be completed for two years

- Encroachment into the adjacent Significant Woodland and Significant Wetland should be monitored for two years post-construction (e.g., litter present in natural features, informal trail creation) and additional strategies should be implemented if required
- Vegetation monitoring completed for two years after planting to document compliance with the plans (e.g., the correct species and quantities were planted, tree protection measures were successful), and establishment of planted material. Implementation of adaptive management to correct deficiencies.
- Adaptive management strategies such as supplemental plantings, and/or control of non-native invasive species. Adaptive management may be triggered by poor survival of planted material, insufficient vegetation cover, and the presence of unacceptable non-native and invasive species.

8.6 Net Effects

Table 7, below, summarizes potential impacts to natural heritage features and functions as well as proposed mitigation, compensation or enhancement measures.

Table 7: Net Effects

Source of Impact	Affected Feature	Predictions of Impact	Mitigation Strategy	Net Effects	Recommendations for Management and Monitoring
Artificial Lighting	Significant Woodland Permanent Wetland	Medium impacts expected - residential rear-yard lights	Development limit is directly adjacent to Significant Woodland.	No net effect	Rear-yard lights should be minimal and limited. All exterior lights should be pointed downward.
Litter and Garbage	Significant Woodland	Low impacts expected - garbage litter from residential area	Garbage bins along sidewalks; public education (brochures, signage, web-based resources) to educate about the importance about the adjacent natural features; permanent fence along limits of Significant Woodland	No net effect	Public garbage bins should be readily available and emptied regularly. On-going education.
Yard Waste	Significant Woodland	Medium impacts expected - residents transporting yard waste from dwellings to natural heritage features	Educational brochure and signage; web-based resources; permanent fence along limits of Significant Woodland	No net effect	Monitoring and on-going education is recommended to ensure the impacts of yard waste disposal is understood by residents.
Increased access to sensitive area	Significant Woodland Permanent Wetland	Medium impacts expected - vegetation could get trampled	Educational brochure and signage to discourage entry to the feature; web-based resources; permanent fence along limits of Significant Woodland	No net effect	Monitoring and ongoing education is recommended to ensure that access to natural features is avoided.
Creation of new trails	Significant Woodland Community 8 Wetland	Medium impacts expected - ad-hoc trails may trample ground cover, transport invasive species, damage SOCC floral species	Educational brochure and signage to discourage entry to the feature; web-based resources; permanent fence along limits of Significant Woodland on the east Subject Lands boundary	No net effect	
Tree damage	Significant Woodland	Medium impacts expected - limb removal	Removal of Significant Woodland is required for development proposal. Overall ecological functions of greater woodland feature will not be impacted.	No net effect	
Increased noise	Significant Woodland	Low impacts expected - low sensitivity woodland feature, no rare breeding birds	Low level noise from adjacent residential homes will not impact common breeding bird species in Significant Woodland	No net effect	Residential by-laws restrict excessive noise.

	Permanent Wetland	High impacts expected -Permanent Wetland is SWH for turtles and sensitive breeding bird species	The permanent wetland is SWH for multiple sensitive species. The current proposal includes a road a residential homes directly adjacent to the feature.		
Disturbance to wildlife during construction	Significant Woodland Permanent Wetland	Low impacts expected - disruption to activities of nearby wildlife will be temporary	Restrict timing of habitat and vegetation removal to outside breeding and sensitive periods for birds and other wildlife; make workers aware of potential incidental encounters and necessary protections; 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 may be used to direct wildlife away from active construction and toward natural areas	No net effect	Disturbance is temporary and minimal for species within the surrounding lands. Monitoring and reporting protocols for incidental wildlife encounters should be followed.
Decreased infiltration and increased run-off	Significant Woodland Permanent Wetland Sandusky Drain	Medium impacts expected - impervious surfaces decrease infiltration	LID measures should be used (ex: rooftop leader discharge and designated surface infiltration areas); sediment and erosion control fencing at edge of development; fencing should remain until the area is serviced by storm sewers and disturbed areas are seeded; all issues with sediment and erosion control measures should be resolved the same day	No net effect	
Increased erosion	Significant Woodland	Low impacts expected	Sediment and erosion control fencing installed at development limit; fencing should remain until the area is serviced by storm sewers and disturbed areas are seeded; all issues with sediment and erosion control measures should be resolved the same day; no development should occur within the dripline of the Significant Woodland	No net effect	Monitor sediment and erosion control fencing.
Increased nutrient, pesticide, chemicals, and sediment	Significant Woodland Permanent Wetland Hunt Drain	Medium impacts expected	Stormwater management system; sediment and erosion control plan during construction; sediment control measures should be installed at the discharge point of dewatering systems; ban on cosmetic pesticides; limit the use of commercial fertilizers and other chemical applications, especially adjacent to Open Space areas; consider the use of grass varieties which are heartier and require less extensive watering or fertilizers; if imported materials are required to	No net effect	

			restore onsite excavations or to raise grades, analytical testing of the imported material may be considered to ensure that standards under Ontario Regulation 153 for residential lands are met; limit the use of salts or other additives for ice and snow control on the roadways; additional treatment of road runoff may be required to prevent groundwater contamination		
Visual intrusion	Significant Woodland	Low impacts expected	Backyard landscaping and tree-planting will reduce visual intrusion to the woodland.	No net effect	
Domestic animals	Significant Woodland	Medium impacts expected - cats can kill small animals - off-leash dogs can trample plants	Public education (brochures, signage, web-based resources) to educate about the importance about the adjacent natural features.	No net effect	Ongoing education.
Introduced invasive plants	Significant Woodland	Low impacts expected - feature contains invasive plants and will be subject to an invasive plants management program; however, new invasive plants can spread if planted near feature edge	Educational brochure and web-based resources including a list of recommended native plant species for residential landscaping; permanent fence along limits of Significant Woodland to deter dumping of yard waste; active invasive species management plan; removal of invasive species within the Subject Lands and subsequent native plantings in the compensation areas	Positive net effect	Ongoing education. Monitor the success of invasive species management and establishment of native species.
Increase in urban wildlife species	Significant Woodland	Medium impacts expected - garbage can attract nuisance wildlife	Educational brochure and web-based resources including information on what attracts nuisance wildlife	No net effect	Ongoing education.
Air pollution	Natural Heritage System	No impacts expected	Residential homes will not generate substantial air pollution	No net effect	
Fire Hazards	Significant Woodland	Low impacts expected - potential for recreational gatherings	Educational brochure and web-based resources including information on potential impacts of recreational bonfires; permanent fence along limits of Significant Woodland	No net effect	Ongoing education.
Use of heavy machinery	Significant Woodland, adjacent retained trees	High impacts expected - machinery too close to swamp edge or retained trees can break off	Complete a Tree Preservation Plan for the Subject Lands; Install construction fence to restrict access to the woodland and surrounding trees during construction; tree protection	No net effect	Regular monitoring during construction to ensure tree protection fencing and sediment and erosion

– tree damage		branches or wound trunks	fencing/sediment and erosion control fencing should be inspected frequently; all issues with fencing should be resolved the same day; suitable buffers have been recommended		control fencing is functioning.
Use of heavy machinery – soil compaction	Significant Woodland, adjacent retained trees	High impacts expected - machinery too close to retained trees can compact soils over vital tree roots	Complete a Tree Preservation Plan for the Subject Lands; install construction fence to restrict access to retained wooded areas; suitable buffers have been recommended	No net effect	Regular monitoring during construction to ensure tree protection fencing and sediment and erosion control fencing is functioning, and tree roots are protected
Use of heavy machinery – oil, gasoline, grease spill	Significant Woodland, adjacent retained trees	Medium impacts expected - machinery can leak or refueling can generate spills	Establish storage/refueling area away from natural features; BMPs and a spill contingency plan (including a spill action response plan) should be in place for fuel handling, storage and onsite equipment maintenance activities to minimize the risk of contaminant releases as a result of the proposed construction activities; contractors working at the site should ensure that construction equipment is in good working order; equipment operators should have spill-prevention kits, where appropriate	No net effect	Containment of spills should be included in plan.
Changes in soil grade	Significant Woodland	Medium impacts expected - raising the grades may result in root suffocation - lowering grade may result in removal of tree roots - grade changes can alter water table or drainage patterns	Complete a Tree Preservation Plan for the Subject Lands; install construction fence along development limit to protect roots from soil compaction; suitable building setbacks have been recommended	No net effect	Regular monitoring by an ecological consultant during construction to ensure trees are protected

9.0 Summary and Conclusions

Auburn Developments Inc. (the proponent) is proposing a subdivision residential development with medium and low density homes and associated roads and services at 1598 Richmond Street, Dorchester.

The proposed development will retain wetland Communities 2 and 3 and associated Significant Wildlife Habitat through establishment of a 10-15m buffer, expanded to an average 30m buffer in this plan. The medium density block to the east will be reviewed further at detailed design as the slopes would suggest this limit could be reduced here. The Significant Woodland in the northeast corner of the Subject Lands will also be retained. The setback/buffer area should be naturalized to establish an enhanced buffer between the proposed development and the adjacent significant natural heritage features and functions. The development proposes the removal of Community 5 (not significant) and the removal of portions (edges) of Community 8. Compensation will be achieved through the creation of wetland in Community 9, directly adjacent retained portions of Community 8. A buffer from the created and current wetland will be established at detailed design.

This EIS has set out recommendations to protect the significant natural heritage features from indirect impacts. Provided these are met, it is our opinion that the proposed development can proceed.

MTE seeks comments from the Municipality of Thames Centre and the UTRCA with respect to the contents of the EIS. Formal comments can be submitted in writing to MTE of behalf of the client. Should you wish to clarify any questions or require additional information as part of the review of this EIS, do not hesitate to contact us.

All of which is respectfully submitted,

MTE CONSULTANTS INC.

Dave Hayman, M.Sc.
Manager, Natural Environments
519-204-6510 ext. 2241
dhayman@mte85.com

EXR:sdm
M:\48975\100\05-Reports\EIS Report\48975-100 1598_Richmond_Street_EIS Report_ July 25 2022.docx

10.0 References

Bird Studies Canada (BSC). 2009. Marsh Monitoring Program Participant's Handbook for Surveying Amphibians. Bird Studies Canada in cooperation with Environment Canada and U.S. Environmental Protection Agency. February 2009.

Fisheries and Ocean Canada (DFO). 2019. Aquatic Species at Risk Map. Retrieved from https://www.dfompo.gc.ca/species-especes/sara-lep/map-carte/index-eng.html

Gerson, H. 1984. Habitat Management Guidelines for Bats of Ontario. Ontario Ministry of Natural Resources. 42 pp.

Lee, H.T., Bakowsky, W.D., Riley, J., Bowles, J., Puddister, M., Uhlig, P. and McMurray, S. 1998. Ecological Land Classification for Southern Ontario: First Approximation and its Application. Ontario Ministry of Natural Resources, Southcentral Science Section, Science Development and Transfer Branch. Field Guide FG

Ministry of the Environment, Conservation and Parks (MECP). 2021. Map: Well Records. Retrieved from https://www.ontario.ca/environment-and-energy/map-well-records

MNRF. 2017. Survey Protocol for Species at Risk Bats within Treed Habitats. Ontario Ministry of Natural Resources and Forestry.

Natural Heritage Information Centre (NHIC). n.d. Make a Map: Natural Heritage Areas. Retrieved from https://www.lioapplications.lrc.gov.on.ca/Natural_Heritage/index.html?viewer=Natural_Heritage.Natural_Heritage&locale=en-CA

Oldham, M.J. 2017. List of Vascular Plants of Ontario's Carolinian Zone (Ecoregion 7E). Carolinian Canada and Ontario Ministry of Natural Resources and Forestry. Peterborough, ON. 132 pp.

Oldham, M.J., Bakowsky, W.D., and Sutherland, D.A. 1995. Floristic Quality Assessment System for Southern Ontario. Prepared for Ontario Ministry of Natural Resources, Peterborough, Ontario. December 1995. 69 pp.

Ontario American Badger Recovery Team. 2010. Recovery Strategy for the American Badger (*Taxidea taxus*) in Ontario. Ontario Recovery Strategy Series. Prepared for Ontario Ministry of Natural Resources, Peterborough, Ontario. vi + 27 pp.

Ontario Geological Survey website https://www.ontario.ca/data/ontario-geological-survey-geological-maps-and-digital-data-index

Ontario Geological Survey. 1991. Bedrock geology of Ontario, southern sheet; Ontario Geological Survey, Map 2544, scale 1:1 000 000.

Ontario Invasive Plant Council. 2020. Best Management Practices. Retrieved from https://www.ontarioinvasiveplants.ca/resources/best-management-practices/

Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA). 2020. AgMaps. Retrieved from https://www.lioapplications.lrc.gov.on.ca/AgMaps/Index.html?viewer=AgMaps.AgMaps&locale=en-CA

Ontario Ministry of Municipal Affairs and Housing (MMAH). 2020. Provincial Policy Statement. Ontario Ministry of Municipal Affairs, Toronto, Ontario. 50 pp.

Ontario Ministry of Natural Resources (OMNR). 2010. Natural Heritage Reference Manual for Natural Heritage Policies the Provincial Policy Statement, 2005. April 2010. Toronto, Ontario.

Ontario Ministry of Natural Resources (OMNR). 2000. Significant Wildlife Habitat Technical Guide. October 2000. 151 pp.

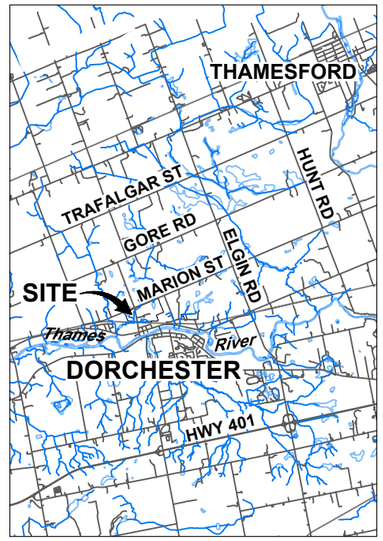
Ontario Ministry of Natural Resources and Forestry. 2015. Significant Wildlife Habitat Criterial Schedule B Ecoregion 7E. January 2015.

Thames-Sydenham & Region Source Protection Committee. 2015. Upper Thames River Source Protection Area Assessment Report. September 6, 2015.

Toronto and Region Conservation Authority (TRCA). 2019. Erosion and Sediment Control Guide for Urban Construction. 236 pp.

UTRCA. Environmental Planning Policy Manual. 2017

Figures



KEY PLAN

SCALE IN METRES
0 200 400m
1:10,000

LEGEND

SITE BOUNDARY

REFERENCES

BING IMAGERY AS OF JANUARY 18 - 2022 (IMAGE DATE UNKOWN); LAND INFORMATION ONTARIO ROAD AND WATER DATA SETS; AND CONCEPT PLAN PROVIDED BY AUBURN DEVELOPMENTS, AUTOCAD FILE "cad_161414095_20220609_draft_plan.dwg", JUNE 20 - 2022.

NOTES

THIS FIGURE IS SCHEMATIC ONLY AND TO BE READ IN CONJUNCTION WITH ACCOMPANYING TEXT.

BING IMAGERY USED FOR ILLUSTRATION PURPOSES ONLY AND NOT TO BE USED FOR MEASUREMENTS.

ALL LOCATIONS ARE APPROXIMATE.

MTE
Engineers, Scientists, Surveyors

PROJECT
ENVIRONMENTAL IMPACT STUDY
HUNTER SUBDIVISION
DORCHESTER, ONTARIO

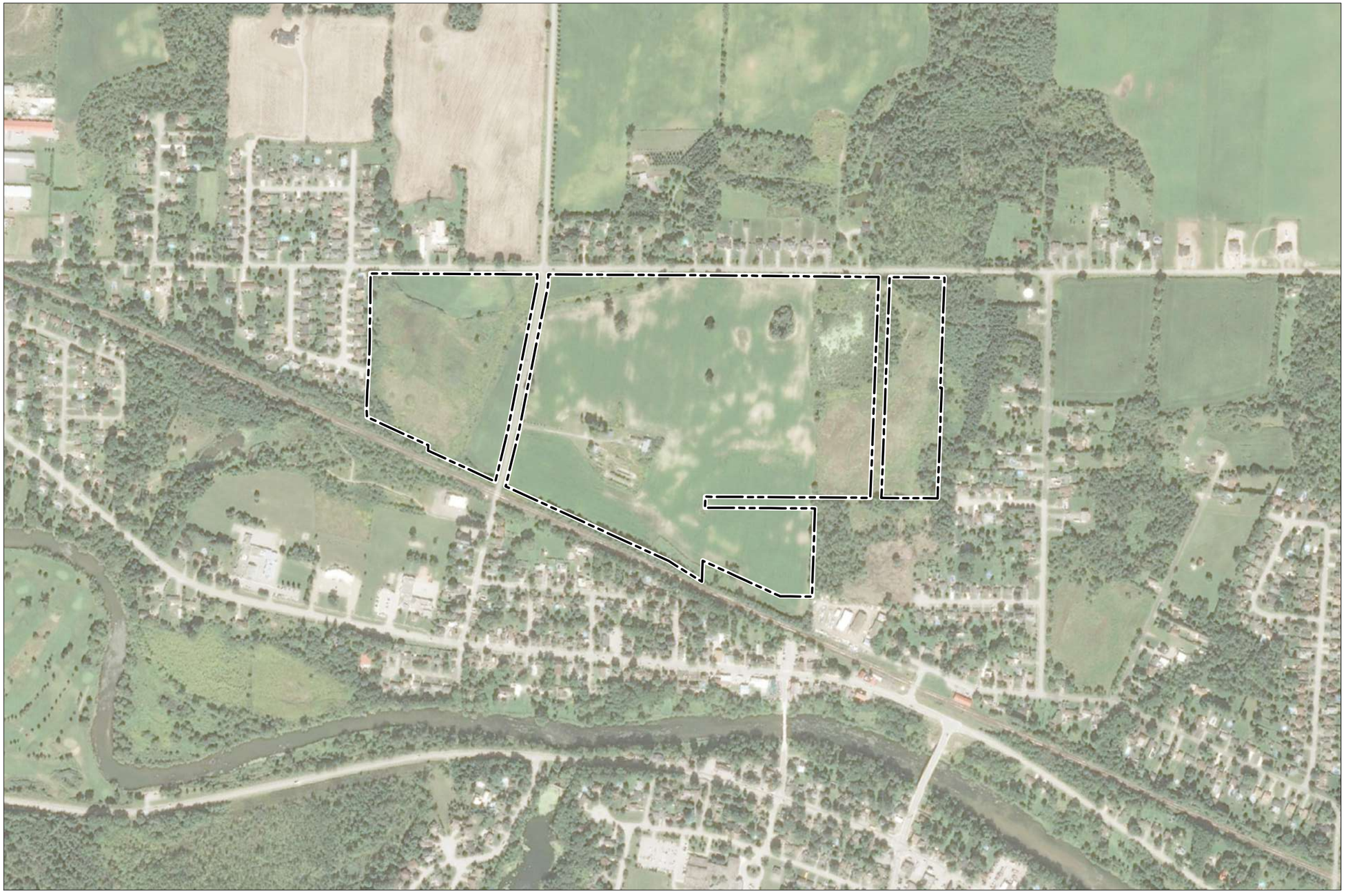
TITLE
PROJECT LOCATION

Drawn: DCH	Scale: AS SHOWN	**FIGURE 1**
Checked:	Project No.: 48975-100	
Date: June 21/22	Rev No.: 0	

Client: Auburn Developments Inc.

CAD: P:\48975\100\2_PROD\48975-100-R01 NATURAL HERITAGE REPORT\48975-100-R01001.DWG

Original Format in Tabloid (279mm x 432mm; 11" x 17")
25mm
0



PROJECT NORTH

N

LEGEND

SITE BOUNDARY

LAND USE DESIGNATIONS

- RESIDENTIAL
- NEIGHBOURHOOD COMMERCIAL
- GENERAL COMMERCIAL
- SETTLEMENT INDUSTRIAL
- INSTITUTIONAL
- PROTECTION AREA
- PARKS & OPEN SPACE
- ENVIRONMENTAL AREA
- CORE AREAS
- URBAN SETTLEMENT AREA BOUNDARY

BASE LAYERS

- ROADS
- RAIL LINE
- STREAM
- LAKE OR RIVER

SCALE IN METRES

0 150 300m

1:7,500

REFERENCES

BING IMAGERY AS OF JANUARY 18 - 2022 (IMAGE DATE UNKOWN);
SCHEDULE 'B-1', LAND USE PLAN - DORCHESTER SETTLEMENT AREA, MUNICIPALITY OF THAMES CENTRE OFFICIAL PLAN, JANUARY 24 - 2006; AND CONCEPT PLAN PROVIDED BY AUBURN DEVELOPMENTS, AUTOCAD FILE "cad_161414095_20220609_draft_plan.dwg", JUNE 20 - 2022.

NOTES

THIS FIGURE IS SCHEMATIC ONLY AND TO BE READ IN CONJUNCTION WITH ACCOMPANYING TEXT.

BING IMAGERY USED FOR ILLUSTRATION PURPOSES ONLY AND NOT TO BE USED FOR MEASUREMENTS.

ALL LOCATIONS ARE APPROXIMATE.

MTE

Engineers, Scientists, Surveyors

PROJECT

ENVIRONMENTAL IMPACT STUDY
HUNTER SUBDIVISION
DORCHESTER, ONTARIO

TITLE

LAND USE DESIGNATIONS

Drawn: DCH	Scale: AS SHOWN
Checked:	Project No.: 48975-100
Date: June 28/22	Rev No.: 0

FIGURE 2

Client: Auburn Developments Inc.

CAD: P:\48975\100\2_PROD\48975-100-R01001.DWG

Original Format in Tabloid (279mm x 432mm; 11" x 17")

25mm

0

PROJECT NORTH

Zoning ID	Description
FD	Future Development Zone
R1	Residential First Density Zone
R2	Residential Second Density Zone
OS	Open Space
EP	Environmental Protection Zone
I	Institutional Zone
OR	Office Residential Zone
GC	General Commercial Zone

SCALE IN METRES
0 150 300m
1:7,500

LEGEND

SITE BOUNDARY

REFERENCES

BING IMAGERY AS OF JANUARY 18 - 2022 (IMAGE DATE UNKOWN);
SCHEDULE 'A', ZONING PLAN MAP No. 2.1, 2.2, and 2.3, MUNICIPALITY OF THAMES CENTRE ZONING BY-LAW, MAY 2021; AND
CONCEPT PLAN PROVIDED BY AUBURN DEVELOPMENTS, AUTOCAD FILE "cad_161414095_20220609_draft_plan.dwg", JUNE 20 - 2022.

NOTES

THIS FIGURE IS SCHEMATIC ONLY AND TO BE READ IN CONJUNCTION WITH ACCOMPANYING TEXT.
BING IMAGERY USED FOR ILLUSTRATION PURPOSES ONLY AND NOT TO BE USED FOR MEASUREMENTS.
ALL LOCATIONS ARE APPROXIMATE.

MTE
Engineers, Scientists, Surveyors

PROJECT
ENVIRONMENTAL IMPACT STUDY
HUNTER SUBDIVISION
DORCHESTER, ONTARIO

TITLE
ZONING DESIGNATIONS

Drawn: DCH	Scale: AS SHOWN
Checked:	Project No.: 48975-100
Date: June 28/22	Rev No.: 0

FIGURE 3

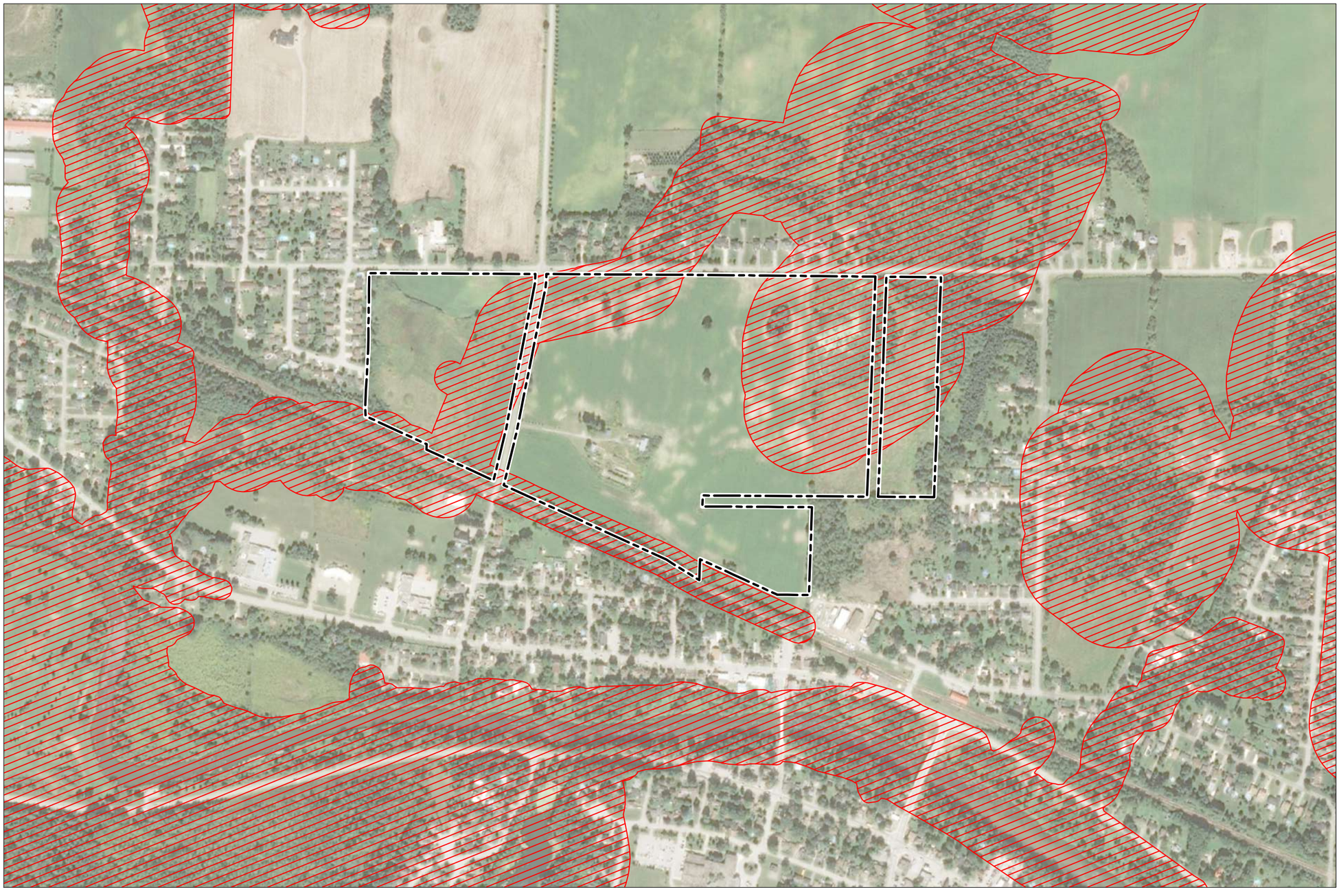
Client: Auburn Developments Inc.

CAD: P:\48975\100\2_PROD\48975-100-R01001.DWG

Original Format in Tabloid (279mm x 432mm; 11" x 17")

25mm

0



PROJECT NORTH

N

SCALE IN METRES

0 150 300m

1:7,500

LEGEND

SITE BOUNDARY

REFERENCES

BING IMAGERY AS OF JANUARY 18 - 2022 (IMAGE DATE UNKOWN);
UPPER THAMES RIVER CONSERVATION AUTHORITY (UTRCA), REGULATED SCREENING MAP; AND
CONCEPT PLAN PROVIDED BY AUBURN DEVELOPMENTS, AUTOCAD FILE "cad_161414095_20220609_draft_plan.dwg", JUNE 20 - 2022.

NOTES

THIS FIGURE IS SCHEMATIC ONLY AND TO BE READ IN CONJUNCTION WITH ACCOMPANYING TEXT.

BING IMAGERY USED FOR ILLUSTRATION PURPOSES ONLY AND NOT TO BE USED FOR MEASUREMENTS.

ALL LOCATIONS ARE APPROXIMATE.

MTE

Engineers, Scientists, Surveyors

PROJECT

ENVIRONMENTAL IMPACT STUDY
HUNTER SUBDIVISION
DORCHESTER, ONTARIO

TITLE

UTRCA REGULATION LIMIT

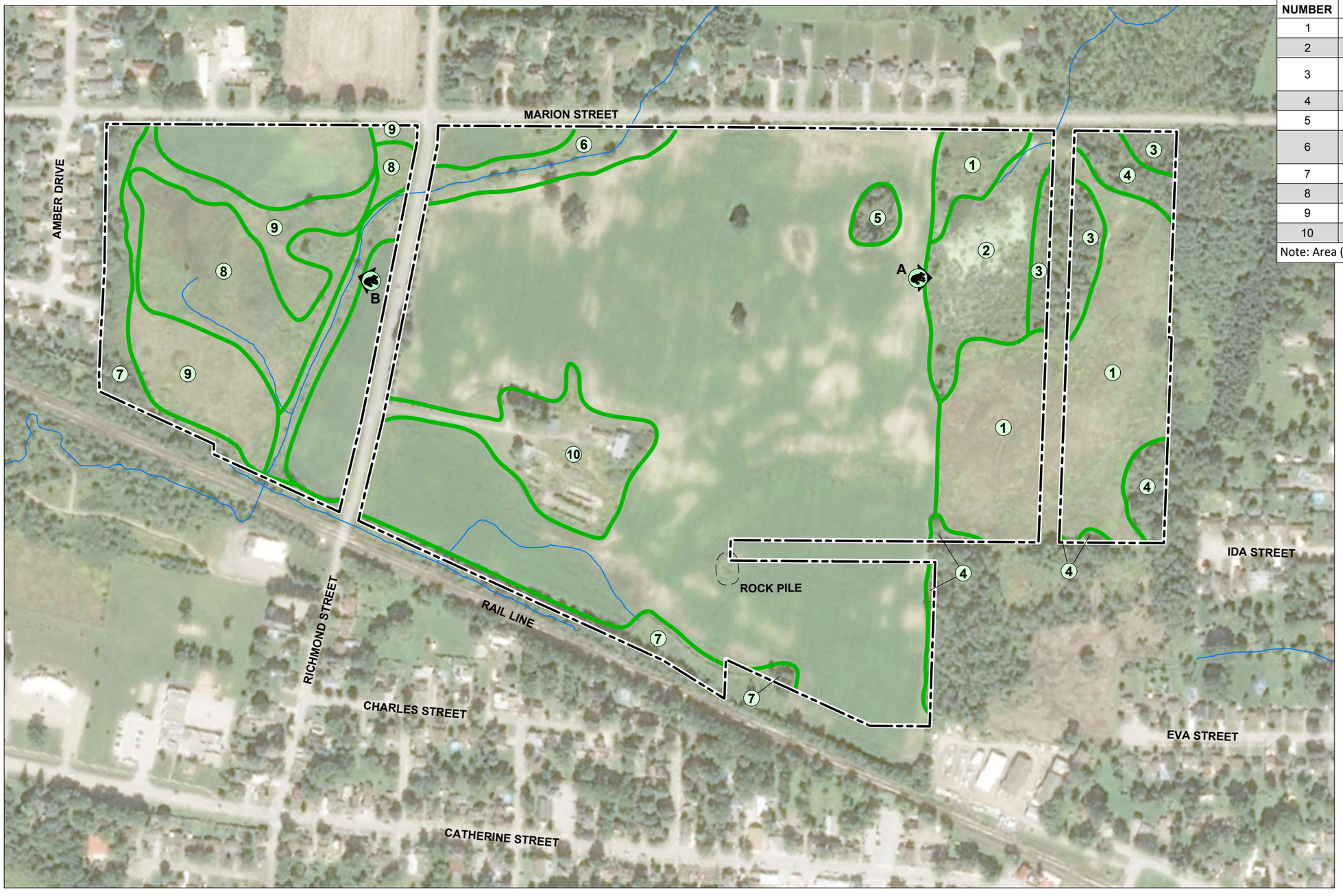
Drawn	DCH	Scale	AS SHOWN
Checked		Project No.	48975-100
Date	June 28/22	Rev No.	0

FIGURE 4

Client: Auburn Developments Inc.

CAD: P:\48975\100\2_PROD\48975-100-R01001.DWG

Original Format in Tabloid (279mm x 432mm; 11" x 17") 25mm 0



ELC NUMBER	ELC CODE	Description
1	CUM1	Mineral Cultural Meadow (5.21ha)
2	MAS3	Organic Shallow Marsh (1.73ha)
3	SWC3	White Cedar Organic Coniferous Swamp (0.78ha)
4	CUW1	Mineral Cultural Woodland (0.92ha)
5	MAS	Shallow Marsh (0.22ha)
6	MAMS/CUM1	Mineral Meadow Marsh / Mineral Cultural Meadow (1.38ha)
7	CUM1	Mineral Cultural Meadow (1.56ha)
8	MAM2	Mineral Meadow Marsh (2.47ha)
9	CUM1	Mineral Cultural Meadow (2.50ha)
10		Residential Farmyard (1.71ha)

Note: Area (ha) totals are within the Subject Lands only

PROJECT NORTH

SCALE IN METRES
0 50 100
1:4,000

LEGEND

- SITE BOUNDARY
- (1) VEGETATION COMMUNITY
- AMPHIBIAN BREEDING SURVEY STATION (LOCATION AND VIEWING DIRECTION)

REFERENCES

BING IMAGERY AS OF JANUARY 18 - 2022 (IMAGE DATE UNKOWN); MRN LIO DATA, WATER BODIES AND WATER COURSES, 2022; AND CONCEPT PLAN PROVIDED BY AUBURN DEVELOPMENTS, AUTOCAD FILE "cad_161414095_20220609_draft_plan.dwg", JUNE 20 - 2022.

NOTES

THIS FIGURE IS SCHEMATIC ONLY AND TO BE READ IN CONJUNCTION WITH ACCOMPANYING TEXT.

BING IMAGERY USED FOR ILLUSTRATION PURPOSES ONLY AND NOT TO BE USED FOR MEASUREMENTS.

ALL LOCATIONS ARE APPROXIMATE.

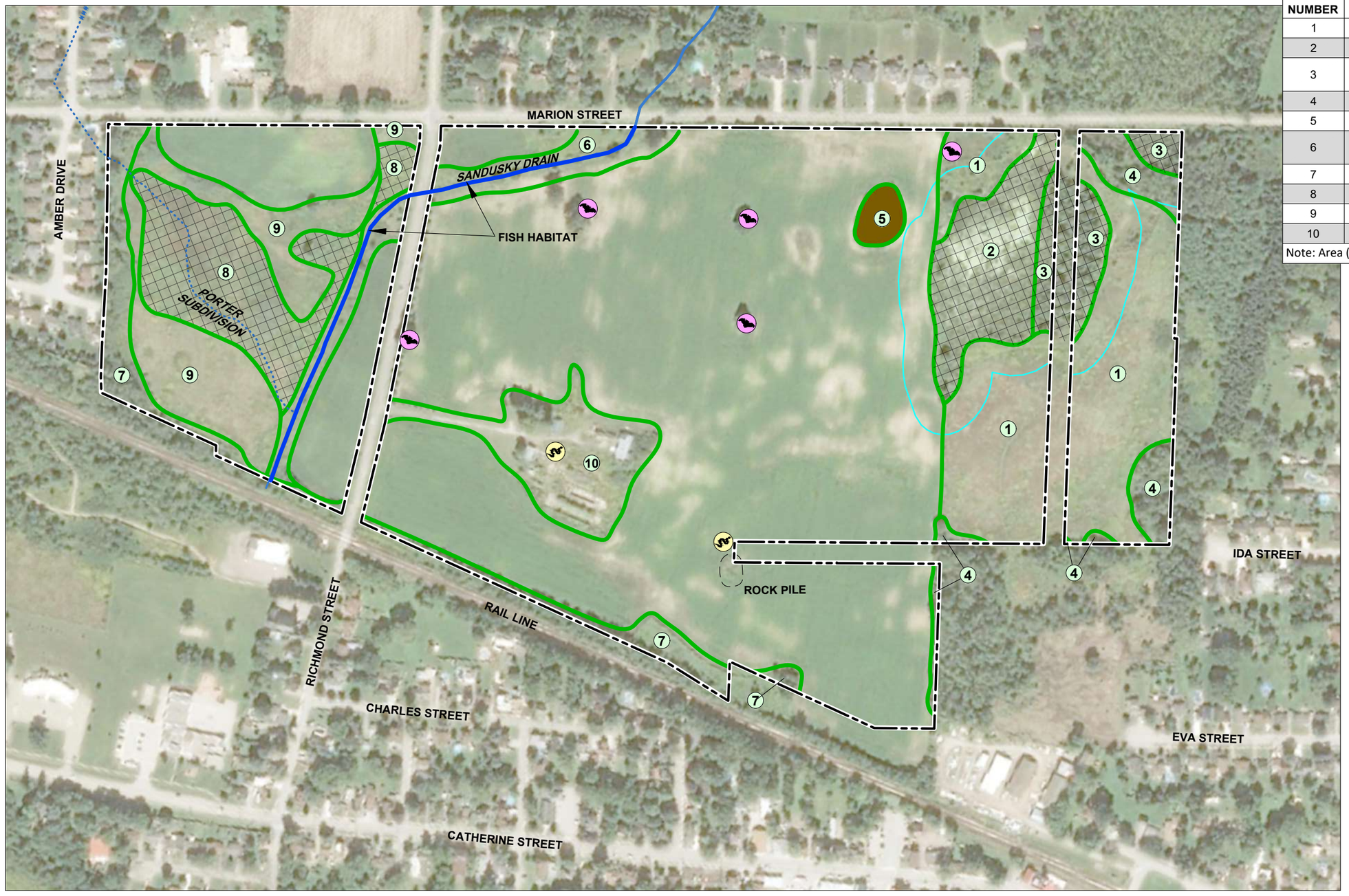
MTE
Engineers, Scientists, Surveyors

PROJECT
ENVIRONMENTAL IMPACT STUDY
HUNTER SUBDIVISION
DORCHESTER, ONTARIO

TITLE
VEGETATION COMMUNITIES AND SURVEY LOCATIONS

Drawn: DCH	Scale: AS SHOWN
Checked	Project No.: 48975-100
Date: June 28/22	Rev No.: 0

FIGURE 5



ELC NUMBER	ELC CODE	Description
1	CUM1	Mineral Cultural Meadow (5.21ha)
2	MAS3	Organic Shallow Marsh (1.73ha)
3	SWC3	White Cedar Organic Coniferous Swamp (0.78ha)
4	CUW1	Mineral Cultural Woodland (0.92ha)
5	MAS	Shallow Marsh (0.22ha)
6	MAMS/CUM1	Mineral Meadow Marsh / Mineral Cultural Meadow (1.38ha)
7	CUM1	Mineral Cultural Meadow (1.56ha)
8	MAM2	Mineral Meadow Marsh (2.47ha)
9	CUM1	Mineral Cultural Meadow (2.50ha)
10		Residential Farmyard (1.71ha)

Note: Area (ha) totals are within the Subject Lands only

PROJECT NORTH

SCALE IN METRES
0 50 100
1:4,000

LEGEND

- SITE BOUNDARY
- VEGETATION COMMUNITY (1)
- 30m FROM WETLAND
- CANDIDATE MATERNITY BAT ROOSTS
- CANDIDATE SNAKE HIBERNACULUM
- WETLAND
- ELC 5 ARE NOT TO BE RETAINED (Refer to Accompanying Text)

REFERENCES

BING IMAGERY AS OF JANUARY 18 - 2022 (IMAGE DATE UNKOWN); MRN LIO DATA, WATER BODIES AND WATER COURSES, 2022; AND CONCEPT PLAN PROVIDED BY AUBURN DEVELOPMENTS, AUTOCAD FILE "cad_161414095_20220609_draft_plan.dwg", JUNE 20 - 2022.

NOTES

THIS FIGURE IS SCHEMATIC ONLY AND TO BE READ IN CONJUNCTION WITH ACCOMPANYING TEXT.

BING IMAGERY USED FOR ILLUSTRATION PURPOSES ONLY AND NOT TO BE USED FOR MEASUREMENTS.

ALL LOCATIONS ARE APPROXIMATE.

MTE
Engineers, Scientists, Surveyors

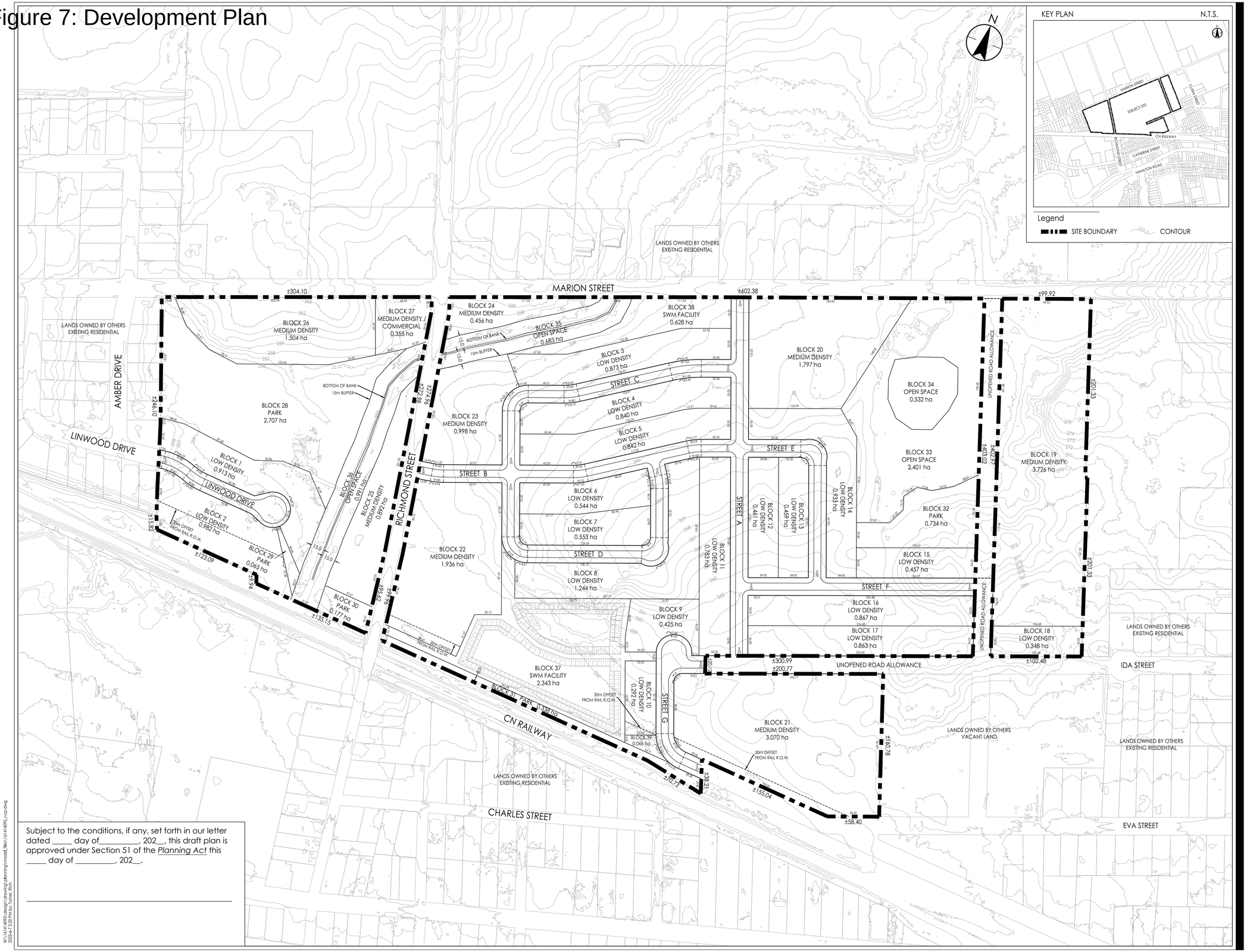
PROJECT
ENVIRONMENTAL IMPACT STUDY
HUNTER SUBDIVISION
DORCHESTER, ONTARIO

TITLE
SIGNIFICANT NATURAL HERITAGE FEATURES AND KEY FINDINGS

Drawn: DCH	Scale: AS SHOWN
Checked:	Project No.: 48975-100
Date: July 27/22	Rev No.: 0

FIGURE 6

Figure 7: Development Plan



Subject to the conditions, if any, set forth in our letter dated _____ day of_____, 202__, this draft plan is approved under Section 51 of the *Planning Act* this _____ day of _____, 202__.

_____

W:\161414095\design\drawings\planning\model_files\161414095_ccp.dwg
2022-07-22 2:20 PM by: Turner, Rich

ORIGINAL SHEET - ANSI D

Stantec

Stantec
600-171 Queens Avenue
London ON N6A 5J7
Tel. 519-645-2007
www.stantec.com

Liability Note

The Contractor shall verify and be responsible for all dimensions. DO NOT scale the drawing - any errors or omissions shall be reported to Stantec without delay.

DRAFT PLAN OF SUBDIVISION
HUNTER PROPERTY

PART OF
LOTS 9 & 10
CONCESSION 4
IN THE
TOWN OF DORCHESTER
COUNTY OF MIDDLESEX

INFORMATION REQUIRED UNDER SECTION 51(17) OF THE PLANNING ACT

A: AS SHOWN ON DRAFT PLAN
B: AS SHOWN ON DRAFT AND KEY PLAN
C: AS SHOWN ON DRAFT AND KEY PLAN
D: ACCORDING TO LAND USE SCHEDULE
E: RESIDENTIAL, AGRICULTURAL
F: AS SHOWN ON DRAFT PLAN
G: AS SHOWN ON DRAFT AND KEY PLAN
H: MUNICIPAL PIPED WATER TO BE INSTALLED
I : T.B.D.
J: AS SHOWN ON DRAFT PLAN
K: MUNICIPAL SANITARY AND STORM SEWERS TO BE INSTALLED
L: AS SHOWN ON PLAN

SCHEDULE OF LAND USE

LOW DENSITY RESIDENTIAL	- BLOCKS 1 - 18	12.679 ha
MEDIUM DENSITY RESIDENTIAL	- BLOCKS 19 - 26	14.379 ha
MD RESIDENTIAL / COMMERCIAL	- BLOCKS 27	0.355 ha
PARK	- BLOCKS 28 - 32	4.021 ha
OPEN SPACE	- BLOCKS 33 - 36	4.607 ha
SWM FACILITY	- BLOCKS 37 - 38	2.971 ha
PUMPING STATION	- BLOCK 39	0.066 ha
ROADS		4.634 ha
	TOTAL	43.712 ha

OWNER'S AUTHORIZATION

THE UNDERSIGNED AUTHORIZES THE PREPARATION AND SUBMISSION OF THIS DRAFT PLAN OF SUBDIVISION.

JAMIE CRICH, PRESIDENT
1319776 ONTARIO INC.
AUTHORIZING AGENT

DATE

SURVEYOR'S CERTIFICATE

I HEREBY CERTIFY THAT THE BOUNDARIES OF THE LAND TO BE SUBDIVIDED, AS SHOWN ON THIS PLAN, AND THEIR RELATIONSHIP TO ADJACENT LANDS ARE ACCURATELY AND CORRECTLY SHOWN.

JEREMY C.E. MATTHEWS O.L.S.
STANTEC GEOMATICS

DATE

File Name: 161414095_ccp	RT	BB	RT	22.06.07
	Dwn.	Chkd.	Dsgn.	YY.MM.DD

Client/Project
1319776 ONTARIO INC.

HUNTER PROPERTY

Dorchester, ON Canada

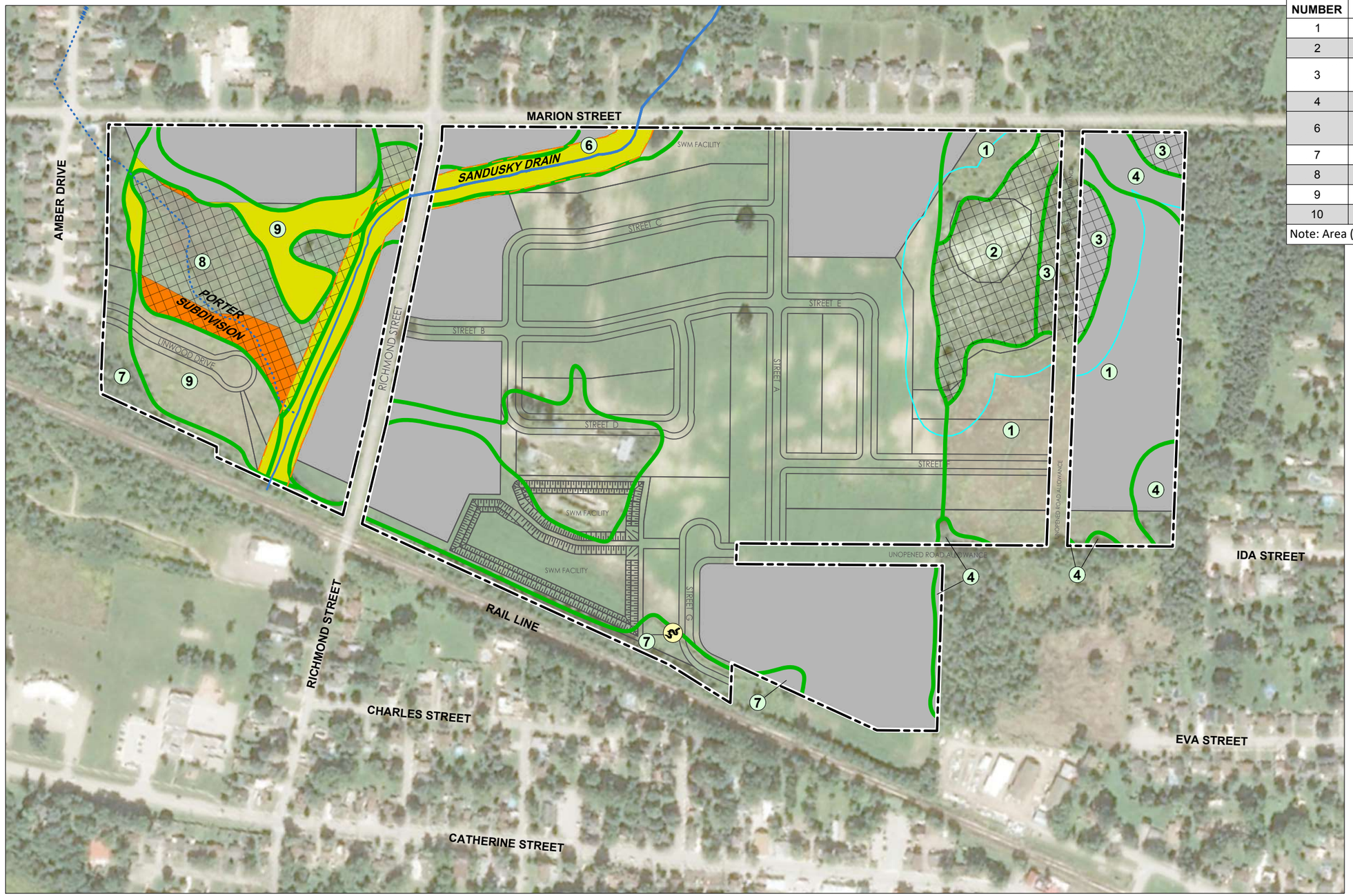
Title
DRAFT PLAN OF SUBDIVISION

Project No.	Scale	Revision
161414095	HORZ – 1 : 2000 (20 0 40m)	
Drawing No.	Sheet	
1	1 of 1	

Client: Auburn Developments Inc.

CAD: P:\48975\100\2_PROD\48975-100-R01 ENVIRONMENTAL IMPACT STUDY\48975-100-R01008.DWG

Original Format in Tabloid (279mm x 432mm; 11" x 17")



ELC NUMBER	ELC CODE	Description
1	CUM1	Mineral Cultural Meadow (5.21ha)
2	MAS3	Organic Shallow Marsh (1.73ha)
3	SWC3	White Cedar Organic Coniferous Swamp (0.78ha)
4	CUW1	Mineral Cultural Woodland (0.92ha)
6	MAMS/CUM1	Mineral Meadow Marsh / Mineral Cultural Meadow (1.38ha)
7	CUM1	Mineral Cultural Meadow (1.56ha)
8	MAM2	Mineral Meadow Marsh (2.47ha)
9	CUM1	Mineral Cultural Meadow (2.50ha)
10		Residential Farmyard (1.71ha)
Note: Area (ha) totals are within the Subject Lands only		

PROJECT NORTH

REFERENCES

BING IMAGERY AS OF JANUARY 18 - 2022 (IMAGE DATE UNKOWN);
MRN LIO DATA, WATER BODIES AND WATER COURSES, 2022; AND
CONCEPT PLAN PROVIDED BY AUBURN DEVELOPMENTS, AUTOCAD FILE "cad_161414095_20220609_draft_plan.dwg", JUNE 20 - 2022.

SCALE IN METRES
0 50 100
1:4,000

LEGEND

- SITE BOUNDARY
- VEGETATION COMMUNITY
- 30m FROM WETLAND
- 15m FROM DRAIN
- CONSTRUCTED SNAKE HIBERNACULUM
- WETLAND
- AREA OF DEVELOPMENT (Medium Density)
- WETLAND REMOVED FOR DEVELOPMENT (0.53ha)
- NATURALIZATION TO WETLAND
  Total Area of 1.85ha
  Breakdown:
  15m from Drain Area/ELC 9 Area overlap: 0.07ha
  Remaining ELC 9 Area: 0.81ha
  Remaining 15m from Drain Area: 0.97ha

NOTES

THIS FIGURE IS SCHEMATIC ONLY AND TO BE READ IN CONJUNCTION WITH ACCOMPANYING TEXT.

BING IMAGERY USED FOR ILLUSTRATION PURPOSES ONLY AND NOT TO BE USED FOR MEASUREMENTS.

ALL LOCATIONS ARE APPROXIMATE.

MTE
Engineers, Scientists, Surveyors

PROJECT
ENVIRONMENTAL IMPACT STUDY
HUNTER SUBDIVISION
DORCHESTER, ONTARIO

TITLE
DEVELOPMENT OVERLAY

Drawn: DCH	Scale: AS SHOWN
Checked:	Project No.: 48975-100
Date: July 27/22	Rev No.: 0

FIGURE 8

Appendix A

Record of Pre-Consultation

UPPER THAMES RIVER
CONSERVATION AUTHORITY

Thames
Canadian Heritage River

"Inspiring a Healthy Environment"

January 14, 2022

MTE
123 George Street
London, Ontario N6A 3A1

Attention: Melissa Cameron [sent via email]

Dear Ms. Cameron:

Re: Proposed Terms of Reference for EIS – UTRCA Comments
1598 Richmond Street [Dorchester], Thames Centre

The Upper Thames River Conservation Authority has reviewed the proposed Terms of Reference[ToR] prepared by MTE dated July 9, 2021 for an Environmental Impact Study for 'CON 4 NRT N PT LOTS 9 & 10 PLAN 274 LOTS 1-4 S/S MARION PLAN 274 LOTS 1-4 N/S IDA,PLAN274 LOTS 5-10 S/S IDA, PLAN274 BLK 3 LOTS 7-10, PLAN274 LOTS 5,6 N/S MINNIE' the Municipality of Thames Centre, Middlesex County (the Subject Lands) known municipally as 1598 Richmond Street, Thames Centre.

PROPOSAL

As per the ToR, a low-medium residential housing development is proposed for the subject lands. The lands are designated residential and are zoned FD – Future Development and EP – Environmental Protection. *As per the Thames Centre Official Plan, an EIS is required for Planning Act Applications that propose development or site alteration within or adjacent to "green system" natural heritage features.*

NATURAL HAZARDS & NATURAL HERITAGE

As shown on the enclosed mapping, the subject lands are regulated by the UTRCA in accordance with Ontario Regulation 157/06, made pursuant to Section 28 of the *Conservation Authorities Act*.

Please be advised that unauthorized filling by a previous landowner has occurred on the property in the vicinity of the wetland near Marion Street. This matter and compensation/enhancements will need to be addressed in the EIS.

The woodlands that are located on the subject lands and the adjacent lands are considered to be significant in the Middlesex Natural Heritage Systems Study (2014). New development and site alteration is not permitted in significant woodlands. Furthermore, new development and site alteration is not permitted on adjacent lands to significant woodlands unless an Environmental Impact Study/ Development Assessment Report (EIS/DAR) has been completed to the satisfaction of the UTRCA which demonstrates that there will be no negative impact on the feature or its ecological function.

EIS Terms of Reference

Tthe following comments on the Terms of Reference need to be addressed in the EIS -

1. **The UTRCA expects a net environmental benefit upon completion of this project.**

2. Please ensure that the lists of plants species for each vegetation community includes plant metrics such as weediness, wetness, FQI, hydrological sensitivity ranking, indicator of groundwater, etc. Please ensure that the significant vegetation communities are identified, if present.

3. Please conduct soil samples for all ELC communities.

4. Please ensure that the three season botanical inventories are consistent with the following dates:
   - Spring inventory from mid-April to mid-May for ephemeral deciduous woodlands
   - Spring inventory from mid-May to early July for woodland sedges
   - Spring inventory from late April to early June for upland plants
   - Summer inventory from late June to early August for upland plants
   - Fall inventory from late August to late September for upland plants
   - Spring inventory from mid-June to mid-July for wetland plants
   - Summer inventory from late July to late August for wetland plants
   - Fall inventory from early September to early October for wetland plants

5. If possible, please provide floral inventory data in SOFIA
   https://drive.google.com/file/d/13eTnT-kce2UArLJZOXLLSwkx4bCZovaj/view

6. Please ensure that the initial breeding bird survey is conducted before the 3rd week in June.

7. Please identify any Significant Wildlife Habitat, including targeted surveys for Monarch butterflies / locations of milkweed, as well as terrestrial crayfish / chimneys, etc.

8. How will snakes be surveyed? Our preference is to assume that snakes, turtles and bats are present in suitable habitats and provide recommendations to ensure their protection. If this is not an acceptable approach, then we will require more intensive surveys for these species.

9. When screening for the possible presence of suitable habitat for Species at Risk and Significant Wildlife Habitat the entire feature, not just the portions of the natural heritage and hydrologic features that exist on the subject property, must be considered. Site specific studies are then used to determine impacts to these types of habitat resulting from the development on the subject property.

10. Please ensure that the following 3 types of maps/figures are provided to the UTRCA as an ESRI shape file or as an ESRI file geodatabase:

    i. Locations of the survey / monitoring stations of all faunal inventories (breeding birds, anurans, bats, snakes, etc.) shown on an aerial photo with the vegetation communities and aquatic habitat boundaries.

    ii. The development limit and building envelopes on an aerial photo with the vegetation communities and aquatic habitat boundaries, as well as locations of:

- national, provincial, regional and/ or local rare floral or faunal species
- any hydrologically highly sensitive vegetation communities (identified in Appendix 2 of the 2017 Wetland Water Balance Risk Evaluation by TRCA and CVC)
- any hydrologically highly sensitive flora and fauna species (identified in Appendix 3 of the 2017 Wetland Water Balance Risk Evaluation by TRCA and CVC)
- any groundwater indicators (identified in Appendix 3 of the 2017 Wetland Water Balance Risk Evaluation by TRCA and CVC)
- any discharge areas

iii. The locations of mitigation, rehabilitation and / or compensation areas, and buffers / setbacks, shown on an aerial photo with the vegetation communities and aquatic habitat boundaries.

11. The UTRCA's Aquatic Biolgist agrees with MTE that there is likely sufficient fish habitat and fish community data available [from the UTRCA] to assess the sensitivity of the drainage feature. Fish data and site map is enclosed.

    Our Aquatic Biologist has advised as follows –

    - Mixed fish community of game fish, bait fish, and suckers.
    - No Species at Risk.
    - Both cool water and warm water species have been captured.
    - Some of the sampling was done in the target window to assess thermal preference, and at least 1 cool water species was captured during those sampling periods. If the proponent is willing to use protections suitable for a cool water watercourse, the UTRCA would not require additional sampling to be conducted.

12. Please provide a discussion as to how the wetland communities receive their current water supply and how that will be maintained, including catchment areas for all of the wetlands located on site.

13. Please provide all drafts of the EIS as a word document. Both an electronic and one hard copy of the document will be required

PRE- CONSULTATION

Typically when new development is being proposed, a pre-consultation meeting is held to discuss all of the submission requirements for a complete application. Has such a meeting taken place?

In addition to an EIS, the UTRCA will also likely require the following studies as part of a complete application –

- Hydrogeological & Water Balance Assessment – to be prepared in accordance with the Conservation Ontario Hydrogeological Assessment Guidelines (2013) – to be scoped with UTRCA Staff.

- Flood Modeling – There is no current flood model available for the subject lands and the CA has received reports/ complaints that the west side of the proposed development site is subject to flooding that is greater than what our current mapping indicates.

  The proponent will have to hire a qualified professional engineer with experience in flood

modeling to undertake updated flood modeling for the site. We recommend that that the engineering consultant contact the UTRCA [Mark Shifflet and/or Stephanie Schreiner] regarding the UTRCA's submission requirements.

- Stormwater Management

- Minimum Setback & Buffer Requirements – Please note that if appropriate buffers and setbacks can be negotiated through the pre-consultation process, there may be an opportunity to waive the requirement for an EIS and Hydrogeological Assessment.

If there are any questions or if you wish to request a meeting, please contact John Bice, Land Use Planner who will be the lead on this file.

Yours truly,
UPPER THAMES RIVER CONSERVATION AUTHORITY

Christine Creighton
Land Use Planner
TT/MF/KW/CC/cc

Enclosures -
1. UTRCA Regulation Limit Mapping (please print on legal sized paper)
2. Fish Data & Site Map

c.c. UTRCA –
John Bice - Land Use Planner
Cari Ramsey & Karen Winfield – Land Use Regulations Officers
Mark Shifflet & Stephanie Schreiner – Water Resource Engineers

UTRCA (DFO, ROM, MNRF) Fish Sampling Records
(INTERNAL USE)

Hunt Drain

Sampled: **08/07/2009** Location: Dorchester C A upstream of pond

Site Code: **UT.DO113** Latitude: 42.990595 Benthic Site: No Coolest Thermal Class: cool

Agency: UTRCA Longitude: -81.073981 Mussel Site: No Electrofishing Effort (sec):

			Species at Risk (SAR) Status				Status in the Thames River Watershed		Restricted Activity Timing	
			Provincial		Federal					
Common Name	Scientific Name	# Observed	ESA2017	Srank	SARA	COSEWIC	Abundance	Distribution	MNRF	DFO
White Sucker	Catostomus commersoni	Abundant	---	S5	---	---			Mar15-June15	Mar15-June15
Brook Stickleback	Culaea inconstans	Few	---	S5	---	---	Abundant	widespread	Mar15-June15	Mar15-June15
Eastern Blacknose Dace	Rhinichthys atratulus	Many	---	S5	---	---	Abundant	widespread	Mar15-June15	Mar15-June15
Creek Chub	Semotilus atromaculatus	Abundant	---	S5	---	---	Abundant	widespread	Mar15-June15	Mar15-June15
Iowa Darter	Etheostoma exile	Few	---	S5	---	---	Common	localized	Mar15-June15	Mar15-June15
Central Mudminnow	Umbra limi	Few	---	S5	---	---	Abundant	widespread	Mar15-June15	Mar15-June15

UTRCA (DFO, ROM, MNRF) Fish Sampling Records
(INTERNAL USE)

Hunt Drain

Sampled: **16/07/2015** Location: Dorchester C A upstream of pond

Site Code: **UT.DO113** Latitude: 42.990595 Benthic Site: No Coolest Thermal Class: cool

Agency: UTRCA Longitude: -81.073981 Mussel Site: No Electrofishing Effort (sec):

			Species at Risk (SAR) Status				Status in the Thames River Watershed		Restricted Activity Timing	
			Provincial		Federal					
Common Name	Scientific Name	# Observed	ESA2017	Srank	SARA	COSEWIC	Abundance	Distribution	MNRF	DFO
White Sucker	Catostomus commersoni	Many	---	S5	---	---			Mar15-June15	Mar15-June15
Brook Stickleback	Culaea inconstans	Few	---	S5	---	---	Abundant	widespread	Mar15-June15	Mar15-June15
Eastern Blacknose Dace	Rhinichthys atratulus	Abundant	---	S5	---	---	Abundant	widespread	Mar15-June15	Mar15-June15
Northern Redbelly Dace	Chrosomus eos	Few	---	S5	---	---	Abundant	locally common		
Fathead Minnow	Pimephales promelas	Few	---	S5	---	---	Abundant	widespread	Mar15-June15	Mar15-June15
Central Mudminnow	Umbra limi	Few	---	S5	---	---	Abundant	widespread	Mar15-June15	Mar15-June15
Common Shiner	Luxilus cornutus	Abundant	---	S5	---	---	Abundant	widespread	Mar15-June15	Mar15-June15

UTRCA (DFO, ROM, MNRF) Fish Sampling Records

(INTERNAL USE)

Hunt Drain

Sampled: 09/05/2017 Location: Hunt Drain Richmond St

Site Code: UT.DO114 Latitude: 42.994505 Benthic Site: Yes Coolest Thermal Class:

Agency: UTRCA Longitude: -81.070404 Mussel Site: No Electrofishing Effort (sec):

			Species at Risk (SAR) Status				Status in the Thames River Watershed		Restricted Activity Timing	
			Provincial		Federal					
Common Name	Scientific Name	# Observed	ESA2017	Srank	SARA	COSEWIC	Abundance	Distribution	MNRF	DFO
Eastern Blacknose Dace	Rhinichthys atratulus	Few	---	S5	---	---	Abundant	widespread	Mar15-June15	Mar15-June15

UTRCA (DFO, ROM, MNRF) Fish Sampling Records
(INTERNAL USE)

Hunt Drain

Sampled: 27/07/2010 Location: Hunt Drain Richmond St

Site Code: UT.DO114 Latitude: 42.994505 Benthic Site: Yes Coolest Thermal Class:

Agency: UTRCA Longitude: -81.070404 Mussel Site: No Electrofishing Effort (sec):

			Species at Risk (SAR) Status				Status in the Thames River Watershed		Restricted Activity Timing	
			Provincial		Federal					
Common Name	Scientific Name	# Observed	ESA2017	Srank	SARA	COSEWIC	Abundance	Distribution	MNRF	DFO
White Sucker	Catostomus commersoni	Abundant	---	S5	---	---			Mar15-June15	Mar15-June15
Brook Stickleback	Culaea inconstans	Few	---	S5	---	---	Abundant	widespread	Mar15-June15	Mar15-June15
Eastern Blacknose Dace	Rhinichthys atratulus	Abundant	---	S5	---	---	Abundant	widespread	Mar15-June15	Mar15-June15
Creek Chub	Semotilus atromaculatus	Abundant	---	S5	---	---	Abundant	widespread	Mar15-June15	Mar15-June15
Largemouth Bass	Micropterus salmoides	Many	---	S5	---	---	Abundant	widespread	May 1-July15	May 1-July15

UTRCA (DFO, ROM, MNRF) Fish Sampling Records
(INTERNAL USE)

Dorchester CA Dam

Sampled: **25/08/2011** Location: Concession 4NTR Lot 8 at site of Dorchester CA dam North of Catherine St East of Shaw Rd

Site Code: **UT.DO140** Latitude: 42.990332 Benthic Site: No Coolest Thermal Class: cool

Agency: UTRCA Longitude: -81.075796 Mussel Site: No Electrofishing Effort (sec):

			Species at Risk (SAR) Status				Status in the Thames River Watershed		Restricted Activity Timing	
			Provincial		Federal					
Common Name	Scientific Name	# Observed	ESA2017	Srank	SARA	COSEWIC	Abundance	Distribution	MNRF	DFO
Largemouth Bass	Micropterus salmoides	Unknown	---	S5	---	---	Abundant	widespread	May 1-July15	May 1-July15

UTRCA (DFO, ROM, MNRF) Fish Sampling Records

(INTERNAL USE)

Dorchester CA Dam

Sampled: **26/08/2011** Location: Concession 4NTR Lot 8 at site of Dorchester CA dam North of Catherine St East of Shaw Rd

Site Code: **UT.DO140** Latitude: 42.990332 Benthic Site: No Coolest Thermal Class: cool

Agency: UTRCA Longitude: -81.075796 Mussel Site: No Electrofishing Effort (sec):

			Species at Risk (SAR) Status				Status in the Thames River Watershed		Restricted Activity Timing	
			Provincial		Federal					
Common Name	Scientific Name	# Observed	ESA2017	Srank	SARA	COSEWIC	Abundance	Distribution	MNRF	DFO
White Sucker	Catostomus commersoni	Abundant	---	S5	---	---			Mar15-June15	Mar15-June15
Largemouth Bass	Micropterus salmoides	Few	---	S5	---	---	Abundant	widespread	May 1-July15	May 1-July15
Black Crappie	Pomoxis nigromaculatus	Few	---	S4	---	---	Uncommon	localized	Mar15-June15	Mar15-June15

UTRCA (DFO, ROM, MNRF) Fish Sampling Records

(INTERNAL USE)

Dorchester CA Dam

Sampled: 31/08/2011 Location: Concession 4NTR Lot 8 at site of Dorchester CA dam North of Catherine St East of Shaw Rd

Site Code: UT.DO140 Latitude: 42.990332 Benthic Site: No Coolest Thermal Class: cool

Agency: UTRCA Longitude: -81.075796 Mussel Site: No Electrofishing Effort (sec):

			Species at Risk (SAR) Status				Status in the Thames River Watershed		Restricted Activity Timing	
			Provincial		Federal					
Common Name	Scientific Name	# Observed	ESA2017	Srank	SARA	COSEWIC	Abundance	Distribution	MNRF	DFO
White Sucker	Catostomus commersoni	Few	---	S5	---	---			Mar15-June15	Mar15-June15
Largemouth Bass	Micropterus salmoides	Many	---	S5	---	---	Abundant	widespread	May 1-July15	May 1-July15

UTRCA (DFO, ROM, MNRF) Fish Sampling Records
(INTERNAL USE)

Dorchester CA Dam

Sampled: **09/10/2001** Location: Concession 4NTR Lot 8 at site of Dorchester CA dam North of Catherine St East of Shaw Rd

Site Code: **UT.DO140** Latitude: 42.990332 Benthic Site: No Coolest Thermal Class: cool

Agency: UTRCA Longitude: -81.075796 Mussel Site: No Electrofishing Effort (sec):

			Species at Risk (SAR) Status				Status in the Thames River Watershed		Restricted Activity Timing	
			Provincial		Federal					
Common Name	Scientific Name	# Observed	ESA2017	Srank	SARA	COSEWIC	Abundance	Distribution	MNRF	DFO
White Sucker	Catostomus commersoni	Few	---	S5	---	---			Mar15-June15	Mar15-June15
Brook Stickleback	Culaea inconstans	Many	---	S5	---	---	Abundant	widespread	Mar15-June15	Mar15-June15
Johnny Darter	Etheostoma nigrum	Few	---	S5	---	---	Abundant	widespread	Mar15-June15	Mar15-June15
Creek Chub	Semotilus atromaculatus	Many	---	S5	---	---	Abundant	widespread	Mar15-June15	Mar15-June15
Least Darter	Etheostoma microperca	Few	---	S4	---	Not at Risk	Common	widespread	Mar15-June15	Mar15-June15
Golden Shiner	Notemigonus crysoleucas	Few	---	S5	---	---	Common	localized		
Fathead Minnow	Pimephales promelas	Few	---	S5	---	---	Abundant	widespread	Mar15-June15	Mar15-June15
Brown Bullhead	Ameiurus nebulosus	Abundant	---	S5	---	---	Uncommon	widespread	Mar15-June15	Mar15-June15
Common Shiner	Luxilus cornutus	Few	---	S5	---	---	Abundant	widespread	Mar15-June15	Mar15-June15
Bluntnose Minnow	Pimephales notatus	Many	---	S5	---	Not at Risk	Abundant	widespread		

COSEWIC Status: The Committee on the Status of Endangered Wildlife in Canada (COSEWIC) asseses species for their consideration for legal protection and recover (or management) under the Species at Risk Act (SARA).

Extinct: A wildife species that no longer exists.

Extirpated: A wildlife species no longer existing in the wild in Canada, but exists elsewhere.

Endangered: A wildlife species facing imminent extirpation or extinction.

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

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

Not at Risk: A wildlife species that has been evaulated and found to be not at risk of extinction given the current cirumstances.

Data Deficient: A category that applies when the available information is insufficient (a) to resolve a wildlife species' eligibility for assessment or (b) to permit an assessment of the wildlife species' risk of extinction.

Reference: www.cosewic.gc.ca (current to November 2011)

SARA Status: The federal at risk designation for species under the Species at Risk Act (SARA)

Reference: www.sararegistry.gc.ca (current to December 2011)

ESA 2007 / SARO Status: Species at Risk in Ontario (SARO) are designated be the Ontario Ministry of Natural Resources and Forestry (OMNRF) in accordance with the provincial Endangered Species Act (ESA) through the Committee on the Status of Species at Risk in Ontario (COSSARO).

Extirpated: A native species that no longer exists in the wild in Ontario but still occurs elsewhere.

Endangered: A native species facing imminent extirpation or extinction in Ontario.

Threatened: A native species that is at risk of becoming endangered in Ontario.

Special Concern: A native species that is sensitive to human activities or natural events which may cause it to become endangered or thereatened.

Reference: www.ontario.ca/speciesatrisk (current to Janurary 2012)

Provincial Rank (SRANK): Privincial (or Subnational) ranks are used by the Natural Hertiage Information Centre (NHIC) to set protection priorities for rare species and natural communities. These ranks are assigned to consider only those factors within the political boundaries of Onatio.

SX Presumed Extirpated: Species or community is believed to be extirpated from the nation or state/province. Not located despite intensive searches of historical sites and other appropriate habitat, and vitually no likelihood that it will be rediscovered.

SH Possibly Extirpated (Historical): Species or community occurred historically in the nation or state/province, and there is some possibility that it may be rediscovered. Its presence may not have been verified in the past 20-40 years. A species or community could become NH or SH without such a 20-40 year delay if the only known occurrences in a nation or state/province were destroyed or if it had been extensively and unsuccessfully looked for. The NH or SH rank is reserved for species or communities for which some effort has been made to relocate occurrences, rather than simply using this status for all elements not known from verified extant occurences.

S1 Critically imperiled: Critically imperiled in the nation or state/province because of extreme rarity (often 5 or fewer occurrences) or because of some factor(s) such as very steep declines making it especially vulnerable to extirpation from the state/province.

S2 Imperiled: Imperiled in the nation or state/province because of rarity due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors making it very vulnerable to extirpation from the nation or state/province.

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

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

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

SNR Unranked: Nation or state/province conservation status not yet assessed.

SU Unrankable: Currently unrankable due to lack of lack of information or substantially conflicting information about status or trends.

SNA Not Applicable: A conservation stutus rank is not applicable because the species is not a suitable target for conservation activities.

S#S# Range Rank: A numeric range rank (e.g. S2S3) is used to indicate any range of uncertainty abou the status of the species or community. Ranges cannot skip more than one rank (e.g. SU is used rather than S1S4).

Reference: http://nhci.mnr.gov.on.ca/MNR/nhic/nhic.cfm (current to March 2012)

Abundance: Referes to the relative abundance of the species found wihtin the waters of the Upper Thames River watershed based on sampling results. Some species may be underrepresented as they are difficult to capture with commonly used sampling methods.

Abundant: Occurred in >25% of the sampling records.

Common: Occurred in 10-25% of the sampling records.

Uncommon: Occurred in <10% of the sampling records.

Distribution: Based on the number of Upper Thames Watershed Report Card subwatersheds in which a species has been recorded.

Throughout: Recorded in >20 subwatersheds.

Widespread: Recorded in 10-20 subwatersheds.

Localized: Recorded in <10 subwatersheds.

Appendix B

Species Records Review Tables

Table A: Protected Species Identified During the Species Records Review

Species	SARO Status	Source(s)	Habitat Description	Habitat Suitability in the Subject Lands and 120 m Adjacent Lands	Probability of Occurrence on the Subject Lands
American Badger	END	Added due to under-representation in species records	American Badgers have been found in a variety of habitats but are most commonly found in grasslands, fields, or open canopied forests. The main requirement for this species is suitable soil conditions conducive for digging and available prey (Environment and Climate Change Canada, 2021).	The Subject Lands do contain suitable grasslands and Adjacent forest habitat for American Badgers.	Moderate
Butternut	END	Added due to under-representation in species records	Butternut trees are found in deciduous or mixed forests with a preference for stream banks or well-drained soils. This species also prefers open habitat such as in canopy openings or near the forest edge (Environment Canada, 2010).	The Subject Lands (Communities 3 and 4) may provide suitable habitat for Butternut. No Butternut trees were observed during any site investigation.	Absent
Little Brown Myotis, Northern Myotis, Tri-coloured Bat	END	Added due to under-representation in species records	These three bat species require habitat for overwintering (hibernacula in caves, mines, wells), roost habitat in the summer (trees with loose bark, cracks, holes, dead foliage), and foraging habitat. Little Brown Myotis is frequently found roosting in anthropogenic structures such as houses, barns, bat boxes, and bridges (Environment Canada, 2015).	Five (5) candidate bat maternity roosts were identified within the Subject Lands. Adjacent lands to the west also contain wooded areas that may provide suitable maternity roost trees.	Moderate
Red-headed Woodpecker *(Melanerpes erythrocephalus)*	END	OBBA, 2005	Red-headed Woodpeckers require mature lowland and upland deciduous woodlands for breeding habitat. Woodlands usually possess low canopy cover, open understories and large, tall trees, in particular beech or oak. Red-headed Woodpeckers can be found in a variety of habitats including, orchards, flooded woodlands, parks, golf courses, river bottomlands and agricultural lands (Environment and Climate Change Canada. 2019).	Communities 3 and 4 within the Subject Lands, extending into the Adjacent Lands may provide suitable breeding habitat for this species.	Moderate
Bank Swallow *(Riparia riparia)*	THR	OBBA, 2005	Bank Swallows nest in natural or anthropogenic settings where vertical faces of silt and sand deposits are exposed	The Subject Lands do not provide suitable nesting habitat for Bank Swallows. No Bank Swallows were	Absent

			(Falconer et al., 2016). Nests can be found on river banks and sand and gravel pits.	observed during Breeding bird surveys in 2021.	
Barn Swallow (*Hirundo rustica*)	THR	OBBA, 2005	Foraging habitat include areas with abundant insects such as grasslands, farmland, open wetlands, open water, savannah, cleared right-of-ways, and even highways and residential areas (Brown & Brown, 1999). Nesting habitat includes buildings, barns, bridges, wharves, and culverts. Nocturnal roost sites are often associated with marshes or shrub thickets near water (Heagy et al., 2014).	There is abandoned buildings within Community 10 on the Subject Lands. Barn Swallows were observed foraging in Communities 2 and 9 within the Subject Lands.	Present
Blanding's Turtle *(Emydoidea blandingii)*	THR	NHIC, 2022	The Blanding's Turtle requires aquatic and terrestrial habitat for all of its biological needs. The species prefers wetland habitats with organic substrates and abundant submergent, floating and emergent vegetation (Ministry of the Environment, Conservation and Parks. 2019). They may inhabit marshes, ponds, swamps, bogs, fens and coastal wetlands. Blanding's Turtles also use terrestrial habitat for nesting, thermoregulation, movement and summer inactivity. Generally, open areas like agricultural fields, road shoulders and quarries can be used.	The Subject Lands across all vegetation communities may provide suitable both aquatic and terrestrial habitat for Blanding's Turtles.	High
Bobolink (*Dolichonyx oryzivorus*)	THR	OBBA, 2005	This species use grassland habitat including hayfields, pastures, old/abandoned fields, remnant prairies, savannahs, and alvar grasslands (McCraken et al., 2013).	The Subject Lands do provide open grassland habitat for Bobolink. During Breeding Bird surveys on June 15th and June 30th no Bobolink were observed within the Subject Lands.	Low
Chimney Swift (*Chaetura pelagica*)	THR	OBBA, 2005	Chimney Swifts typically nest and roost in chimneys or other human structures. This species often forages at high altitudes away from nesting sites (MECP, 2021a).	There are no suitable hollow trees or anthropogenic structures within or adjacent to the Subject Lands to provide nesting habitat for this species. The abandoned building chimney within the Subject Lands do not provide suitable nesting habitat as the chimney is too small and may not provide adequate protection from weather. No individuals were	Low

				identified within the Subject Lands during site investigations.	
Eastern Meadowlark (*Sturnella Magna*)	THR	NHIC, 2022	Suitable habitat includes pastures, hayfields, old/abandoned fields, and native prairies or savannahs (McCraken et al., 2013).	The Subject Lands do provide open grassland habitat for Bobolink. During Breeding Bird surveys on June 15th and June 30th no Eastern Meadowlark were observed within the Subject Lands.	Low
Least Bittern *(Ixobrychus exilis)*	THR	eBird, 2019	The Least Bittern prefers marshes with dense, tall emergent plants interspersed with shallow water and shrub vegetation for breeding (Ontario Ministry of Natural Resources and Forestry,2016).	The Subject Lands do not provide suitable nesting wetland habitat with open pools and channels. The small watercourse cutting across the Subject Lands from northwest to the southwest crossing Richmond Street, does not provide open pools with dense vegetation for nesting. No Least Bittern individuals were observed during two breeding bird surveys. Marsh breeding bird surveys conducted in the evening were not completed.	Low
Rainbow Mussel *(Villosa iris)*	THR	NHIC, 2022	The Rainbow Mussel buries itself in rivers, lakes or inland lakes. This species prefers small to medium sized rivers (Fisheries and Oceans Canada, 2016).	The Subject Lands and Adjacent Lands do not provide river or lake aquatic habitat to support this species.	Absent
Silver Shiner *(Notropis photogenis)*	THR	NHIC, 2022	Silver Shiners prefer medium to large streams or rivers with moderate or fast flows. They are typically associated with pool-riffle systems or turbulent regions (i.e below dams) (Fisheries and Oceans Canada, 2020).	The Subject Lands do not provide suitable moderate to large sized streams or rivers to support this species.	Absent
Wavy-rayed Lampmussel *(Lampsilis fasciola)*	THR	NHIC, 2022	Suitable habitat includes clear, stable rivers and streams with gravel or sandy bottoms and riffle areas (Morris, 2011).	The Subject Lands do not provide suitable small to medium sized river habitat for this species.	Absent

Table B: SOCC Identified During the Species Records Review

Species	S-Rank & SARO	Source(s)	Key Habitats Used by Species	Habitat Suitability in the Subject Lands and 120 m Adjacent Lands	Probability of Occurrence on the Subject Lands
Eastern Wood-Pewee *(Contopus virens)*	SC	OBBA, 2005	Eastern Wood-Pewees are often found in forest clearings and edges of deciduous and mixed forests (MECP, 2021b).	The Subject Lands and Adjacent Lands may provide suitable deciduous forest habitat for this species.	Moderate
Golden-Winged Warbler *(Vermivora chrysoptera)*	SC	OBBA, 2005	The Golden-winged Warblers prefer un-fragmented large forest landscapes for breeding. Habitat for nesting and foraging is associated with early successional habitats (Environment and Climate Change Canada, 2016).	The Subject Lands and Adjacent Lands do not provide large un-fragmented forest landscapes suitable for breeding.	Low
Midland Painted Turtle *(Chrysemys picta marginata)*	SC	NHIC, 2022	Midland Painted Turtles prefer swamps, ponds, fens and bogs with abundant vegetation and basking sites. Sand, loam or gravel is preferred for nesting sites (COSEWIC, 2018).	The Subject Lands and Adjacent Lands do provide suitable overwintering, nesting, movement, and thermoregulation habitat for this species. More than 5 Midland Painted Turtles were observed during each targeted survey (5).	Present
Northern Map Turtle *(Graptemys geographica)*	SC	NHIC, 2022	The Northern Map Turtle lives in rivers and lakeshores with clean water, basking sites, and abundant mollusc prey species. Northern Map Turtles hibernate on the bottom of deep slow-flowing rivers (MECP, 2021c).	The Subject Lands and Adjacent Lands do not provide suitable river habitat to support this species' life processes.	Low
Snapping Turtle (*Chelydra serpentine*)	SC, S4	ORRA, 2018	Snapping Turtles are typically found in shallow water (ex: ponds, streams). This species use areas of gravel or sand adjacent to water for nesting sites (MECP, 2021d).	The Subject Lands do provide suitable pond and adjacent nesting sites for this species.	Moderate
Wood Thrush *(Hylocichla mustelina)*	SC	OBBA, 2005	The Wood Thrush prefers moist mature deciduous and mixed forests with well-developed undergrowth (MECP, 2021e).	The Subject Lands and Adjacent Lands may provide suitable forest habitat for Wood Thrush.	Moderate

References

COSEWIC. 2018. COSEWIC assessment and status report on the Midland Painted Turtle Chrysemys picta marginata and the Eastern Painted Turtle Chrysemys picta picta in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. xvi + 107 pp.

Environment and Climate Change Canada. 2021. Recovery Strategy for the American Badger *jeffersonii* subspecies (*Taxidea taxus jeffersonii*) Western population and Eastern population in Canada [Proposed]. *Species at Risk Act* Recovery Strategy Series. Environment and Climate Change Canada, Ottawa. 2 parts, 20 pp. + 36 pp.

Environment and Climate Change Canada. 2016. Recovery Strategy for the Golden-winged Warbler (Vermivora chrysoptera) in Canada. Species at Risk Act Recovery Strategy Series. Environment and Climate Change Canada, Ottawa. vii + 59 pp

Environment Canada. 2015. Recovery Strategy for Little Brown Myotis (Myotis lucifugus), Northern Myotis (Myotis septentrionalis), and Tri-colored Bat (Perimyotis subflavus) in Canada [Proposed]. Species at Risk Act Recovery Strategy Series. Environment Canada, Ottawa. ix + 110 pp.

Environment and Climate Change Canada. 2019. Recovery Strategy for the Red-headed Woodpecker (*Melanerpes erythrocephalus*) in Canada [Proposed]. *Species at Risk Act* Recovery Strategy Series. Environment and Clima te Change Canada, Ottawa. x + 120 pp.

Falconer, M., K. Richardson, A. Heagy, D. Tozer, B. Stewart, J. McCracken, and R. Reid. 2016. Recovery Strategy for the Bank Swallow (*Riparia riparia*) in Ontario. Ontario Recovery Strategy Series. Prepared for the Ontario Ministry of Natural Resources and Forestry, Peterborough, Ontario. ix + 70 pp.

Fisheries and Oceans Canada. 2016. Recovery strategy and action plan for the Rainbow (Villosa iris) in Canada [Proposed]. Species at Risk Act Recovery Strategy Series. Fisheries and Oceans Canada, Ottawa. v + 64 pp.

Fisheries and Oceans Canada. 2020. Recovery Strategy and Action Plan for the Silver Shiner (*Notropis photogenis*) in Canada [Proposed]. *Species at Risk Act* Recovery Strategy Series. Fisheries and Oceans Canada, Ottawa. vii + 47 p.

Heagy, A., D. Badzinski, D. Bradley, M. Falconer, J. McCracken, R.A. Reid and K. Richardson. 2014. Recovery Strategy for the Barn Swallow (*Hirundo rustica*) in Ontario. Ontario Recovery Strategy Series. Prepared for the Ontario Ministry of Natural Resources and Forestry, Peterborough, Ontario. vii + 64 pp.

Morris, T. J. 2011. Recovery Strategy for the Wavy-rayed Lampmussel (*Lampsilis fasciola*) in Ontario. Ontario Recovery Strategy Series. Prepared for the Ontario Ministry of Natural Resources, Peterborough, Ontario. ii + 4 pp.+ Appendix viii + 41 pp.+ Appendix.

MECP, 2021a. Species at Risk. Chimney Swift. Retrieved from: https://www.ontario.ca/page/chimney-swift

MECP, 2021b. Species at Risk. Eastern Wood-Pewee. Retrieved from: https://www.ontario.ca/page/eastern-wood-pewee

MECP, 2021c. Species at Risk. Northern Map Turtle. Retrieved from: https://www.ontario.ca/page/northern-map-turtle

MECP, 2021d. Species at Risk. Snapping Turtle. Retrieved from: https://www.ontario.ca/page/snapping-turtle

MECP, 2021e. Species at Risk. Wood Thrush. Retrieved from: https://www.ontario.ca/page/wood-thrush

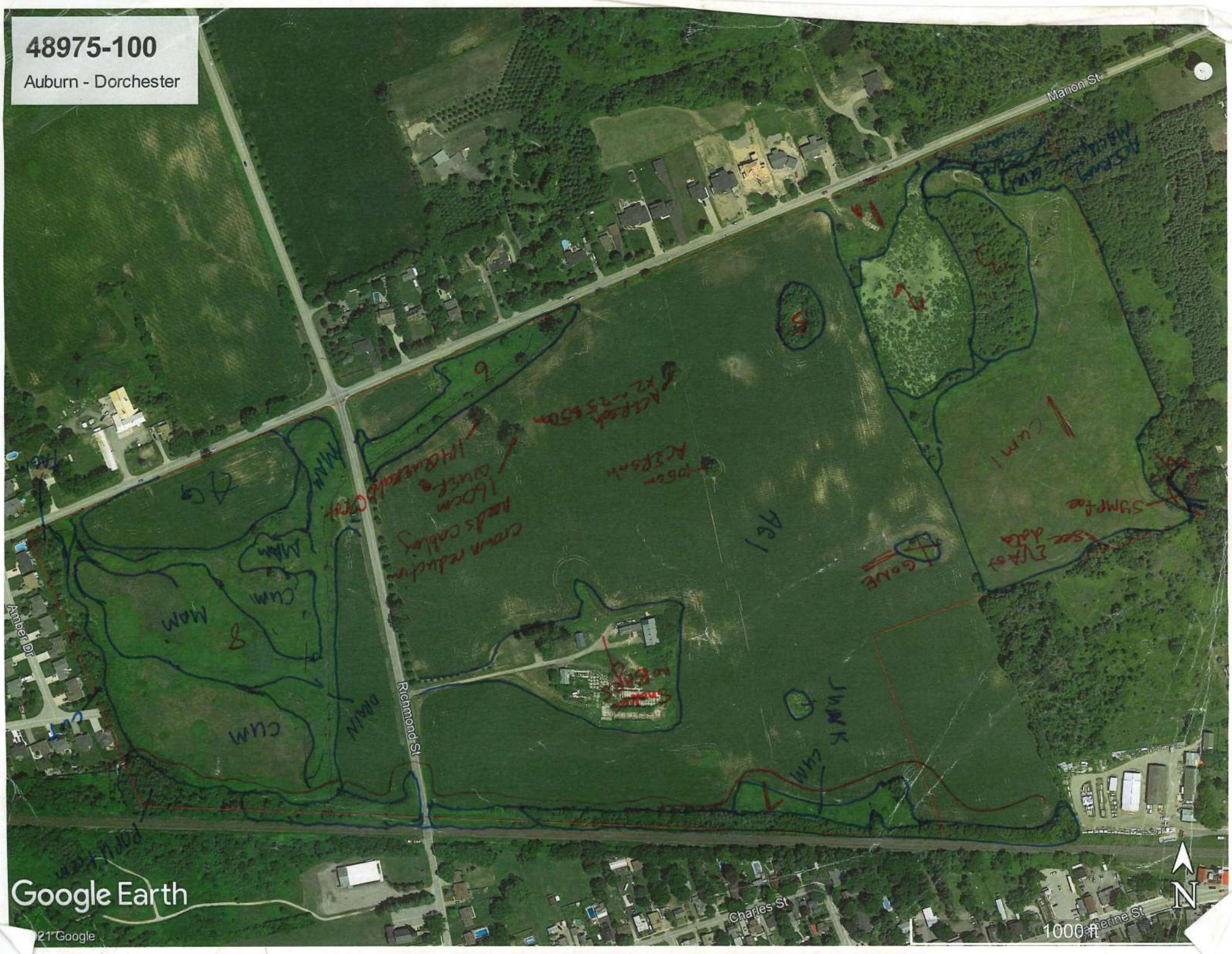
McCracken, J.D., R.A. Reid, R.B. Renfrew, B. Frei, J.V. Jalava, A. Cowie, and A.R. Couturier. 2013. Recovery Strategy for the Bobolink (*Dolichonyx oryzivorus*) and Eastern Meadowlark (*Sturnella magna*) in Ontario. Ontario Recovery Strategy Series. Prepared for the Ontario Ministry of Natural Resources, Peterborough, Ontario. viii + 88 pp.

Ministry of the Environment, Conservation and Parks. 2019. Recovery Strategy for the Blanding's Turtle (*Emydoidea blandingii*) in Ontario. Ontario Recovery Strategy Series. Prepared by the Ministry of the Environment, Conservation and Parks, Peterborough, Ontario. iv + 6 pp. + Appendix. Adoption of the Recovery Strategy for Blanding's Turtle (*Emydoidea blandingii*), Great Lakes / St. Lawrence population, in Canada (Environment and Climate Change Canada 2018).

Ontario Ministry of Natural Resources and Forestry. 2016. Recovery Strategy for the Least Bittern (*Ixobrychus exilis*) in Ontario. Ontario Recovery Strategy Series. Prepared by the Ontario Ministry of Natural Resources and Forestry, Peterborough, Ontario. v + 5 pp. + Appendix

Appendix C

Ecological Land Classification Information


48975-100
Auburn - Dorchester
Marion St
Richmond St
Amber Dr
Charles St
Catherine St
Google Earth
1000 ft
N

ELC
COMMUNITY DESCRIPTION & CLASSIFICATION

SITE: 489725-100		POLYGON: 1	
SURVEYOR(S): WH	DATE: May 20	TIME: start	
		finish	
UTMZ:	UTME:	UTMN:	

POLYGON DESCRIPTION

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

STAND DESCRIPTION:

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

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:		< 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:

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

COMMUNITY CLASSIFICATION:

		ELC CODE
COMMUNITY CLASS:		
COMMUNITY SERIES:		
ECOSITE:		CUM1
VEGETATION TYPE:		
INCLUSION		
COMPLEX		

Notes:

ELC
MANAGEMENT / DISTURBANCE

SITE:
POLYGON:
DATE:
SURVEYOR(S):

DISTURBANCE EXTENT	0	1	2	3	SCORE †
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: 45975-150
	POLYGON: 1
	DATE: May 20, 2021
	SURVEYOR(S): Will VS

LAYERS: 1 = CANOPY 2 = SUB-CANOPY 3 = UNDERSTOREY 4 = GROUND (GRD.) LAYER

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

SPECIES CODE	LAYER 1	LAYER 2	LAYER 3	LAYER 4	COL.
ACERsah					
ACERneg					
ROBIpse					
POPUdel					
VIBUlen					
CRATcru					
VIBUopu					
CORNalt					
CRAT					see pic
CRATmol					
ELAEumb					
MALUpum					
PRUNvir					
CORNrac					
MORUalb					
RHAMcat					
CORNser					
SALIint					
RUBEame					
PRUN					
ROSAros					
RUBUida					
RUBUocc					

SPECIES CODE	LAYER 1	LAYER 2	LAYER 3	LAYER 4	COL.
BLE4SD glas[illegible]					
MEDIlup					
BARBvul					
LAMIpur					
GEUMmac					
ALLIpet					
GLEChed					
HESPmat					
CENTjac					
DAUCcar					
SOLIcan					
TARAoff					
POA pra					
PLANlan					
VICIcra					

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

LAYERS: 1 = CANOPY 2 = SUB-CANOPY 3 = UNDERSTOREY 4 = GROUND (GRD.) LAYER

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

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

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

ELC
COMMUNITY DESCRIPTION & CLASSIFICATION

SITE: 48975 12		POLYGON: 2	
SURVEYOR(S):	DATE:	TIME: start	
		finish	
UTMZ:	UTME:	UTMN:	

POLYGON DESCRIPTION

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

SITE	COVER
☐ OPEN WATER	☐ OPEN
☒ SHALLOW WATER	☒ SHRUB
☐ SURFICIAL DEP.	☐ TREED
☐ BEDROCK	

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	3	1	LARI lar
2	SUB-CANOPY	3	4	SALIsp. >> CORNsp.
3	UNDERSTOREY		3	CAREsp = PHALarw > TYPHlat
4	GRD. LAYER	7	4	EMNmin

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:

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

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

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

SOIL ANALYSIS:

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

COMMUNITY CLASSIFICATION:

		ELC CODE
COMMUNITY CLASS:		MA
COMMUNITY SERIES:		MAS
ECOSITE:		MAS3
VEGETATION TYPE:		
INCLUSION		
COMPLEX		

Notes:

ELC
MANAGEMENT / DISTURBANCE

SITE:
POLYGON:
DATE:
SURVEYOR(S):

DISTURBANCE EXTENT	0	1	2	3	SCORE †
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: W8975-15J
POLYGON: 2
DATE:
SURVEYOR(S):

LAYERS: 1 = CANOPY 2 = SUB-CANOPY 3 = UNDERSTOREY 4 = GROUND (GRD.) LAYER

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

SPECIES CODE	LAYER 1	2	3	4	COL.
LARI lyal					
SALIalb					
SAL/...					
CORNser					

SPECIES CODE	LAYER 1	2	3	4	COL.
FLOEpra					
BLUE-JOINTED GRASS					
IMPAcap					
SYMPfol					
EQUlary					
TYPLat					
PINLam					
CAREsti					
EL					clump push
LPMNmin					

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

ELC
PLANT SPECIES LIST

SITE:
POLYGON:
DATE:
SURVEYOR(S):

LAYERS: 1 = CANOPY 2 = SUB-CANOPY 3 = UNDERSTOREY 4 = GROUND (GRD.) LAYER

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

SPECIES CODE	LAYER 1	2	3	4	COL.

SPECIES CODE	LAYER 1	2	3	4	COL.

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

ELC
COMMUNITY DESCRIPTION & CLASSIFICATION

SITE: 459775-100		POLYGON: 3	
SURVEYOR(S): WH VS	DATE: May 20 2021	TIME: start	finish
UTMZ:	UTME:	UTMN:	

POLYGON DESCRIPTION

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

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	THUJ occi
2	SUB-CANOPY	3	2	THUJ occi
3	UNDERSTOREY	4	2	THUJ occi
4	GRD. LAYER			SYMPoc = ARISTr = FERNS

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:		< 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:

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

COMMUNITY CLASSIFICATION:

		ELC CODE
COMMUNITY CLASS:		SW
COMMUNITY SERIES:		SWC
ECOSITE:		SWC3
VEGETATION TYPE:		
INCLUSION		
COMPLEX		

Notes:

ELC
MANAGEMENT / DISTURBANCE

SITE:
POLYGON:
DATE:
SURVEYOR(S):

DISTURBANCE EXTENT	0	1	2	3	SCORE †
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: 418916-100
POLYGON: 3
DATE:
SURVEYOR(S):

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

SPECIES CODE	LAYER 1	2	3	4	COL.
THUJocc					
LARIlar					
LONImor					
FRANaln					
CORNser					

SPECIES CODE	LAYER 1	2	3	4	COL.
TOXIrad					
Bittercress					
THALdas					
LYSIcil					
RANUrec					
TUSSfar					
OSMUcla					
CICUmac					
ONOCsen					
ARALnud					
MITEdip					
GERArob					
MITEnud					
DRYOint					
ATHYfel					
MAIAcan					
ACTEsp					
TIARcor					
ELAEpro					
RUBUhis					
ARIStri					
ZIGUlarv					
SYMPfoe					
PACKaur					

ELC PLANT SPECIES LIST

SITE:
POLYGON:
DATE:
SURVEYOR(S):

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

SPECIES CODE	LAYER 1	2	3	4	COL.

SPECIES CODE	LAYER 1	2	3	4	COL.

ELC
COMMUNITY DESCRIPTION & CLASSIFICATION

SITE: 48-975-100		POLYGON: 4	
SURVEYOR(S): CH KS	DATE: May 20	TIME: start	
		finish	
UTMZ:	UTME:	UTMN:	

POLYGON DESCRIPTION

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

SITE	COVER
☐ OPEN WATER	☐ OPEN
☐ SHALLOW WATER	☐ SHRUB
☐ SURFICIAL DEP.	☐ TREED
☐ BEDROCK	

STAND DESCRIPTION:

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

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:		< 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:

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

COMMUNITY CLASSIFICATION:

		ELC CODE
COMMUNITY CLASS:		CU
COMMUNITY SERIES:		CUW
ECOSITE:		CUW1
VEGETATION TYPE:		
INCLUSION		MAM3
COMPLEX		

Notes:

ELC
MANAGEMENT / DISTURBANCE

SITE:
POLYGON:
DATE:
SURVEYOR(S):

DISTURBANCE EXTENT	0	1	2	3	SCORE †
TIME SINCE LOGGING	> 30 YRS	15 - 30 YRS	5 - 15 YRS	0 - 5 YEARS	
INTENSITY OF LOGGING	NONE	FUEL WOOD	SELECTIVE	DIAMETER LIMIT	0
EXTENT OF LOGGING	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
SUGAR BUSH OPERATIONS	NONE	LIGHT	MODERATE	HEAVY	0
EXTENT OF OPERATIONS	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
GAPS IN FOREST CANOPY	NONE	SMALL	INTERMEDIATE	LARGE	0
EXTENT OF GAPS	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
LIVESTOCK (GRAZING)	NONE	LIGHT	MODERATE	HEAVY	9
EXTENT OF LIVESTOCK	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
ALIEN SPECIES	NONE	OCCASIONAL	ABUNDANT	DOMINANT	9
EXTENT OF ALIEN SPECIES	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
PLANTING (PLANTATION)	NONE	OCCASIONAL	ABUNDANT	DOMINANT	0
EXTENT OF PLANTING	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
TRACKS AND TRAILS	NONE	FAINT TRAILS	WELL MARKED	TRACKS OR	0
EXTENT OF TRACKS/TRAILS	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
DUMPING (RUBBISH)	NONE	LIGHT	MODERATE	HEAVY	0
EXTENT OF DUMPING	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
EARTH DISPLACEMENT	NONE	LIGHT	MODERATE	HEAVY	0
EXTENT OF DISPLACEMENT	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
RECREATIONAL USE	NONE	LIGHT	MODERATE	HEAVY	0
EXTENT OF RECR. USE	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
NOISE	NONE	SLIGHT	MODERATE	INTENSE	0
EXTENT OF NOISE	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
DISEASE/DEATH OF TREES	NONE	LIGHT	MODERATE	HEAVY	0
EXTENT OF DISEASE / DEATH	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
WIND THROW (BLOW DOWN)	NONE	LIGHT	MODERATE	HEAVY	0
EXTENT OF WIND THROW	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
BROWSE (e.g. DEER)	NONE	LIGHT	MODERATE	HEAVY	0
EXTENT OF BROWSE	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
BEAVER ACTIVITY	NONE	LIGHT	MODERATE	HEAVY	0
EXTENT OF BEAVER	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
FLOODING (pools & puddling)	NONE	LIGHT	MODERATE	HEAVY	0
EXTENT OF FLOODING	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
FIRE	NONE	LIGHT	MODERATE	HEAVY	0
EXTENT OF FIRE	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
ICE DAMAGE	NONE	LIGHT	MODERATE	HEAVY	0
EXTENT OF ICE DAMAGE	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
OTHER	NONE	LIGHT	MODERATE	HEAVY	0
EXTENT	NONE	LOCAL	WIDESPREAD	EXTENSIVE	

† INTENSITY x EXTENT = SCORE

ELC
PLANT SPECIES LIST

SITE: 48975-100
POLYGON: 4
DATE: May 20, 2021
SURVEYOR(S): JW

LAYERS: 1 = CANOPY 2 = SUB-CANOPY 3 = UNDERSTOREY 4 = GROUND (GRD.) LAYER

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

SPECIES CODE	LAYER 1	2	3	4	COL.
ACERubr	A				
MALdom	D				
FRAPen				O	
QUERub	R				
PARTri					
CRAT sp					
VITRip					

SPECIES CODE	LAYER 1	2	3	4	COL.
CALTpal					
RANUpen					
SYMPfoe					
ARCTuva					
TANAvul					
ERTHame					
GEUM					
ALLIper				D	
VIOLsp					
POBOpal					

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

ELC
PLANT SPECIES LIST

SITE:
POLYGON:
DATE:
SURVEYOR(S):

LAYERS: 1 = CANOPY 2 = SUB-CANOPY 3 = UNDERSTOREY 4 = GROUND (GRD.) LAYER

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

SPECIES CODE	LAYER 1	2	3	4	COL.

SPECIES CODE	LAYER 1	2	3	4	COL.

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

ELC

SOILS ONTARIO

SITE: 48975-100
POLYGON: 4
DATE: May 24, 2021
SURVEYOR(S):

	P/A	PP	Dr	Position	Aspect	Slope %	Type	Class	UTM Z	UTM EASTING	UTM NORTHING
1	A			1	140	2			17	495013	4760228
2	A			4	80	5			17	495009	4760181
3											
4											
5											

SOIL TEXTURE x HORIZON	1	2	3	4	5
	A CL 35 / B SiCL 47 / BC vfSCL 70	Oh 30 / C SiC 30			
A TEXTURE	CL	999			
COURSE FRAGMENTS	999	999			
B TEXTURE	SiCL	999			
COURSE FRAGMENTS	999	999			
C TEXTURE	vfSCL	SiC			
COURSE FRAGMENTS	56	999			
EFFECTIVE TEXTURE	CL	SiC			
SURFACE STONINESS	no	no			
SURFACE ROCKINESS	no	no			
DEPTH TO / OF MOTTLES	42	0			
GLEY	999	0			
BEDROCK	999	999			
WATER TABLE	999	0			
CARBONATES	999	0			
DEPTH OF ORGANICS	0	30			
PORE SIZE DISC #1					
PORE SIZE DISC #2					
MOISTURE REGIME	5	6			
SOIL SURVEY MAP					
LEGEND CLASS					

ELC

STAND CHARACTERISTICS

SITE:
POLYGON:
DATE:
SURVEYOR(S):

TREE TALLY BY SPECIES:

PRISM FACTOR

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

STAND COMPOSITION:

COMMUNITY PROFILE DIAGRAM

Notes:

ELC
COMMUNITY DESCRIPTION & CLASSIFICATION

SITE: 48975-100		POLYGON: 5	
SURVEYOR(S): G.H V.S	DATE: May 20, 2021	TIME: start	
		finish	
UTMZ:	UTME:	UTMN:	

POLYGON DESCRIPTION

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

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			SALIa 1b > POPUdel > ULMUame.
2	SUB-CANOPY			
3	UNDERSTOREY			SaAsul = ACERneg = SALIa 1b
4	GRD. LAYER			ALLIpet = WIPRcan = CIRUcan

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:	SA:

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:

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

COMMUNITY CLASSIFICATION:

		ELC CODE
COMMUNITY CLASS:		MA
COMMUNITY SERIES:		MAS
ECOSITE:		MAS
VEGETATION TYPE:		
INCLUSION		
COMPLEX		

Notes: WILLOW THICKET EDGE

ELC
MANAGEMENT / DISTURBANCE

SITE:
POLYGON:
DATE:
SURVEYOR(S):

DISTURBANCE EXTENT	0	1	2	3	SCORE †
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: 48975 100
POLYGON: 5
DATE:
SURVEYOR(S):

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

SPECIES CODE	LAYER 1	2	3	4	COL.
SALIalb					
POPUdel					
ACERneg					
ULMUame					
RIBEame					

SPECIES CODE	LAYER 1	2	3	4	COL.
TYPHang					
PHRAaus					
ALLIpet					
IMPAcap					
SOLAdul					

ELC PLANT SPECIES LIST

SITE:
POLYGON:
DATE:
SURVEYOR(S):

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

SPECIES CODE	LAYER 1	2	3	4	COL.

SPECIES CODE	LAYER 1	2	3	4	COL.

ELC
COMMUNITY DESCRIPTION & CLASSIFICATION

SITE: 458975 700		POLYGON: 6	
SURVEYOR(S): Will ER	DATE: June 2	TIME: start	
		finish	
UTMZ:	UTME:	UTMN:	

POLYGON DESCRIPTION

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

STAND DESCRIPTION:

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

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:		< 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:

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

COMMUNITY CLASSIFICATION:

		ELC CODE
COMMUNITY CLASS:		MAS
COMMUNITY SERIES:		
ECOSITE:		
VEGETATION TYPE:		
INCLUSION		
COMPLEX		

Notes:

ELC
MANAGEMENT / DISTURBANCE

SITE:
POLYGON:
DATE:
SURVEYOR(S):

DISTURBANCE EXTENT	0	1	2	3	SCORE †
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
COMMUNITY DESCRIPTION & CLASSIFICATION

SITE: 489975 4100		POLYGON: 6	
SURVEYOR(S): KN ER	DATE: June 2	TIME: start	
		finish	
UTMZ:	UTME:	UTMN:	

POLYGON DESCRIPTION

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

STAND DESCRIPTION:

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

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:		< 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:

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

COMMUNITY CLASSIFICATION:

		ELC CODE
COMMUNITY CLASS:		MAM/CU
COMMUNITY SERIES:		MAM/CUM
ECOSITE:		MAM2/CUM1
VEGETATION TYPE:		
INCLUSION		DRAIN
COMPLEX		

Notes:

ELC
MANAGEMENT / DISTURBANCE

SITE:
POLYGON:
DATE:
SURVEYOR(S):

DISTURBANCE EXTENT	0	1	2	3	SCORE †
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
COMMUNITY DESCRIPTION & CLASSIFICATION

SITE: 45975-138		POLYGON: 7	
SURVEYOR(S):	DATE:	TIME: start	
		finish	
UTMZ:	UTME:	UTMN:	

POLYGON DESCRIPTION

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

STAND DESCRIPTION:

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

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:		< 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:

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

COMMUNITY CLASSIFICATION:

		ELC CODE
COMMUNITY CLASS:		CUM
COMMUNITY SERIES:		CUM
ECOSITE:		CUM 1
VEGETATION TYPE:		
INCLUSION		
COMPLEX		

Notes:

ELC
MANAGEMENT / DISTURBANCE

SITE:
POLYGON:
DATE:
SURVEYOR(S):

DISTURBANCE EXTENT	0	1	2	3	SCORE †
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:	48975-100
POLYGON:	7
DATE:	Jn 2 2021
SURVEYOR(S):	[illegible]

LAYERS: 1 = CANOPY 2 = SUB-CANOPY 3 = UNDERSTOREY 4 = GROUND (GRD.) LAYER

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

SPECIES CODE	LAYER 1	LAYER 2	LAYER 3	LAYER 4	COL.
POPUdel					
FRAXpen					
ACERneg					
ACERfre					
SALIalb					
ACERpla					
PHYLopu					
JUNIvir					
CRATmol					
PRUNvir					
SPIRalb					
CORNrac					
SALIint					
CORNobl					

SPECIES CODE	LAYER 1	LAYER 2	LAYER 3	LAYER 4	COL.
Pu					
THALdio					
COMMON DODDER	R				
MYOSlax					
ANTHsyl					
PASTsat					
EQUIhym					
ANEMcan					
LEUCvul					
PODOpel					
CLEMvir					
HYDRvir					
GERAcar					
DOG strangler					
CIRCcan					
SOLAdul					
CHELmaj					
PHRAaus					
CHELgla					
SYMPfoe					
BARBvul					
NASToff					
SYMPfro					
ALLIpet					
GEUMurb					
URTIdio					
AMBRtri					
CARE					
GALIapa					
IMPAcap					
SOLIgig					

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

LAYERS: 1 = CANOPY 2 = SUB-CANOPY 3 = UNDERSTOREY 4 = GROUND (GRD.) LAYER

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

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

ELC
COMMUNITY DESCRIPTION & CLASSIFICATION

SITE: 459975 -120		POLYGON: 8	
SURVEYOR(S):	DATE:	TIME: start	
		finish	
UTMZ:	UTME:	UTMN:	

POLYGON DESCRIPTION

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

STAND DESCRIPTION

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

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:		< 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:

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

COMMUNITY CLASSIFICATION:

		ELC CODE
COMMUNITY CLASS:		MA / CH
COMMUNITY SERIES:		MAM / CHM
ECOSITE:		MAM2 / CHM1
VEGETATION TYPE:		
INCLUSION		
COMPLEX		

Notes:

ELC
MANAGEMENT / DISTURBANCE

SITE:
POLYGON:
DATE:
SURVEYOR(S):

DISTURBANCE EXTENT	0	1	2	3	SCORE †
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:	48975-133
POLYGON:	8
DATE:	Jn 2, 2021
SURVEYOR(S):	E.R. WH

LAYERS: 1 = CANOPY 2 = SUB-CANOPY 3 = UNDERSTOREY 4 = GROUND (GRD.) LAYER

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

SPECIES CODE	LAYER 1	2	3	4	COL.	SPECIES CODE	LAYER 1	2	3	4	COL.
ACTIlug						TYPHlang					
SALIalb						LEMNmin					
POPUalb			O			MENTspi					
POPUtre						CYPRcal					
						SOCHarv					
						AGREgig					
						SLVSTRIepinsl					
						LYSIcil					
						ASCLsyr					
						SYMPfus				R	
						EQUIarv					
						GALIapa					
						AESPmat					
						FALSE mermaidweed					
						THALdas					
						HESPmat					
VITIrip						ALLIpet					
ELAEumb						BARBvul					
VIBUlen						ECHIlab					
CORNobl						PHALaru					
VIBUlen						CICUmac					
SPIRalb						NNEMcan					
CORNser						ERIGphi					
RHUStyp						IMPAcap					
ROSAmul						VERO					
SAMBcan						AGROsto					
SALI[illegible]					?	TOXIrad					
SALIalT						RUMEpla					
[illegible]						EUTR					spotted
CORNobl						MYOSlax					
CORNmo						SAGIlat					

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

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

LAYERS: 1 = CANOPY 2 = SUB-CANOPY 3 = UNDERSTOREY 4 = GROUND (GRD.) LAYER

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

SPECIES CODE	LAYER 1	2	3	4	COL.	SPECIES CODE	LAYER 1	2	3	4	COL.
						VERBhas					
						MEDIlup					
						RUME					long hairs under leaf
						CAREbgn					
						IRISpal					
						ONOCsen					
						CAREvul					
						ZIZIhel					
						DPGstr					
						DACTglom					
						TRAGprat					
						ACHImil					
						VERBtha					
						ASCLinc					
						LINAvul					
						CALTpal				R	
						NASTuff					

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

ELC
COMMUNITY DESCRIPTION & CLASSIFICATION

SITE: 48975-100		POLYGON: 9	
SURVEYOR(S): WR EB	DATE: Jn 7	TIME: start	
		finish	
UTMZ:	UTME:	UTMN:	

POLYGON DESCRIPTION

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

SITE	COVER
☐ OPEN WATER	☐ OPEN
☐ SHALLOW WATER	☐ SHRUB
☐ SURFICIAL DEP.	☐ TREED
☐ BEDROCK	

STAND DESCRIPTION:

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

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:		< 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:

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

COMMUNITY CLASSIFICATION:

		ELC CODE
COMMUNITY CLASS:		
COMMUNITY SERIES:		
ECOSITE:		
VEGETATION TYPE:		
INCLUSION		
COMPLEX		

Notes: RT'' FARMYARD

ELC
MANAGEMENT / DISTURBANCE

SITE:
POLYGON:
DATE:
SURVEYOR(S):

DISTURBANCE EXTENT	0	1	2	3	SCORE †
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: USR75-10
POLYGON: 9
DATE: 10/7/2021
SURVEYOR(S): LH SR

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

SPECIES CODE	LAYER 1	2	3	4	COL.
ACSRsac					
CELTocc					
ACERneg					
CATIspe					
ALNIall					
ACERrub					
SALIalb					
PICEabi					
CORNser					
SYRIvul					
VIBIlan					
SAMBcan					
MORUalb					
RHUStyp					
TRANaf					
LONIhir					
WIEGsp.					

SPECIES CODE	LAYER 1	2	3	4	COL.
LOTUcor					
CIRSarv					
SUBSET OF FRAXAMER					
DIPSful					
AMBRtri					
URTIdio					
GLECHed					
DACTglo					
MYOSlax					
DAUCcar					
TRAGdub					
ARCTmin					
RUMEcri					
SILEgla					
HESPmat					
NEPAcat					
GEUMrip					
LEONcar					
BROMine					
GALIapa					

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

ELC
PLANT SPECIES LIST

SITE:
POLYGON:
DATE:
SURVEYOR(S):

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

SPECIES CODE	LAYER 1	2	3	4	COL.

SPECIES CODE	LAYER 1	2	3	4	COL.

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

Appendix D

Floral Inventory Data

Floral Inventory																		
1	2	3	4	5	6	7	8	9	10	Scientific Name	Common Name	CW	COSEWIC	SARO	SRank	MD	Type	Invasive
X			X	X	X	X	X	X	X	*Acer negundo*	Manitoba Maple	0.0			S5	C	TR	Y
						X				*Acer platanoides*	Norway Maple	5.0			SE5	IU	TR	Y
	X								X	*Acer saccharinum*	Silver Maple	-3.0			S5	C	TR	
X										*Acer saccharum*	Sugar Maple	3.0			S5	C	TR	
						X			X	*Acer x freemanii*	(Acer rubrum X Acer saccharinum)	0.0			SNA	hyb	TR	
								X	X	*Achillea millefolium*	Common Yarrow	3.0			SE		FO	
		X								*Actaea pachypoda*	White Baneberry	5.0			S5	C	FO	
							X	X		*Agrostis gigantea*	Redtop	-3.0			SE5	IC	GR	Y
							X	X		*Agrostis stolonifera*	Creeping Bentgrass	-3.0			SE5	IC	GR	
									X	*Ailanthus altissima*	Tree-of-heaven	5.0			SE5	IR	TR	Y
					X		X			*Alisma subcordatum*	Southern Water-plantain	-5.0			S4?	X	FO	
X			X	X	X	X		X		*Alliaria petiolata*	Garlic Mustard	0.0			SE5	IC	FO	Y
X										*Ambrosia artemisiifolia*	Common Ragweed	3.0			S5	C	FO	
X						X	X	X	X	*Ambrosia trifida*	Great Ragweed	0.0			S5	C	FO	
		X								*Amphicarpaea bracteata*	American Hog-peanut	0.0			S5	C	VI	
						X	X	X		*Anemonastrum canadense*	Canada Anemone	-3.0			S5	C	FO	
								X	X	*Anthoxanthum odoratum*	Sweet Vernalgrass	3.0			SE4	IR	GR	
						X				*Anthriscus sylvestris*	Wild Chervil	5.0			SE4?	IR	FO	Y
		X								*Aralia nudicaulis*	Wild Sarsaparilla	3.0			S5	C	FO	
		X								*Aralia racemosa*	American Spikenard	3.0			S5	C	FO	
			X		X				X	*Arctium minus*	Common Burdock	3.0			SE5	IC	FO	
		X								*Arisaema triphyllum*	Jack-in-the-pulpit	-3.0			S5	C	FO	
	X						X			*Asclepias incarnata*	Swamp Milkweed	-5.0			S5	C	FO	
X							X	X	X	*Asclepias syriaca*	Common Milkweed	5.0			S5	C	FO	
		X								*Athyrium filix-femina*	Common Lady Fern	0.0			S5		FE	
X						X	X	X		*Barbarea vulgaris*	Bitter Wintercress	0.0			SE5	IC	FO	
							X			*Bidens cernua*	Nodding Beggarticks	-5.0			S5	X	FO	
	X									*Bidens frondosa*	Devil's Beggarticks	-3.0			S5	X	FO	
		X					X			*Boehmeria cylindrica*	False Nettle	-5.0			S5	X	FO	
X										*Borago officinalis*	Common Borage	5.0			SEH		FO	
X									X	*Bromus inermis*	Smooth Brome	5.0			SE5	IC	GR	Y
			X				X			*Caltha palustris*	Yellow Marsh Marigold	-5.0			S5	C	FO	
		X								*Cardamine hirsuta*	Hairy Bittercress	3.0			SE4	IR	FO	
							X			*Carex aquatilis*	Water Sedge	-5.0			S5	R	SE	
						X				*Carex blanda*	Woodland Sedge	0.0			S5	C	SE	
	X						X			*Carex lacustris*	Lake Sedge	-5.0			S5	C	SE	
		X								*Carex retrorsa*	Retrorse Sedge	-5.0			S5	C	SE	
	X									*Carex stipata*	Awl-fruited Sedge	-5.0			S5	C	SE	
							X			*Carex stricta*	Tussock Sedge	-5.0			S5	C	SE	
					X		X	X		*Carex vulpinoidea*	Fox Sedge	-5.0			S5	C	SE	
									X	*Catalpa speciosa*	Northern Catalpa	3.0			SE1		TR	
									X	*Celtis occidentalis*	Common Hackberry	0.0			S4	X	TR	
X									X	*Centaurea jacea*	Brown Knapweed	5.0			SE5	IX	FO	
						X				*Chelidonium majus*	Greater Celandine	5.0			SE5	IX	FO	Y
						X				*Chelone glabra*	White Turtlehead	-5.0			S5	X	FO	
X									X	*Cichorium intybus*	Chicory	3.0			SE5	IC	FO	
		X			X		X			*Cicuta maculata*	Spotted Water-hemlock	-5.0			S5		FO	
		X				X				*Circaea canadensis*	Broad-leaved Enchanter's Nightshade	3.0			S5	X	FO	
					X		X	X	X	*Cirsium arvense*	Canada Thistle	3.0			SE5	IC	FO	Y
							X			*Cirsium palustre*	Marsh Thistle	-3.0			SE2?		FO	
									X	*Cirsium vulgare*	Bull Thistle	3.0			SE5	IX	FO	
					X	X	X	X		*Clematis virginiana*	Virginia Virgin's-bower	0.0			S5	C	VI	
									X	*Convolvulus arvensis*	Field Bindweed	5.0			SE5	IX	VI	
X										*Cornus alternifolia*	Alternate-leaved Dogwood	3.0			S5	X	SH	
						X	X			*Cornus obliqua*	Pale Dogwood	-3.0			S5	X	SH	
X						X	X	X		*Cornus racemosa*	Gray Dogwood	0.0			S5	X	SH	
X	X	X			X		X	X	X	*Cornus sericea*	Red-osier Dogwood	-3.0			S5	C	SH	

Floral Inventory																		
1	2	3	4	5	6	7	8	9	10	Scientific Name	Common Name	CW	COSEWIC	SARO	SRank	MD	Type	Invasive
X										*Crataegus crus-galli*	Cockspur Hawthorn	0.0			S4	R	SH	
X						X				*Crataegus mollis*	Downy Hawthorn	0.0			S4S5		SH	
X			X							*Crataegus punctata*	Dotted Hawthorn	5.0			S5	C	SH	
					X	X	X			*Cuscuta gronovii*	Swamp Dodder	-3.0			S5		FO	
							X			*Cypripedium parviflorum*	Yellow Lady's-slipper	0.0			S5		FO	
								X	X	*Dactylis glomerata*	Orchard Grass	3.0			SE5	IC	GR	
X									X	*Daucus carota*	Wild Carrot	5.0			SE5	IC	FO	
									X	*Dipsacus fullonum*	Common Teasel	3.0			SE5	IC	FO	Y
		X								*Dryopteris intermedia*	Evergreen Wood Fern	0.0			S5	R	FE	
		X			X		X	X		*Echinocystis lobata*	Wild Mock-cucumber	-3.0			S5	X	VI	
X								X		*Elaeagnus umbellata*	Autumn Olive	3.0			SE3	IR	SH	Y
	X									*Eleocharis obtusa*	Blunt Spikerush	-5.0			S5	C	SE	
							X			*Epilobium coloratum*	Purple-veined Willowherb	-5.0			S5	X	FO	
		X			X		X	X		*Epilobium strictum*	Downy Willowherb	-5.0			S4	R	FO	
								X		*Epipactis helleborine*	Eastern Helleborine	3.0			SE5	IX	FO	Y
	X	X			X		X	X		*Equisetum arvense*	Field Horsetail	0.0			S5	C	FE	
						X				*Equisetum hyemale*	Common Scouring-rush	0.0			S5	C	FE	
X									X	*Erigeron canadensis*	Canada Horseweed	3.0			S5	C	FO	
							X	X		*Erigeron philadelphicus*	Philadelphia Fleabane	-3.0			S5	C	FO	
			X							*Erythronium americanum*	Yellow Trout-lily	5.0			S5	X	FO	
	X				X		X			*Eupatorium perfoliatum*	Common Boneset	-3.0			S5	C	FO	
							X	X		*Euphorbia maculata*	Spotted Spurge	3.0			SE5	IX	FO	
	X				X		X	X		*Euthamia graminifolia*	Grass-leaved Goldenrod	0.0			S5	C	FO	
		X			X		X	X		*Eutrochium maculatum*	Spotted Joe Pye Weed	-5.0			S5		FO	
	X	X					X			*Floerkea proserpinacoides*	False Mermaidweed	0.0	NAR		S4	X	FO	
		X							X	*Frangula alnus*	Glossy Buckthorn	0.0			SE5	IU	SH	Y
			X		X	X				*Fraxinus pennsylvanica*	Green Ash	-3.0			S4	C	TR	
						X		X	X	*Galium aparine*	Cleavers	3.0			S5	X	FO	
					X		X			*Galium boreale*	Northern Bedstraw	0.0			S5	X	FO	
						X				*Geranium maculatum*	Spotted Geranium	3.0			S5	X	FO	
		X								*Geranium robertianum*	Herb-Robert	3.0			S5	C	FO	
			X		X	X			X	*Geum aleppicum*	Yellow Avens	0.0			S5	X	FO	
X										*Geum macrophyllum*	Large-leaved Avens	-3.0			S5		FO	
X									X	*Glechoma hederacea*	Ground Ivy	3.0			SE5	IX	FO	
		X								*Glyceria striata*	Fowl Mannagrass	-5.0			S5	X	GR	
X								X	X	*Hesperis matronalis*	Dame's Rocket	3.0			SE5	IX	FO	Y
						X				*Hydrophyllum virginianum*	Virginia Waterleaf	0.0			S5	C	FO	
X	X			X	X	X	X	X		*Impatiens capensis*	Spotted Jewelweed	-3.0			S5	C	FO	
							X			*Iris pallida*	Sweet Iris				SE1		FO	
	X									*Juncus effusus*	Soft Rush	-5.0			S5		RU	
						X				*Juniperus virginiana*	Eastern Red Cedar	3.0			S5	X	TR	
								X		*Lactuca biennis*	Tall Blue Lettuce	0.0			S5	X	FO	
X										*Lamium purpureum*	Purple Dead-nettle	5.0			SE3	IR	FO	
	X	X								*Larix laricina*	Tamarack	-3.0			S5	X	TR	
	X				X		X			*Leersia oryzoides*	Rice Cutgrass	-5.0			S5	X	GR	
	X						X			*Lemna minor*	Lesser Duckweed	-5.0			S5?	X	FO	
									X	*Leonurus cardiaca*	Common Motherwort	5.0			SE5	IC	FO	
						X				*Leucanthemum vulgare*	Oxeye Daisy	5.0			SE5	IC	FO	
								X		*Linaria vulgaris*	Butter-and-eggs	5.0			SE5	IC	FO	
		X			X		X	X		*Lobelia siphilitica*	Great Blue Lobelia	-3.0			S5	X	FO	
		X								*Lonicera morrowii*	Morrow's Honeysuckle	3.0			SE3	IR	SH	Y
									X	*Lonicera tatarica*	Tartarian Honeysuckle	3.0			SE5	IX	SH	Y
X									X	*Lotus corniculatus*	Garden Bird's-foot Trefoil	3.0			SE5	IX	FO	Y
	X				X		X			*Lycopus americanus*	American Water-horehound	-5.0			S5	C	FO	
		X			X		X	X		*Lysimachia ciliata*	Fringed Loosestrife	-3.0			S5	X	FO	
		X								*Lysimachia nummularia*	Creeping Jennie	-3.0			SE5	IX	FO	Y
					X		X	X		*Lythrum salicaria*	Purple Loosestrife	-5.0			SE5	IC	FO	Y
		X								*Maianthemum canadense*	Wild Lily-of-the-valley	3.0			S5	X	FO	

Floral Inventory																			
1	2	3	4	5	6	7	8	9	10	Scientific Name	Common Name	CW	COSEWIC	SARO	SRank	MD	Type	Invasive
X			X							*Malus pumila*	Common Apple	5.0			SE4	IX	SH	
X								X	X	*Medicago lupulina*	Black Medic	3.0			SE5	IC	FO	
X									X	*Melilotus albus*	White Sweet-clover	3.0			SE5	IC	FO	Y
	X				X		X			*Mentha canadensis*	Canada Mint	-3.0			S5	X	FO	
							X	X		*Mentha spicata*	Spearmint	-3.0			SE4	IX	FO	
		X								*Mitella diphylla*	Two-leaved Mitrewort	3.0			S5	X	FO	
		X								*Mitella nuda*	Naked Mitrewort	-3.0			S5	X	FO	
									X	*Morus alba*	White Mulberry	0.0			SE5	IX	TR	Y
					X	X	X	X		*Myosotis laxa*	Small Forget-me-not	-5.0			S5	X	FO	
					X	X	X			*Nasturtium officinale*	Watercress	-5.0			SE	IX	FO	Y
									X	*Nepeta cataria*	Catnip	3.0			SE5	IC	FO	
								X		*Oenothera biennis*	Common Evening Primrose	3.0			S5	X	FO	
		X					X			*Onoclea sensibilis*	Sensitive Fern	-3.0			S5	X	FE	
		X								*Osmundastrum cinnamomeum*	Cinnamon Fern	-3.0			S5	X	FE	
X										*Oxalis stricta*	Upright Yellow Wood-sorrel	3.0			S5	X	FO	
		X								*Packera aurea*	Golden Ragwort	-3.0			S5	X	FO	
			X		X					*Parthenocissus vitacea*	Thicket Creeper	3.0			S5	X	VW	
						X				*Pastinaca sativa*	Wild Parsnip	5.0			SE5	IX	FO	Y
	X				X		X	X		*Persicaria lapathifolia*	Pale Smartweed	-3.0			S5	X	FO	
	X				X		X	X		*Phalaris arundinacea*	Reed Canary Grass	-3.0			S5	X	GR	Y
X										*Phleum pratense*	Common Timothy	3.0			SE5	IC	GR	
				X	X	X	X	X		*Phragmites australis*	Common Reed	-3.0			S4?		GR	Y
						X	X	X		*Physocarpus opulifolius*	Eastern Ninebark	-3.0			S5	X	SH	
									X	*Picea abies*	Norway Spruce	5.0			SE3	IX	TR	
	X									*Pilea pumila*	Dwarf Clearweed	-3.0			S5	X	FO	
X										*Plantago lanceolata*	English Plantain	3.0			SE5	IC	FO	
X										*Poa pratensis*	Kentucky Bluegrass	3.0			S5		GR	
			X		X	X				*Podophyllum peltatum*	May-apple	3.0			S5	X	FO	
								X		*Populus alba*	White Poplar	5.0			SE5	IX	TR	Y
X				X		X				*Populus deltoides*	Eastern Cottonwood	0.0			S5		TR	
							X	X		*Populus tremuloides*	Trembling Aspen	0.0			S5	X	TR	
								X		*Potentilla recta*	Sulphur Cinquefoil	5.0			SE5	IX	FO	
X						X				*Prunus virginiana*	Choke Cherry	3.0			S5	C	TR	
			X							*Quercus rubra*	Northern Red Oak	3.0			S5	C	TR	
		X	X		X					*Ranunculus pensylvanicus*	Pennsylvania Buttercup	-5.0			S5	X	FO	
X										*Rhamnus cathartica*	Common Buckthorn	0.0			SE5	IC	SH	Y
								X	X	*Rhus typhina*	Staghorn Sumac	3.0			S5	C	SH	
X				X						*Ribes americanum*	Wild Black Currant	-3.0			S5	C	SH	
X										*Robinia pseudoacacia*	Black Locust	3.0			SE5	IC	TR	Y
X							X	X		*Rosa multiflora*	Multiflora Rose	3.0			SE5	IX	SH	Y
		X								*Rubus hispidus*	Bristly Dewberry	-3.0			S4	R	SH	
X										*Rubus idaeus*	Common Red Raspberry	3.0			S5		SH	
X										*Rubus occidentalis*	Black Raspberry	5.0			S5	C	SH	
X										*Rudbeckia hirta*	Black-eyed Susan	3.0			S5	C	FO	
					X		X	X	X	*Rumex crispus*	Curly Dock	0.0			SE5	IC	FO	
	X				X		X	X		*Rumex obtusifolius*	Bitter Dock	-3.0			SE5	IX	FO	
	X				X		X			*Sagittaria latifolia*	Broad-leaved Arrowhead	-5.0			S5	C	FO	
	X			X	X	X	X	X	X	*Salix alba*	White Willow	-3.0			SE4	IX	TR	
							X			*Salix amygdaloides*	Peach-leaved Willow	-3.0			S5	X	TR	
X	X					X				*Salix interior*	Sandbar Willow	-3.0			S5	C	SH	
							X	X	X	*Sambucus canadensis*	Common Elderberry	-3.0			S5	X	SH	
		X			X		X			*Scirpus atrovirens*	Dark-green Bulrush	-5.0			S5	C	SE	
							X			*Scutellaria lateriflora*	Mad Dog Skullcap	-5.0			S5	X	FO	
X										*Securigera varia*	Common Crown-vetch	5.0			SE5	IX	FO	Y
									X	*Silene latifolia*	White Campion	5.0			SE5	IX	FO	
									X	*Silene vulgaris*	Bladder Campion	5.0			SE5	IX	FO	
X	X									*Sisyrinchium montanum*	Strict Blue-eyed-grass	0.0			S5	X	FO	
				X	X	X				*Solanum dulcamara*	Bittersweet Nightshade	0.0			SE5	IC	VW	Y

Floral Inventory																		
1	2	3	4	5	6	7	8	9	10	Scientific Name	Common Name	CW	COSEWIC	SARO	SRank	MD	Type	Invasive
X								X	X	*Solidago canadensis*	Canada Goldenrod	3.0			S5		FO	
						X				*Solidago gigantea*	Giant Goldenrod	-3.0			S5	X	FO	
X										*Solidago nemoralis*	Gray-stemmed Goldenrod	5.0			S5		FO	
		X								*Solidago patula*	Round-leaved Goldenrod	-5.0			S4	X	FO	
					X					*Solidago rugosa ssp. rugosa*	Northern Rough-stemmed Goldenrod	0.0			S5		FO	
								X	X	*Sonchus arvensis*	Field Sow-thistle	3.0			SE5	IX	FO	
						X	X	X		*Spiraea alba*	White Meadowsweet	-3.0			S5	X	SH	
							X			*Symphyotrichum firmum*	Glossy-leaved Aster	-3.0			S4?	X	FO	
					X		X	X		*Symphyotrichum lanceolatum*	Panicled Aster	-3.0			S5	C	FO	
					X		X	X		*Symphyotrichum novae-angliae*	New England Aster	-3.0			S5	C	FO	
	X	X	X		X	X	X			*Symplocarpus foetidus*	Skunk Cabbage	-5.0			S5	C	FO	
									X	*Syringa vulgaris*	Common Lilac	5.0			SE5	IX	SH	Y
X			X							*Taraxacum officinale*	Common Dandelion	3.0			SE5	IC	FO	
		X			X		X	X		*Thalictrum dasycarpum*	Purple Meadow-rue	-3.0			S4?	R	FO	
						X				*Thalictrum dioicum*	Early Meadow-rue	3.0			S5	X	FO	
		X								*Thelypteris palustris*	Marsh Fern	-3.0			S5	X	FE	
		X								*Thuja occidentalis*	Eastern White Cedar	-3.0			S5	X	TR	
		X								*Tiarella cordifolia*	Heart-leaved Foam-flower	3.0			S5	X	FO	
		X					X	X		*Toxicodendron radicans*	Poison Ivy	0.0			S5		VW	
								X	X	*Tragopogon pratensis*	Meadow Goat's-beard	5.0			SE5	IX	FO	
									X	*Trifolium pratense*	Red Clover	3.0			SE5	IX	FO	
		X								*Tussilago farfara*	Colt's-foot	3.0			SE5	IC	FO	Y
				X			X			*Typha angustifolia*	Narrow-leaved Cattail	-5.0			SE5	IX	FO	Y
	X									*Typha latifolia*	Broad-leaved Cattail	-5.0			S5	X	FO	
				X						*Ulmus americana*	American Elm	-3.0			S5	C	TR	
		X			X	X	X	X	X	*Urtica dioica*	Stinging Nettle	0.0			S5		FO	
								X		*Valeriana officinalis*	Common Valerian	3.0			SE3	IR	FO	
								X		*Verbascum thapsus*	Common Mullein	5.0			SE5	IC	FO	
X					X		X	X		*Verbena hastata*	Blue Vervain	-3.0			S5	C	FO	
								X		*Veronica serpyllifolia*	Thyme-leaved Speedwell	0.0			SE5?	IX	FO	
X							X	X		*Viburnum lentago*	Nannyberry	0.0			S5	C	SH	
X									X	*Viburnum opulus*	Cranberry Viburnum	-3.0			S5		SH	
X										*Vicia cracca*	Tufted Vetch	5.0			SE5	IX	VI	Y
					X	X	X	X		*Vincetoxicum rossicum*	European Swallow-wort	5.0			SE5	IR	VI	Y
			X							*Viola sororia*	Woolly Blue Violet	0.0			S5	X	FO	
			X		X			X		*Vitis riparia*	Riverbank Grape	0.0			S5	C	VW	

Appendix E

Significant Wildlife Habitat Table

ELCs: Agricultural Lands, CUM1, MAS3, SWC3, CUW1, MAS, MAM2/CUM1, MAM2

Seasonal Concentration of Animals

Wildlife Habitat	ELC Codes Triggers	Additional Habitat Criteria	Candidate SWH	SWH Defining Criteria	Confirmed SWH
Waterfowl Stopover and Staging Areas (Terrestrial)	-	-No fields with spring sheet water are present on the Subject Lands or Adjacent Lands	No	Studies carried out and verified presence of an annual concentration of any listed species, evaluation methods to follow "Bird and Bird Habitats: Guidelines for Wind Power Projects". • Any mixed species aggregations of 100 or more individuals required. • The flooded field ecosite habitat plus a 100-300m radius, dependent on local site conditions and adjacent land use is the significant wildlife habitat. • Annual use of habitat is documented from information sources or field studies (annual use can be based on studies or determined by past surveys with species numbers and dates).	No
Waterfowl Stopover and Staging Areas (Aquatic)	MAS3	-Open water is present within the Subject Lands. -Presence of 100 or more listed species were not observed, however, during this time no migratory species would have been detected.	Yes (Subject Lands)	Studies carried out and verified presence of: • Aggregations of 100 or more of listed species for 7 days, results in >700 waterfowl use days. • Areas with annual staging of ruddy ducks, canvasbacks, and redheads are SWH • The combined area of the ELC ecosites and a 100m radius area is SWH • Wetland area and shorelines associated with sites identified within the SWHTG are significant wildlife habitat. • Annual Use of Habitat is Documented from Information Sources or Field Studies (Annual can be based on completed studies or determined from past surveys with species numbers and dates recorded).	Candidate (Subject Lands)
Shorebird Migratory Stopover Area	MAM2	- No beach areas, bars, seasonally flooded, muddy and un-vegetated shoreline habitat available.	No	Studies confirming: • Presence of 3 or more of listed species and >1000 shorebird use days during spring or fall migration period (shorebird use days are the accumulated number of shorebirds counted per day over the course of the fall or spring migration period). • Whimbrel stop briefly (<24hrs) during spring migration, any site with >100 Whimbrel used for 3 years or more is significant. • The area of significant shorebird habitat includes the mapped ELC shoreline ecosites plus a 100m radius area. • Evaluation methods to follow "Bird and Bird Habitats: Guidelines for Wind Power Projects".	No
Raptor Wintering Area	-	-No combination of forest and fields >20 ha present.	No	Studies confirm the use of these habitats by: • One or more Short-eared Owls or; One of more Bald Eagles or; At least 10 individuals and two of the listed hawk/owl species. • To be significant a site must be used regularly (3 in 5 years) for a minimum of 20 days by the above number of birds. • The habitat area for an Eagle winter site is the shoreline forest ecosites directly adjacent to the prime hunting area. • Evaluation methods to follow "Bird and Bird Habitats: Guidelines for Wind Power Projects".	No
Bat Hibernacula	-	- No suitable features present.	No	• All sites with confirmed hibernating bats are SWH. • The area includes 200m radius around the entrance of the hibernaculum for	No

				most development types and 1000m for wind farms • Studies are to be conducted during the peak swarming period (Aug–Sept). Surveys should be conducted following methods outlined in the "Bats and Bat Habitats: Guidelines for Wind Power Projects"	
Bat Maternity Colonies	-	- No mature deciduous or mixed forest types >10ha with large diameter >25cm dbh trees within the Subject Lands -Candidate Bat Maternity Roosts were identified within the Subject Lands -Communities 3 and 4 extending into the Adjacent Lands may provide suitable habitat	Yes (Adjacent Lands)	Maternity Colonies with confirmed use by; • >10 Big Brown Bats • >5 Adult Female Silver-haired Bats • The area of the habitat includes the entire woodland or a forest stand ELC Ecosite or an Ecoelement containing the maternity colonies. • Evaluation methods for maternity colonies should be conducted following methods outlined in the "Bats and Bat Habitats: Guidelines for Wind Power Projects"	Candidate (Adjacent Lands)
Turtle Wintering Areas	MAS3	- Over-wintering sites are permanent water bodies, large wetlands, and bogs and fens with adequate dissolved oxygen. - Community 2 is a permanent water body providing suitable over-wintering habitat -Midland Painted Turtles were observed basking within the Community in 2021 and Spring 2022	Yes (Subject Lands)	Presence of 5 over-wintering Midland Painted Turtles is significant. • One or more Northern Map Turtle or Snapping Turtle over-wintering within a wetland is significant. • The mapped ELC Ecosite area with the over wintering turtles is the SWH. If the hibernation site is within a stream or river, the deepwater pool where the turtles are over wintering is the SWH. • Over wintering areas may be identified by searching for congregations (Basking Areas) of turtles on warm, sunny days during the fall (Sept-Oct) or spring (Mar-May). • Congregation of turtles is more common where wintering areas are limited and therefore significant.	Yes (Subject Lands)
Reptile Hibernaculum	All other than really wet	- Old foundation features (abandoned residential buildings and barn structures) are present in the Subject Lands -A large rock pile in the agricultural lands is present	Yes (Subject Lands)	Studies confirming: • Presence of snake hibernacula used by a minimum of five individuals of a snake sp. or; individuals of two or more snake spp. • Congregations of a minimum of five individuals of a snake sp. or; individuals of two or more snake spp. Near potential hibernacula (eg. foundation or rocky slope) on sunny warm days in Spring (Apr/May) and Fall (Sept/Oct). • Note: If there are Special Concern Species present, then site is SWH. • The feature in which the hibernacula is located plus a 30 m radius area is SWH.	Assumed Significant (Subject Lands)
Colonially-Nesting Bird Breeding Habitat (Bank/Cliff)	-	- No exposed soil banks, cliff faces, sandy hills, borrow pits, steep slopes, or other suitable habitat present.	No	Studies confirming: • Presence of 1 or more nesting sites with 8cxlix or more cliff swallow pairs and/or rough-winged swallow pairs during the breeding season. • A colony identified as SWH will include a 50m radius habitat area from the peripheral nests. • Field surveys to observe and count swallow nests are to be completed during the breeding season. Evaluation methods to follow "Bird and Bird Habitats: Guidelines for Wind Power Projects".	No
Colonially-Nesting Bird	-	- Suitable habitat is present in Communities 2/3 for nesting.	Yes (Subject Lands)	Studies confirming: • Presence of 2 or more active nests of Great Blue Heron or other listed species. • The habitat extends from the edge of the colony and a minimum 300m radius	No

Breeding Habitat (Trees/Shrubs)		-A pair of Green Herons were observed during breeding bird surveys in 2021. More than 2 nests were not observed.		or extent of the Forest Ecosite containing the colony or any island <15.0ha with a colony is the SWH. • Confirmation of active heronries are to be achieved through site visits conducted during the nesting season (April-August) or by evidence such as the presence of fresh guano, dead young and/or eggshells.	
Colonially-Nesting Bird Breeding Habitat (Ground)	MAM2, MAS3, CUM1	- No islands, peninsulas, or low bushes close to streams/ditches are present.	No	Studies confirming: • Presence of > 25 active nests for Herring Gulls or Ring-billed Gulls, >5 active nests for Common Tern or >2 active nests for Caspian Tern. • Presence of 5 or more pairs for Brewer's Blackbird. • Any active nesting colony of one or more Little Gull, and Great Black-backed Gull is significant. • The edge of the colony and a minimum 150m radius area of habitat, or the extent of the ELC ecosites containing the colony or any island <3.0ha with a colony is the SWH. • Studies would be done during May/June when actively nesting. Evaluation methods to follow "Bird and Bird Habitats: Guidelines for Wind Power Projects".	No
Migratory Butterfly Stopover Areas	-	- A butterfly stopover area will be >10 ha in size with a combination of forest (FOD) and field (CUM/CUT), and be located within 5 km of Lake Erie or Lake Ontario. Criteria not met due to the lack of candidate ELC codes present, and the large distance from both Lake Erie and Lake Ontario.	No	Studies confirm: • The presence of Monarch Use Days (MUD) during fall migration (Aug/Oct). MUD is based on the number of days a site is used by Monarchs, multiplied by the number of individuals using the site. Numbers of butterflies can range from 100-500/day, significant variation can occur between years and multiple years of sampling should occur. • Observational studies are to be completed and need to be done frequently during the migration period to estimate MUD. • MUD of >5000 or >3000 with the presence of Painted Ladies or Red Admiral's is to be considered significant.	No
Land Bird Migratory Stopover Areas	-	- No woodlots >5 ha in size that are within 5 km of Lake Ontario and Lake Erie. Criteria not met.	No	Studies confirm: • Use of the habitat by >200 birds/day and with >35 spp with at least 10 bird spp. recorded on at least 5 different survey dates. This abundance and diversity of migrant bird species is considered above average and significant. • Studies should be completed during spring (Mar to May) and fall (Aug-Oct) migration using standardized assessment techniques. Evaluation methods to follow "Bird and Bird Habitats: Guidelines for Wind Power Projects"	No
Deer Winter Congregation Areas	SWC3	- No woodlots >100 ha in size - No White-tailed Deer wintering areas identified in the area by LIO wildlife values area mapping.	No	Studies confirm: • Deer management is an MNRF responsibility, deer winter congregation areas considered significant will be mapped by MNRF. • Use of the woodlot by whitetailed deer will be determined by MNRF, all woodlots exceeding the area criteria are significant, unless determined not to be significant by MNRF. • Studies should be completed during winter (Jan/Feb) when >20cm of snow is on the ground using aerial survey techniques, ground or road surveys. or a pellet count deer density survey.	No

Rare Vegetation Communities

Wildlife Habitat	ELC Codes Triggers	Additional Habitat Criteria	Candidate SWH	SWH Defining Criteria	Confirmed SWH
Cliffs and Talus Slopes	-	Not present.	No	• Confirm any ELC Vegetation Type for Cliffs or Talus Slopes.	No
Sand Barren	-	Not present.	No	• Confirm any ELC Vegetation Type for Sand Barrens. • Site must not be dominated by exotic/introduced species (<50% vegetative cover exotic sp.).	No
Alvar	-	Not present.	No	• Field studies that identify 4 of the 5 Alvar Indicator Species at a Candidate Alvar site is significant. • Site must not be dominated by exotic/introduced species (<50% vegetative cover exotic sp.). • The alvar must be in excellent condition and fit in with surrounding landscape with few conflicting land uses.	No
Old Growth Forest	-	Not present.	No	Field Studies will determine: • If dominant trees species are >140 years old, then the area containing these trees is SWH. • The forested area containing the old growth characteristics will have experienced no recognizable forestry activities (cut stumps will not be present) • The area of forest ecosites combined or an eco-element within an ecosite that contain the old growth characteristics is the SWH. • Determine ELC vegetation types for the forest area containing the old growth characteristics.	No
Savannah	-	Not present.	No	• Field studies confirm one or more of the Savannah indicator species listed in Appendix N should be present. Note: Savannah plant spp. list from Ecoregion 7E should be used. • Area of the ELC Ecosite is the SWH. • Site must not be dominated by exotic/introduced species (<50% vegetative cover exotic sp.).	No
Tallgrass Prairie	-	Not present.	No	• Field studies confirm one or more of the Prairie indicator species listed in Appendix N should be present. Note: Prairie plant spp. list from Ecoregion 7E should be used. • Area of the ELC Ecosite is the SWH. • Site must not be dominated by exotic/introduced species (<50% vegetative cover exotic sp.).	No
Other Rare Vegetation	-	Not present.	No	•Field studies should confirm if an ELC Vegetation Type is a rare vegetation community based on listing within Appendix M of SWHTG. • Area of the ELC Vegetation Type polygon is the SWH.	No

Specialized Habitats of Wildlife considered SWH

Wildlife Habitat	ELC Codes Triggers	Additional Habitat Criteria	Candidate SWH	SWH Defining Criteria	Confirmed SWH
Waterfowl Nesting Area	MAM2, MAS, MAS3	- Wetland habitat >0.5ha is present within the Subject Lands. Community 2 is approximately 2ha. - Both Wood Duck and Mallard pairs were observed during targeted breeding bird surveys on June 15th and June 30th, 2021. One additional listed species would be needed to confirm significance.	Yes (Subject Lands)	Studies confirmed: • Presence of 3 or more nesting pairs for listed species excluding Mallards, or; • Presence of 10 or more nesting pairs for listed species including Mallards. • Any active nesting site of an American Black Duck is considered significant. • Nesting studies should be completed during the spring breeding season (April-June). Evaluation methods to follow "Bird and Bird Habitats: Guidelines for Wind Power Projects". • A field study confirming waterfowl nesting habitat will determine the boundary of the waterfowl nesting habitat for the SWH, this may be greater or less than 120 m from the wetland and will provide enough habitat for waterfowl to successfully nest.	No
Bald Eagle and Osprey Nesting, Foraging, Perching	SWC3	- There are wetland communities within the Subject Lands; however, there are no forested communities directly adjacent	No	Studies confirm the use of these nests by: • One or more active Osprey or Bald Eagle nests in an area. • Some species have more than one nest in a given area and priority is given to the primary nest with alternate nests included within the area of the SWH. • For an Osprey, the active nest and a 300 m radius around the nest or the contiguous woodland stand is the SWH, maintaining undisturbed shorelines with large trees within this area is important. • For a Bald Eagle the active nest and a 400-800 m radius around the nest is the SWH. Area of the habitat from 400-800m is dependent on site lines from the nest to the development and inclusion of perching and foraging habitat. • To be significant a site must be used annually. When found inactive, the site must be known to be inactive for >3 years or suspected of not being used for >5 years before being considered not significant. • Observational studies to determine nest site use, perching sites and foraging areas need to be done from early March to mid-August. • Evaluation methods to follow "Bird and Bird Habitats: Guidelines for Wind Power Projects".	No
Woodland Raptor Nesting Habitat	-	- No natural or conifer plantation woodlands/forest stands >30ha with >4ha of interior habitat. Criteria not met.	No	Studies confirm: • Presence of 1 or more active nests from species list is considered significant. • Red-shouldered Hawk and Northern Goshawk – A 400m radius around the nest or 28 ha area of habitat is the SWH. (the 28 ha habitat area would be applied where optimal habitat is irregularly shaped around the nest) • Barred Owl – A 200m radius around the nest is the SWH. • Broad-winged Hawk and Coopers Hawk,– A 100m radius around the nest is SWH. • Sharp-Shinned Hawk – A 50m radius around the nest is the SWH. • Conduct field investigations from early March to end of May. The use of call broadcasts can help in locating territorial (courting/nesting) raptors and facilitate the	No

				discovery of nests by narrowing down the search area.	
Turtle Nesting Areas	MAS3, MAS	- Agricultural sandy soils are present on the west side of Community 2 in addition, loose sandy soils are present on the east side of Community 2	Yes (Subject Lands)	Studies confirm: • Presence of 5 or more nesting Midland Painted Turtles. • One or more Northern Map Turtle or Snapping Turtle nesting is a SWH. • The area or collection of sites within an area of exposed mineral soils where the turtles nest, plus a radius of 30-100m around the nesting area dependent on slope, riparian vegetation and adjacent land use is the SWH. • Travel routes from wetland to nesting area are to be considered within the SWH as part of the 30-100m area of habitat. • Field investigations should be conducted in prime nesting season typically late spring to early summer. Observational studies observing the turtles nesting is a recommended method.	Candidate (Subject Lands)
Springs and Seeps	-	- No seeps or springs observed within the Subject Lands.	No	Field Studies confirm: • Presence of a site with 2 or more seeps/springs should be considered SWH. • The area of a ELC forest ecosite or an ecoelement within ecosite containing the seeps/springs is the SWH. The protection of the recharge area considering the slope, vegetation, height of trees and groundwater condition need to be considered in delineation of the habitat.	No
Amphibian Breeding Habitat (Woodland)	SWC3	- There are no woodland pools >500m^2 within or adjacent to a woodland.	No	Studies confirm; • Presence of breeding population of 1 or more of the listed newt/salamander species or 2 or more of the listed frog species with at least 20 individuals (adults or eggs masses) or 2 or more of the listed frog species with Call Level Code 3. • A combination of observational study and call count surveys will be required during the spring (March-June) when amphibians are concentrated around suitable breeding habitat within or near the woodland/wetlands. • The habitat is the wetland area plus a 230m radius of woodland area. If a wetland area is adjacent to a woodland, a travel corridor connecting the wetland to the woodland is to be included in the habitat	No
Amphibian Breeding Habitat (Wetlands)	MAS3, SWC3, CUW1, MAS, MAM2	- There are wetlands >500m^2 present within the Subject Lands (Community 2). -Amphibian surveys in 2021 observed only 1 listed species (Spring Peeper) at call code 3.	Yes (Subject Lands)	Studies confirm: • Presence of breeding population of 1 or more of the listed newt/salamander species or 2 or more of the listed frog/toad species with at least 20 individuals (adults or eggs masses) or 2 or more of the listed frog/toad species with Call Level Codes of 3. or; Wetland with confirmed breeding Bullfrogs are significant. • The ELC ecosite wetland area and the shoreline are the SWH. • A combination of observational study and call count surveys will be required during the spring (March-June) when amphibians are concentrated around suitable breeding habitat within or near the wetlands.	No
Woodland Area-Sensitive Bird Breeding Habitat	SWC3	- No large mature (>60yrs old) forest stands or woodlots >30 ha are present within or adjacent to the Subject Lands.	No	Studies confirm: • Presence of nesting or breeding pairs of 3 or more of the listed wildlife species. • Note: any site with breeding Cerulean Warblers or Canada Warblers is to be considered SWH. • Conduct field investigations in spring and early summer when birds are singing and defending their territories. • Evaluation methods to follow “Bird and Bird Habitats: Guidelines for Wind Power Projects”.	No

Habitats of Species of Conservation Concern considered SWH

Wildlife Habitat	ELC Codes Triggers	Candidate Habitat Criteria	Candidate SWH	SWH Defining Criteria	Confirmed SWH
Marsh Breeding Bird Habitat	MAM2	- Community 2 provides suitable habitat -A pair of Green Herons were observeding during Breeding Bird Surveys on June 15th, 2021	Yes (Subject Lands)	Studies confirm: • Presence of 5 or more nesting pairs of Sedge Wren or Marsh Wren or breeding by any combination of 4 or more of the listed species. • Note: any wetland with breeding of 1 or more Black Terns, Trumpeter Swan, Green Heron or Yellow Rail is SWH. • Area of the ELC ecosite is the SWH. • Breeding surveys should be done in May/June when these species are actively nesting in wetland habitats. • Evaluation methods to follow "Bird and Bird Habitats: Guidelines for Wind Power Projects".	Yes
Open Country Bird Breeding Habitat	CUM1	- Natural and cultural fields >30 ha are not present within the Subject Lands; however, there is smaller potential grassland habitat within the Subject Lands -No observations of 2 or more of the listed species were recorded during breeding bird surveys in 2021	No	Field studies confirm: • Presence of nesting or breeding of 2 or more of the listed species. • A field with 1 or more breeding Short-eared Owls is to be considered SWH. • The area of SWH is the contiguous ELC ecosite field areas. • Conduct field investigations of the most likely areas in spring and early summer when birds are singing and defending their territories. • Evaluation methods to follow "Bird and Bird Habitats: Guidelines for Wind Power Projects".	No
Shrub/Early Successional Bird Breeding Habitat	CUW1	- No large fields succeeding to shrub and thicket habitats >10 ha in size are present.	No	Field Studies confirm: • Presence of nesting or breeding of 1 of the indicator species and at least 2 of the common species. • A habitat with breeding Yellow-breasted Chat or Golden-winged Warbler is to be considered SWH. • The area of the SWH is the contiguous ELC Ecosite field/thicket area. • Conduct field investigations of the most likely areas in spring and early summer when birds are singing and defending their territories • Evaluation methods to follow "Bird and Bird Habitats: Guidelines for Wind Power Projects".	No
Terrestrial Crayfish	MAM2, MAS3	- Wetlands and wet meadow are present on the Subject Lands. -Terrestrial Crayfish burrows were observed around the perimeter of Communities 2 and 3 on May 20th, 2021 and May 17th, 2022.	Yes (Subject Lands)	Studies Confirm: • Presence of 1 or more individuals of species listed or their chimneys (burrows) in suitable meadow marsh, swamp or moist terrestrial sites. • Area of ELC ecosite or an eco-element area of meadow marsh or swamp within the larger ecosite area is the SWH. • Surveys should be done April to August in temporary or permanent water. Note the presence of burrows or chimneys are often the only indicator of presence, observance or collection of individuals is very	Yes

				difficult.	
Special Concern and Rare Wildlife Species (NHIC and MNRF pre-consultation)	-	- NHIC identified several Special Concern or rare species as potentially present within the area of the Subject Lands. These include Canada Warbler [SC], Common Nighthawk [SC], Eastern Wood-Pewee [SC], Golden-winged Warbler [SC], Midland Painted Turtle [SC], Northern Map Turtle [SC], Snapping Turtle [SC] and Wood Thrush [SC].	Yes for Eastern Wood-Pewee, Midland Painted Turtle, Snapping Turtle on Subject Lands Yes for Wood Thrush on Adjacent Lands	Studies Confirm: • Assessment/inventory of the site for the identified special concern or rare species needs to be completed during the time of year when the species is present or easily identifiable. • The area of the habitat to the finest ELC scale that protects the habitat form and function is the SWH, this must be delineated through detailed field studies. The habitat needs be easily mapped and cover an important life stage component for a species e.g. specific nesting habitat or foraging habitat.	Confirmed for Midland Painted Turtle (Subject Lands)

Animal Movement Corridors

Wildlife Habitat	ELC Codes Triggers*	Additional Habitat Criteria	Candidate SWH	SWH Defining Criteria	Confirmed SWH
Amphibian Movement Corridors	-	- Movement corridors are determined when there is confirmed amphibian breeding habitat in wetlands. Wetland amphibian habitat has not been confirmed.	No	• Field Studies must be conducted at the time of year when species are expected to be migrating or entering breeding sites. • Corridors should consist of native vegetation, with several layers of vegetation. Corridors unbroken by roads, waterways or bodies, and undeveloped areas are most significant. • Corridors should have at least 15m of vegetation on both sides of waterway or be up to 200m wide of woodland habitat and with gaps <20m. • Shorter corridors are more significant than longer corridors, however amphibians must be able to get to and from their summer and breeding habitat.	No

SWH exceptions

Wildlife Habitat	Ecosites	Habitat Criteria and Information	Candidate SWH	SWH Defining Criteria	Confirmed SWH
Bat Migratory Stopover Area	No triggers	- The site is not near Long Point.	No	• The confirmation criteria and habitat areas for this SWH are still being determined.	No

Appendix F

Breeding Bird Summary Data

AVIFAUNAL SURVEY INFORMATION SUMMARY SHEET

Project: 48975-100 Richmond Street, Auburn
Collector(s): Z.Anderson, V. Schveighardt

	Date	Start	Finish	Weather
Visit 1	15-Jun-21	6:00am	8:00am	clear, cool
Visit 2	30-Jun-21	6:45am	8:00am	warm, overcast, light rain

Species Abbr.	Species Name	Comm. 1				Comm. 2				Comm. 3				Comm. 4				
		Visit 1		Visit 2		Visit 1		Visit 2		Visit 1		Visit 2		Visit 1		Visit 2		Vis
		Code	No.	Code	No.	Code	No.	Code	No.	Code	No.	Code	No.	Code	No.	Code	No.	Code
WODU	Wood Duck							VO/OB										
MALL	Mallard																	
GRHE	Green Heron							VO	2									
TUVU	Turkey Vulture																	
KILL	Killdeer																	
MODO	Mourning Dove																	
NOFL	Northern Flicker					OB	1											
WIFL	Willow Flycatcher							SM/SH	1									
EAPH	Eastern Phoebe																	
BLJA	Blue Jay											OB/VO	2					
AMCR	American Crow																	
TRES	Tree Swallow			VO	5													
CLSW	Cliff Swallow							VO/SH	5									
BARS	Barn Swallow					OB	1	OB/VO	10									
AMRO	American Robin	SM	1					P	2	OB/SM	2	SH/VO	1	OB	2	SH/VO	3	
EUST	European Starling																	
YWAR	Yellow Warbler	SM	2	SM	2			P	2									
COYE	Common Yellowthroat			SM	2			SM/SH	1					SM	1			
FISP	Field Sparrow	SM	1	SM/SH	2													
SOSP	Song Sparrow	SM	2	SM	5	SM	2			SM	1							
NOCA	Northern Cardinal									SM	1					SH/SM	2	
INBU	Indigo Bunting			SM	2									SM	1			
RWBL	Red-winged Blackbird	SM	5	SH/VO	6	SM	4	VO/T	20+									SM/VO
COGR	Common Grackle			OB/VO	4	OB	2	OB	3					OB	3	SH	4	OB
BHCO	Brown-headed Cowbird																	
BAOR	Baltimore Oriole																	
AMGO	American Goldfinch	SM	2											SM	2			

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

Comm. 5			Comm. 6				Comm. 7				Comm. 9				Comm. 10				S Rank	ESA Status	PIF Status	Notes
it 1	Visit 2		Visit 1		Visit 2		Visit 1		Visit 2		Visit 1		Visit 2		Visit 1		Visit 2					
No.	Code	No.	Code	No.	Code	No.	Code	No.	Code	No.	Code	No.	Code	No.	Code	No.	Code	No.				
																			S5			females
											OB/P	2							S5			
																			S4			Pair, possibly a third
							OB	1											S5			Flyover
			OB/VO	1	VO	1					VO	2	VO	1					S5			Adjacent (Visit 2)
											OB	1	OB	1					S5			Flyover
																			S4		RC	
											SM	1							S4		CC	
											SM	2							S5			
															OB	3	OB	1	S5			
									VO	2									S5			Flyover
																			S4			Foraging
			OB	6															S4			Foraging
											OB	2							S4	THR		Foraging
							OB/VC	4	SM/SH	3	N	1			OB	1	OB	4	S5			Juveniles (Visit 2)
											OB	4			OB	1			SNA			Flyover
											SM	1							S5			Shrubs
											SM	1	SM	2	SM	1			S5	-		Shrubs
																			S4		RC	
			SM	1	SM	2	SM	1	SM	2	SM	2	SM	3	SM	1	VO/SM	3	S5			
					SM	1													S5			
							SM	1	SM/SH	2									S4			Edges
6	OB	8	SM	6	SM/T	4	SM	2	SH/SM	6	SM	6	SM/VO/SH	10	VO	4	VO/OB	2	S4			
2	OB	4	VO	2					OB	3	OB	4	VO	1					S5			Flyovers
																	OB	3	S4			
	OB/SM	1	SM	1													VO/T	1	S4		RC,RS	
											SM	2					VO	2	S5			

Appendix G

Amphibian Survey Data

AMPHIBIAN MONITORING FIELD SHEET

Project: 48975-100 Auburn Dorchester
Date: Apr. 27 2021 Project Manager:
Collector(s): LMM ER Visit #:

WEATHER CONDITIONS						WIND SCALE
Temp.	Wind:	NO	Cloud Cover (%)	Precipitation Yesterday		0 Calm
19	Direction: S		60	☑ None/Dry ☐ Drizzle ☐ Damp/Fog ☐ Rain		(1) Smoke Drifts
						2 Wind Felt on Face
CALL LEVEL CODES						3 Leaves in constant motion
						4 Wind raises dust and paper

Code 1: Calls not simultaneous, number of individuals can be accurately counted
Code 2: Some calls simultaneous, number of individuals can be reliably estimated
Code 3: Full chorus, calls continuous and overlapping, number of individuals cannot be reliably estimated

Reference Site: ☐ No ☐ Yes UTM

Species	In*	Out**
AMTO		
BCFR		
BULL		
CHFR		
CGTR		
FOTO		
GRTR		
GRFR		
MIFR		
NLFR		
PIFR		
SPPE		
WOFR		

* Check if species is calling from inside 100-metre station area.
** Check if species is calling from outside 100-metre station area.

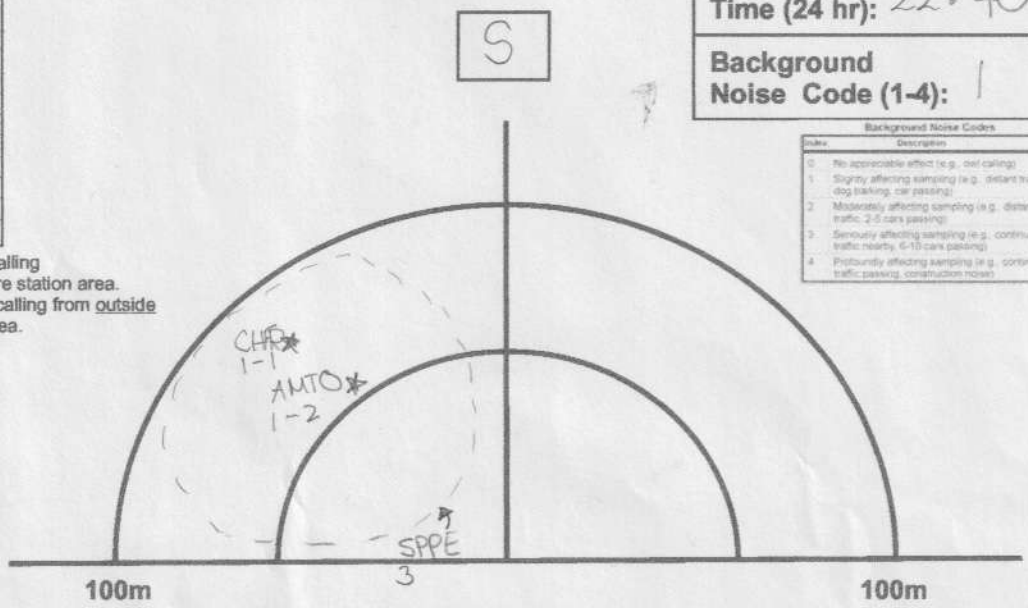
Station: A

Station Start Time (24 hr): 22:40

Background Noise Code (1-4): 1

Background Noise Codes

Index	Description
0	No appreciable effect (e.g., owl calling)
1	Slightly affecting sampling (e.g., distant traffic, dog barking, car passing)
2	Moderately affecting sampling (e.g., distant traffic, 2-5 cars passing)
3	Seriously affecting sampling (e.g., continuous traffic nearby, 6-10 cars passing)
4	Profoundly affecting sampling (e.g., continuous traffic passing, construction noise)



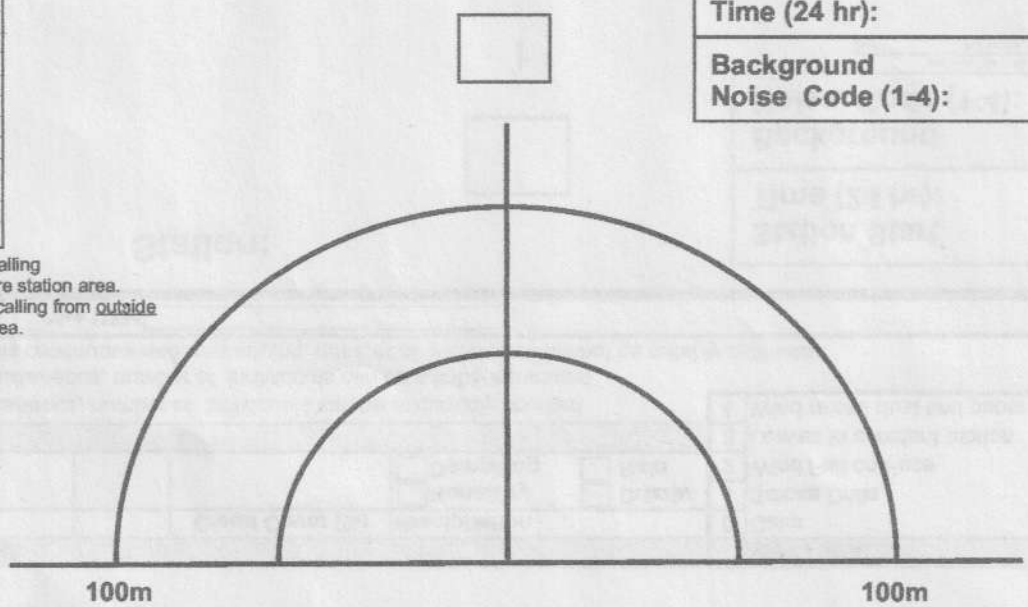
Species	In*	Out**
AMTO		
BCFR		
BULL		
CHFR		
CGTR		
FOTO		
GRTR		
GRFR		
MIFR		
NLFR		
PIFR		
SPPE		
WOFR		

* Check if species is calling from inside 100-metre station area.
** Check if species is calling from outside 100-metre station area.

Station:

Station Start Time (24 hr):

Background Noise Code (1-4):



AMPHIBIAN MONITORING FIELD SHEET

Project: 48975-100 Amb. dorchester
Date: May 17 2021 Project Manager: MC
Collector(s): LMM ER Visit #:

WEATHER CONDITIONS					
Temp.	Wind:	7 km	Cloud Cover (%)	Precipitation	
16	Direction:	SW	0	☑ None/Dry ☐ Drizzle ☐ Damp/Fog ☐ Rain	

	WIND SCALE
0	Calm
1	Smoke Drifts
2	Wind Felt on Face
3	Leaves in constant motion
4	Wind raises dust and paper

CALL LEVEL CODES

Code 1: Calls not simultaneous, number of individuals can be accurately counted
Code 2: Some calls simultaneous, number of individuals can be reliably estimated
Code 3: Full chorus, calls continuous and overlapping, number of individuals cannot be reliably estimated

Reference Site: ☐ No ☐ Yes UTM

Species	In*	Out**
AMTO	✓	
BCFR		
BULL		
CHFR		
CGTR		
FOTO		
GRTR	✓	
GRFR	✓	
MIFR		
NLFR		
PIFR		
SPPE	✓	
WOFR		

* Check if species is calling from inside 100-metre station area.
** Check if species is calling from outside 100-metre station area.

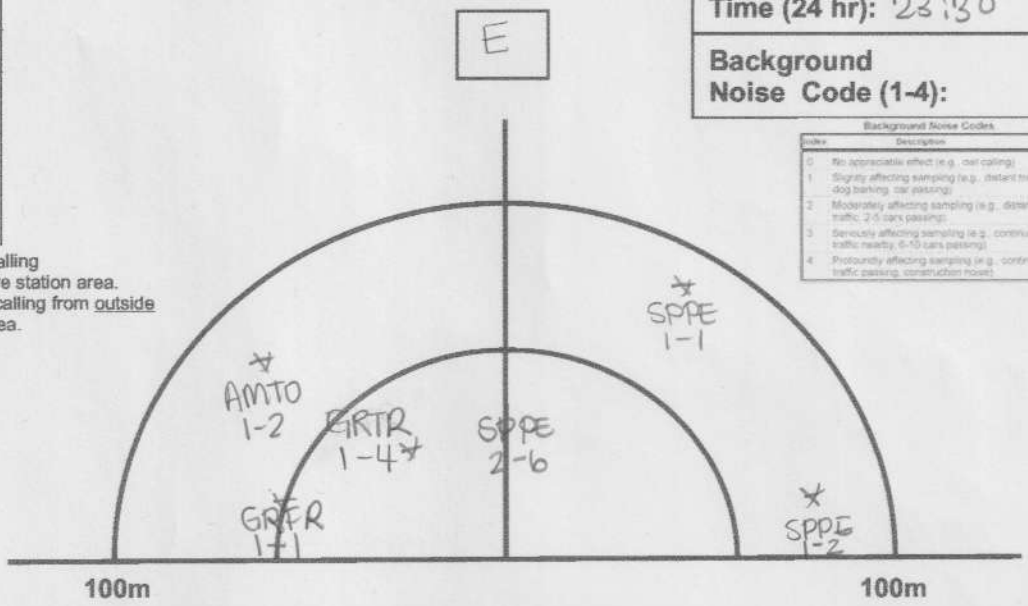
Station: E

Station Start Time (24 hr): 23:30

Background Noise Code (1-4):

Background Noise Codes

Code	Description
0	No appreciable effect (e.g., owl calling)
1	Slightly affecting sampling (e.g., distant traffic, dog barking, car passing)
2	Moderately affecting sampling (e.g., distant traffic, 2-5 cars passing)
3	Seriously affecting sampling (e.g., continuous traffic nearby, 6-10 cars passing)
4	Profoundly affecting sampling (e.g., continuous traffic passing, construction noise)



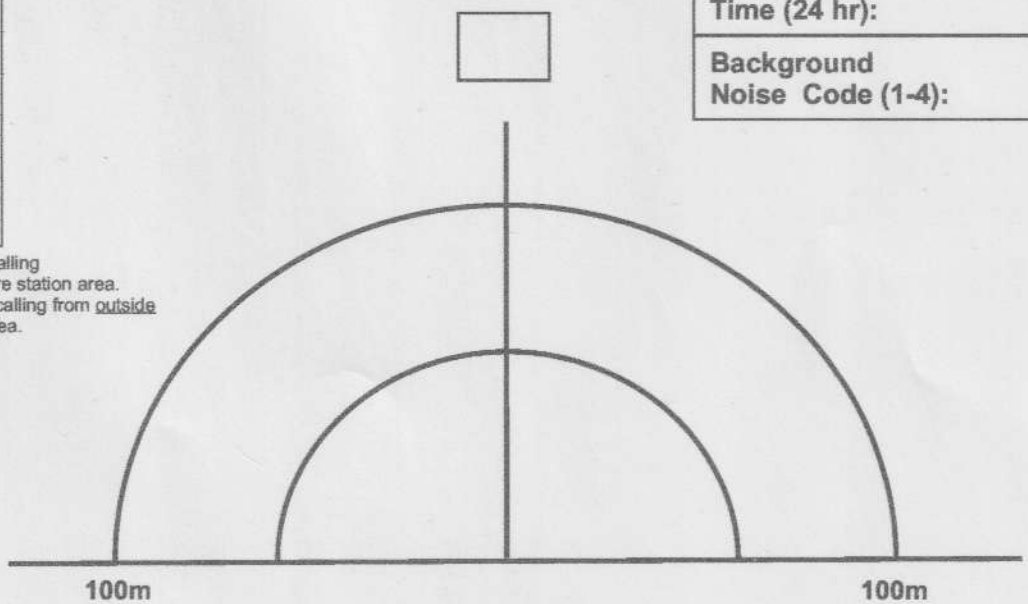
Species	In*	Out**
AMTO		
BCFR		
BULL		
CHFR		
CGTR		
FOTO		
GRTR		
GRFR		
MIFR		
NLFR		
PIFR		
SPPE		
WOFR		

* Check if species is calling from inside 100-metre station area.
** Check if species is calling from outside 100-metre station area.

Station:

Station Start Time (24 hr):

Background Noise Code (1-4):



GENERAL SITE INFORMATION FIELD SHEET

Project: 48975-100 Auburn Dorchester
Date: Apr 28 2021 Project Manager:
Collector(s): ER LMM Visit #:
Time started: 22:30 Time finished: 23:15 Combined collectors' hours: 1.5
☐ NHIC List ☐ MNR EO's ☐ none ☐ not provided to collector

WEATHER CONDITIONS				
Temp.	Wind:	~0	Cloud Cover (%)	Precipitation
19	Direction:	S	~60	Today: N Yesterday: N

WIND SCALE	
0	Calm
1	Smoke Drifts
2	Wind Felt on Face
3	Leaves in constant motion
4	Wind raises dust and paper
5	Small trees sway
6	Large branches sway
7	Lots of resistance when walking into
8	Limbs breaking off trees

DATA FOCUS					
☐	Birds 1__ 2__ Mig__	☐	ELC's	☐	Dripline/Tree Survey
☐	Mammals	☐	Floral V__ S__ A_	☐	Aquatic - Physical
☐	Amphibians 1_/_2_ 3_	☐	Wetland	☐	Aquatic - Biological
✓	Reptiles	☐	Butternut (BHA)	✓	Faunal Habitat
☐	Inverterbrates	☐	other SAR	☐	Other - see notes

FEATURES (with GPS co-ordinates where applicable)	Mapped	Follow-up Req'd		
	UTM	Yes	No	Who
Man-made Structures: ☐ None observed				
Yes No				
☐ ☐ Barns/Footings/Wells/other(list)				
☐ ☐ Rock Piles				
☐ ☐ Garbage				
Natural Vegetation: ☐ None observed				
☐ ☐ Fallen Logs outside woods (#'s)				
☐ ☐ Brush Piles				
☐ ☐ Snags (raptor perch)				
☐ ☐ Tree Cavities (nesting)				
☐ ☐ Sentinel Trees				
☐ ☐ Butternut Identified				
☐ ☐ Mast Trees (6E) ☐ Berry Shrubs (6E)				
Wildlife Features: ☐ None observed				
☐ ☐ Waterfowl nesting (large #'s, # of species)				
☐ ☐ Exposed Banks (nesting swallows)				
☐ ☐ Stick Nests				
☐ ☐ Animal Burrows (>10cm)				
☐ ☐ Heronry				
☐ ☐ Crayfish mounds				
☐ ☐ Sand/gravel on site				
☐ ☐ Marsh/open country/shrub				
☐ ☐ Winter Deer yards				
☐ ☐ Corridor from pond to woods (ampibian movement)				
☐ ☐ Bat corridor (shorelines, escarpments)				
☐ ☐ Bat hibernacula (caves, mines, crevices, etc.)				
Aquatic Features:				
☐ ☐ Perm. pond in woodland ☐ emergents/submergents/logs ☐ temp.				
☐ ☐ Perm. pond in open ☐ emergents/submergents/logs ☐ temp.				
☐ ☐ Water in woodland ☐ pools ☐ flowing ☐ dry				
☐ ☐ Waterways flowing dry pools				
☐ natural stream ☐ ☐ ☐				
☐ swale ☐ ☐ ☐ ☐ None observed				
☐ open drain ☐ ☐ ☐				
☐ Seeps/Springs ☐ ☐ ☐				
Incidental Observations/Notes:				

Graphic ☐ Attached or Name L:\ENV\Biological Services\Templates\MTE NEnv_General Field Sheet Checked by Project Manager ☐ Date:

GENERAL SITE INFORMATION FIELD SHEET

Project: 48075 Auburn dorch.
Date: May 17 2021 Project Manager: MC
Collector(s): ER LMm Visit #:
Time started: 23:15 Time finished: 23:45 Combined collectors' hours: 1
☐ NHIC List ☐ MNR EO's ☐ none ☐ not provided to collector

WEATHER CONDITIONS				
Temp.	Wind:	7km	Cloud Cover (%)	Precipitation
16	Direction:	SW	0	Today: N Yesterday: N

DATA FOCUS					
☐	Birds 1__ 2__ Mig__	☐	ELC's	☐	Dripline/Tree Survey
☐	Mammals	☐	Floral V__ S__ A_	☐	Aquatic - Physical
☐	Amphibians 1_ 2_/3_	☐	Wetland	☐	Aquatic - Biological
☐	Reptiles	☐	Butternut (BHA)	☐	Faunal Habitat
☐	Inverterbrates	☐	other SAR	☐	Other - see notes

	WIND SCALE
0	Calm
1	Smoke Drifts
2	Wind Felt on Face
3	Leaves in constant motion
4	Wind raises dust and paper
5	Small trees sway
6	Large branches sway
7	Lots of resistance when walking into
8	Limbs breaking off trees

FEATURES (with GPS co-ordinates where applicable)	Mapped	Follow-up Req'd		
	UTM	Yes	No	Who
Man-made Structures: ☐ None observed				
Yes No				
☐ ☐ Barns/Footings/Wells/other(list)				
☐ ☐ Rock Piles				
☐ ☐ Garbage				
Natural Vegetation: ☐ None observed				
☐ ☐ Fallen Logs outside woods (#'s)				
☐ ☐ Brush Piles				
☐ ☐ Snags (raptor perch)				
☐ ☐ Tree Cavities (nesting)				
☐ ☐ Sentinel Trees				
☐ ☐ Butternut Identified				
☐ ☐ Mast Trees (6E) ☐ Berry Shrubs (6E)				
Wildlife Features: ☐ None observed				
☐ ☐ Waterfowl nesting (large #'s, # of species)				
☐ ☐ Exposed Banks (nesting swallows)				
☐ ☐ Stick Nests				
☐ ☐ Animal Burrows (>10cm)				
☐ ☐ Heronry				
☐ ☐ Crayfish mounds				
☐ ☐ Sand/gravel on site				
☐ ☐ Marsh/open country/shrub				
☐ ☐ Winter Deer yards				
☐ ☐ Corridor from pond to woods (ampibian movement)				
☐ ☐ Bat corridor (shorelines, escarpments)				
☐ ☐ Bat hibernacula (caves, mines, crevices, etc.)				
Aquatic Features:				
☐ ☐ Perm. pond in woodland ☐ emergents/submergents/logs ☐ temp.				
☐ ☐ Perm. pond in open ☐ emergents/submergents/logs ☐ temp.				
☐ ☐ Water in woodland ☐ pools ☐ flowing ☐ dry				
☐ ☐ Waterways flowing dry pools				
☐ natural stream ☐ ☐ ☐				
☐ swale ☐ ☐ ☐ ☐ None observed				
☐ open drain ☐ ☐ ☐				
☐ Seeps/Springs ☐ ☐ ☐				
Incidental Observations/Notes:				

Graphic ☐ Attached or Name L:\ENV\Biological Services\Templates\MTE NEnv_General Field Sheet Checked by Project Manager ☐ Date:

GENERAL SITE INFORMATION FIELD SHEET

Project: 48075-100
Date: June 21, 2021 Project Manager: MC
Collector(s): ER, VS Visit #:
Time started: 9:46 Time finished: Combined collectors' hours:
☐ NHIC List ☐ MNR EO's ☐ none ☐ not provided to collector

WEATHER CONDITIONS					WIND SCALE	
Temp.	Wind: 26 Km/hr	Cloud Cover (%)	Precipitation		0	Calm
16°C	Direction: NW	90	Today: 0 Yesterday: 0		1	Smoke Drifts
					2	Wind Felt on Face
					3	Leaves in constant motion
					4	Wind raises dust and paper
					5	Small trees sway
					6	Large branches sway
					7	Lots of resistance when walking into
					8	Limbs breaking off trees

DATA FOCUS

☐	Birds 1__ 2__ Mig__	☐	ELC's	☐	Dripline/Tree Survey
☐	Mammals	☐	Floral V__ S__ A_	☐	Aquatic - Physical
☑	Amphibians 1_ 2_ 3☑	☐	Wetland	☐	Aquatic - Biological
☐	Reptiles	☐	Butternut (BHA)	☐	Faunal Habitat
☐	Inverterbrates	☐	other SAR	☑	Other - see notes

FEATURES (with GPS co-ordinates where applicable)	Mapped	Follow-up Req'd		
	UTM	Yes	No	Who
Man-made Structures: ☐ None observed				
Yes No				
☐ ☐ Barns/Footings/Wells/other(list)				
☐ ☐ Rock Piles				
☐ ☐ Garbage				
Natural Vegetation: ☐ None observed				
☐ ☐ Fallen Logs outside woods (#'s)				
☐ ☐ Brush Piles				
☐ ☐ Snags (raptor perch)				
☐ ☐ Tree Cavities (nesting)				
☐ ☐ Sentinel Trees				
☐ ☐ Butternut Identified				
☐ ☐ Mast Trees (6E) ☐ Berry Shrubs (6E)				
Wildlife Features: ☐ None observed				
☐ ☐ Waterfowl nesting (large #'s, # of species)				
☐ ☐ Exposed Banks (nesting swallows)				
☐ ☐ Stick Nests				
☐ ☐ Animal Burrows (>10cm)				
☐ ☐ Heronry				
☐ ☐ Crayfish mounds				
☐ ☐ Sand/gravel on site				
☐ ☐ Marsh/open country/shrub				
☐ ☐ Winter Deer yards				
☐ ☐ Corridor from pond to woods (ampibian movement)				
☐ ☐ Bat corridor (shorelines, escarpments)				
☐ ☐ Bat hibernacula (caves, mines, crevices, etc.)				
Aquatic Features:				
☐ ☐ Perm. pond in woodland ☐ emergents/submergents/logs ☐ temp.				
☐ ☐ Perm. pond in open ☐ emergents/submergents/logs ☐ temp.				
☐ ☐ Water in woodland ☐ pools ☐ flowing ☐ dry				
☐ ☐ Waterways flowing dry pools				
☐ natural stream ☐ ☐ ☐				
☐ swale ☐ ☐ ☐ ☐ None observed				
☐ open drain ☐ ☐ ☐				
☐ Seeps/Springs ☐ ☐ ☐				
Incidental Observations/Notes:				
Frog visit #3				

Graphic ☐ Attached or Name L:\ENV\Biological Services\Templates\MTE NEnv_General Field Sheet Checked by Project Manager ☐ Date:

AMPHIBIAN MONITORING FIELD SHEET

Project: 18975-100
Date: June 21, 2021
Collector(s): EB, JS
Project Manager: MC
Visit #:

WEATHER CONDITIONS						WIND SCALE
Temp.	Wind: 26 km/hr		Cloud Cover (%)	Precipitation		0 Calm
16°C	Direction: NW		90%	☑ None/Dry ☐ Drizzle ☐ Damp/Fog ☐ Rain		1 Smoke Drifts
						2 Wind Felt on Face
CALL LEVEL CODES						3 Leaves in constant motion
Code 1: Calls not simultaneous, number of individuals can be accurately counted						4 Wind raises dust and paper
Code 2: Some calls simultaneous, number of individuals can be reliably estimated						
Code 3: Full chorus, calls continuous and overlapping, number of individuals cannot be reliably estimated						

Reference Site: ☐ No ☐ Yes UTM

Station: Frog 1

Species	In*	Out**
AMTO		
BCFR		
BULL		
CHFR		
CGTR		
FOTO		
GRTR		
GRFR		
MIFR		
NLFR		
PIFR		
SPPE		
WOFR		

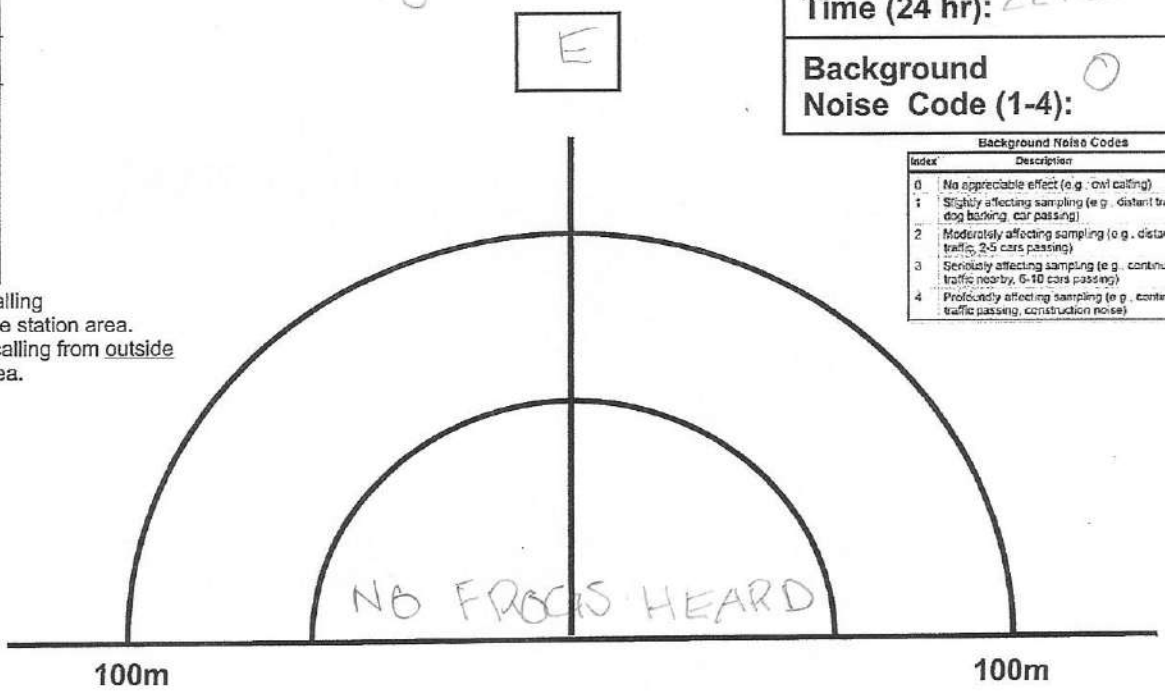
* Check if species is calling from inside 100-metre station area.
** Check if species is calling from outside 100-metre station area.

Station Start Time (24 hr): 22:00

Background Noise Code (1-4): 0

Background Noise Codes

Index	Description
0	No appreciable effect (e.g., owl calling)
1	Slightly affecting sampling (e.g., distant traffic, dog barking, car passing)
2	Moderately affecting sampling (e.g., distant traffic, 2-5 cars passing)
3	Seriously affecting sampling (e.g., continuous traffic nearby, 6-10 cars passing)
4	Profoundly affecting sampling (e.g., continuous traffic passing, construction noise)



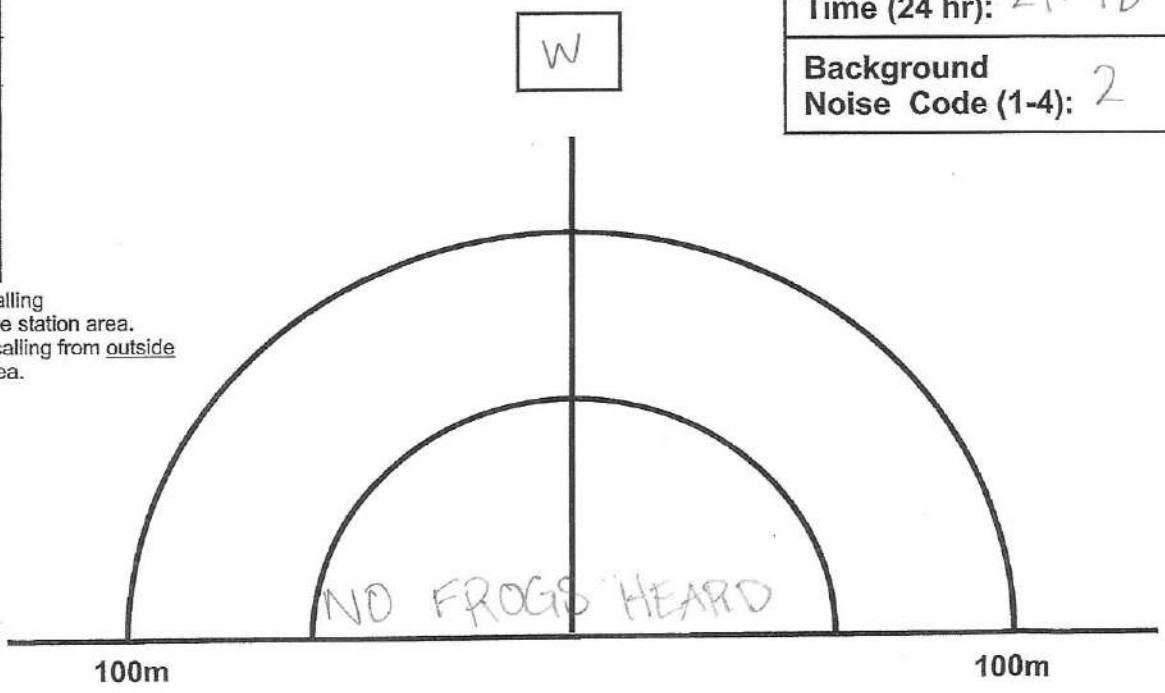
Station: Frog 2

Species	In*	Out**
AMTO		
BCFR		
BULL		
CHFR		
CGTR		
FOTO		
GRTR		
GRFR		
MIFR		
NLFR		
PIFR		
SPPE		
WOFR		

* Check if species is calling from inside 100-metre station area.
** Check if species is calling from outside 100-metre station area.

Station Start Time (24 hr): 21:48

Background Noise Code (1-4): 2



Appendix H

Turtle Survey Data

GENERAL SITE INFORMATION FIELD SHEET

Project: 48975-100
Date: May 17, 2022 Project Manager: MC
Collector(s): ER, MC Visit #: 4
Time started: 1:00 Time finished: 3:30 Combined collectors' hours: 5
☐ NHIC List ☐ MNR EO's ☐ none ☐ not provided to collector

WEATHER CONDITIONS			
Temp.	Wind: 27 km/hr	Cloud Cover (%)	Precipitation
13°C	Direction: NW	0 sunny	Today: no Yesterday: yes

WIND SCALE	
0	Calm
1	Smoke Drifts
2	Wind Felt on Face
(3)	Leaves in constant motion
4	Wind raises dust and paper
5	Small trees sway
6	Large branches sway
7	Lots of resistance when walking into
8	Limbs breaking off trees

DATA FOCUS

☐	Birds 1__ 2__ Mig__	☐	ELC's	☐	Dripline/Tree Survey
☐	Mammals	☐	Floral V__ S__ A_	☐	Aquatic - Physical
☐	Amphibians 1_ 2_ 3_	☐	Wetland	☐	Aquatic - Biological
☐	Reptiles	☐	Butternut (BHA)	☐	Faunal Habitat
☐	Inverterbrates	☒	other SAR	☒	Other - see notes

FEATURES (with GPS co-ordinates where applicable)			Mapped	Follow-up Req'd		
			UTM	Yes	No	Who
Man-made Structures:		☐ None observed				
Yes	No					
☐	☐	Barns/Footings/Wells/other(list)				
☐	☐	Rock Piles				
☐	☐	Garbage				
Natural Vegetation:		☐ None observed				
☐	☐	Fallen Logs outside woods (#'s)				
☐	☐	Brush Piles				
☐	☐	Snags (raptor perch)				
☐	☐	Tree Cavities (nesting)				
☐	☐	Sentinel Trees				
☐	☐	Butternut Identified				
☐	☐	Mast Trees (6E) ☐ Berry Shrubs (6E)				
Wildlife Features:		☐ None observed				
☐	☐	Waterfowl nesting (large #'s, # of species)				
☐	☐	Exposed Banks (nesting swallows)				
☐	☐	Stick Nests				
☐	☐	Animal Burrows (>10cm)				
☐	☐	Heronry				
✓	☐	Crayfish mounds				
✓	☐	Sand/gravel on site				
☐	☐	Marsh/open country/shrub				
☐	☐	Winter Deer yards				
☐	☐	Corridor from pond to woods (ampibian movement)				
☐	☐	Bat corridor (shorelines, escarpments)				
☐	☐	Bat hibernacula (caves, mines, crevices, etc.)				
Aquatic Features:						
☐	☐	Perm. pond in woodland ☐ emergents/submergents/logs ☐ temp.				
✓	☐	Perm. pond in open ☐ emergents/submergents/logs ☐ temp.				
☐	☐	Water in woodland ☐ pools ☐ flowing ☐ dry				
☐	☐	Waterways flowing dry pools				
	☐	natural stream ☐ ☐ ☐				
	☐	swale ☐ ☐ ☐ ☐ None observed				
	☐	open drain ☐ ☐ ☐				
	☐	Seeps/Springs ☐ ☐ ☐				

Incidental Observations/Notes:

4th Blanding's Turtle Survey
75 Midland Painted Turtles (~10?)
no blanding's turtles
turtle nesting habitat present - found no nests

Graphic ☐ Attached or Name E:\ENV\Biological Services\Templates\MTE NEnv_General Field Sheet Checked by Project Manager ☐ Date:

GENERAL SITE INFORMATION FIELD SHEET

Project: Auburn Dorchester (48975-100)
Date: July 22, 2021 Project Manager: DH
Collector(s): ZA + EL Visit #:
Time started: 9:00 Time finished: Combined collectors' hours:
☐ NHIC List ☐ MNR EO's ☐ none ☐ not provided to collector

WEATHER CONDITIONS				
Temp.	Wind:		Cloud Cover (%)	Precipitation
16°C	Direction: /		90%	Today: none Yesterday: none.

WIND SCALE	
0	Calm
1	Smoke Drifts
2	Wind Felt on Face
3	Leaves in constant motion
4	Wind raises dust and paper
5	Small trees sway
6	Large branches sway
7	Lots of resistance when walking into
8	Limbs breaking off trees

DATA FOCUS

☐	Birds 1__ 2__ Mig__	☐	ELC's	☐	Dripline/Tree Survey	
☐	Mammals	☐	Floral V__ S__ A_	☐	Aquatic - Physical	
☐	Amphibians 1_ 2_ 3_	☐	Wetland	☐	Aquatic - Biological	
☒	Reptiles	☐	Butternut (BHA)	☐	Faunal Habitat	
☐	Inverterbrates	☐	other SAR	☐	Other - see notes	

FEATURES (with GPS co-ordinates where applicable)	Mapped UTM	Follow-up Req'd Yes	No	Who
Man-made Structures: ☐ None observed				
Yes No				
☐ ☒ Barns/Footings/Wells/other(list)				
☐ ☒ Rock Piles				
☐ ☒ Garbage				
Natural Vegetation: ☐ None observed				
☐ ☐ Fallen Logs outside woods (#'s)				
☐ ☐ Brush Piles				
☐ ☐ Snags (raptor perch)				
☐ ☐ Tree Cavities (nesting)				
☐ ☐ Sentinel Trees				
☐ ☐ Butternut Identified				
☐ ☐ Mast Trees (6E) ☐ Berry Shrubs (6E)				
Wildlife Features: ☐ None observed				
☐ ☐ Waterfowl nesting (large #'s, # of species)				
☐ ☐ Exposed Banks (nesting swallows)				
☐ ☐ Stick Nests				
☐ ☐ Animal Burrows (>10cm)				
☐ ☐ Heronry				
☐ ☐ Crayfish mounds				
☐ ☐ Sand/gravel on site				
☐ ☐ Marsh/open country/shrub				
☐ ☐ Winter Deer yards				
☐ ☐ Corridor from pond to woods (ampibian movement)				
☐ ☐ Bat corridor (shorelines, escarpments)				
☐ ☐ Bat hibernacula (caves, mines, crevices, etc.)				
Aquatic Features:				
☐ ☐ Perm. pond in woodland ☐ emergents/submergents/logs ☐ temp.				
☒ ☐ Perm. pond in open ☐ emergents/submergents/logs ☐ temp.				
☐ ☐ Water in woodland ☐ pools ☐ flowing ☐ dry				
☐ ☐ Waterways flowing dry pools				
☐ natural stream ☐ ☐ ☐				
☐ swale ☐ ☐ ☐ ☐ None observed				
☐ open drain ☐ ☐ ☐				
☐ Seeps/Springs ☐ ☐ ☐				

Incidental Observations/Notes:

1 painted turtle

Graphic ☐ Attached or Named L:\ENV\Biological Services\Templates\MTE NEnv_General Field Sheet Checked by Project Manager ☐ Date:

GENERAL SITE INFORMATION FIELD SHEET

Project: 489 75 - 100
Date: May 25, 2022 Project Manager: HC
Collector(s): WH, ER Visit #: 5
Time started: 9:00 Time finished: 10:30 Combined collectors' hours:
☐ NHIC List ☐ MNR EO's ☐ none ☐ not provided to collector

WEATHER CONDITIONS				
Temp.	Wind: 17km/hr		Cloud Cover (%)	Precipitation
13°C	Direction: E		40 Mainly Sunny	Today: No Yesterday: No

WIND SCALE	
0	Calm
1	Smoke Drifts
(2)	Wind Felt on Face
3	Leaves in constant motion
4	Wind raises dust and paper
5	Small trees sway
6	Large branches sway
7	Lots of resistance when walking into
8	Limbs breaking off trees

DATA FOCUS

☐	Birds 1__ 2__ Mig__	☐	ELC's	☐	Dripline/Tree Survey
☐	Mammals	☐	Floral V__ S__ A_	☐	Aquatic - Physical
☐	Amphibians 1_ 2_ 3_	☐	Wetland	☐	Aquatic - Biological
☐	Reptiles	☐	Butternut (BHA)	☐	Faunal Habitat
☐	Inverterbrates	☒	other SAR	☒	Other - see notes

FEATURES (with GPS co-ordinates where applicable)	Mapped	Follow-up Req'd		
	UTM	Yes	No	Who
Man-made Structures: ☐ None observed				
☐ ☐ Barns/Footings/Wells/other(list)				
☐ ☐ Rock Piles				
☐ ☐ Garbage				
Natural Vegetation: ☐ None observed				
☐ ☐ Fallen Logs outside woods (#'s)				
☐ ☐ Brush Piles				
☐ ☐ Snags (raptor perch)				
☐ ☐ Tree Cavities (nesting)				
☐ ☐ Sentinel Trees				
☐ ☐ Butternut Identified				
☐ ☐ Mast Trees (6E) ☐ Berry Shrubs (6E)				
Wildlife Features: ☐ None observed				
☐ ☐ Waterfowl nesting (large #'s, # of species)				
☐ ☐ Exposed Banks (nesting swallows)				
☐ ☐ Stick Nests				
☐ ☐ Animal Burrows (>10cm)				
☐ ☐ Heronry				
☐ ☐ Crayfish mounds				
☐ ☐ Sand/gravel on site				
☐ ☐ Marsh/open country/shrub				
☐ ☐ Winter Deer yards				
☐ ☐ Corridor from pond to woods (ampibian movement)				
☐ ☐ Bat corridor (shorelines, escarpments)				
☐ ☐ Bat hibernacula (caves, mines, crevices, etc.)				
Aquatic Features:				
☐ ☐ Perm. pond in woodland ☐ emergents/submergents/logs ☐ temp.				
☐ ☐ Perm. pond in open ☐ emergents/submergents/logs ☐ temp.				
☐ ☐ Water in woodland ☐ pools ☐ flowing ☐ dry				
☐ ☐ Waterways flowing dry pools				
☐ natural stream ☐ ☐ ☐				
☐ swale ☐ ☐ ☐ ☐ None observed				
☐ open drain ☐ ☐ ☐				
☐ Seeps/Springs ☐ ☐ ☐				

Incidental Observations/Notes:

5th Blanding's Turtle Survey
7 Midland Painted Turtles (~30?)
no Blanding's Turtles
fish in water eating bugs
swamp sparrow, great heron observed

Graphic ☐ Attached or Name L:\ENV\Biological Services\Templates\MTE NEnv_General Field Sheet Checked by Project Manager ☐ Date:

GENERAL SITE INFORMATION FIELD SHEET

Project: 42975-100
Date: April 22, 2022 Project Manager: MC
Collector(s): WH, ER Visit #: 1
Time started: 1:00 Time finished: 2:04 Combined collectors' hours: 2
☐ NHIC List ☐ MNR EO's ☐ none ☐ not provided to collector

WEATHER CONDITIONS			
Temp.	Wind: 7Km/hr	Cloud Cover (%)	Precipitation
11 °C	Direction: N	5 Sunny	Today: No Yesterday: Yes?

WIND SCALE	
0	Calm
1	Smoke Drifts
(2)	Wind Felt on Face
3	Leaves in constant motion
4	Wind raises dust and paper
5	Small trees sway
6	Large branches sway
7	Lots of resistance when walking into
8	Limbs breaking off trees

DATA FOCUS

☐	Birds 1__ 2__ Mig__	☐	ELC's	☐	Dripline/Tree Survey
☐	Mammals	☐	Floral V__ S__ A_	☐	Aquatic - Physical
☐	Amphibians 1_ 2_ 3_	☐	Wetland	☐	Aquatic - Biological
☐	Reptiles	☐	Butternut (BHA)	☐	Faunal Habitat
☐	Inverterbrates	☐	other SAR	☐	Other - see notes

FEATURES (with GPS co-ordinates where applicable)	Mapped	Follow-up Req'd		
	UTM	Yes	No	Who
Man-made Structures: ☐ None observed				
Yes No				
☐ ☐ Barns/Footings/Wells/other(list)				
☐ ☐ Rock Piles				
☐ ☐ Garbage				
Natural Vegetation: ☐ None observed				
☐ ☐ Fallen Logs outside woods (#'s)				
☐ ☐ Brush Piles				
☐ ☐ Snags (raptor perch)				
☐ ☐ Tree Cavities (nesting)				
☐ ☐ Sentinel Trees				
☐ ☐ Butternut Identified				
☐ ☐ Mast Trees (6E) ☐ Berry Shrubs (6E)				
Wildlife Features: ☐ None observed				
☐ ☐ Waterfowl nesting (large #'s, # of species)				
☐ ☐ Exposed Banks (nesting swallows)				
☐ ☐ Stick Nests				
☐ ☐ Animal Burrows (>10cm)				
☐ ☐ Heronry				
☐ ☐ Crayfish mounds				
☐ ☐ Sand/gravel on site				
☐ ☐ Marsh/open country/shrub				
☐ ☐ Winter Deer yards				
☐ ☐ Corridor from pond to woods (ampibian movement)				
☐ ☐ Bat corridor (shorelines, escarpments)				
☐ ☐ Bat hibernacula (caves, mines, crevices, etc.)				
Aquatic Features:				
☐ ☐ Perm. pond in woodland ☐ emergents/submergents/logs ☐ temp.				
☐ ☐ Perm. pond in open ☐ emergents/submergents/logs ☐ temp.				
☐ ☐ Water in woodland ☐ pools ☐ flowing ☐ dry				
☐ ☐ Waterways flowing dry pools				
☐ natural stream ☐ ☐ ☐				
☐ swale ☐ ☐ ☐ ☐ None observed				
☐ open drain ☐ ☐ ☐				
☐ Seeps/Springs ☐ ☐ ☐				

Incidental Observations/Notes:

- Blanding's Turtle Survey #1
- Painted Turtles >5
- No blanding's turtles

Graphic ☐ Attached or Name: L:\ENV\Biological Services\Templates\MTE NEnv_General Field Sheet Checked by Project Manager ☐ Date:

Appendix I

Bat Habitat Assessment

GENERAL SITE INFORMATION FIELD SHEET

Project: 48975-100 Auburn dorchester
Date: May 12 Project Manager:
Collector(s): UMM Visit #:
Time started: 17:00 Time finished: 19:00 Combined collectors' hours: 2
☐ NHIC List ☐ MNR EO's ☐ none ☐ not provided to collector

WEATHER CONDITIONS				
Temp.	Wind:	~26km	Cloud Cover (%)	Precipitation
16	Direction:	NW	10	Today: N Yesterday: N

WIND SCALE	
0	Calm
1	Smoke Drifts
2	Wind Felt on Face
3	Leaves in constant motion
4	Wind raises dust and paper
5	Small trees sway
6	Large branches sway
7	Lots of resistance when walking into
8	Limbs breaking off trees

DATA FOCUS					
☐	Birds 1__ 2__ Mig__	☐	ELC's	☐	Dripline/Tree Survey
☐	Mammals	☐	Floral V__ S__ A_	☐	Aquatic - Physical
☐	Amphibians 1_ 2_ 3_	☐	Wetland	☐	Aquatic - Biological
☐	Reptiles	☐	Butternut (BHA)	☑	Faunal Habitat
☐	Inverterbrates	☐	other SAR	☐	Other - see notes

FEATURES (with GPS co-ordinates where applicable)	Mapped	Follow-up Req'd		
	UTM	Yes	No	Who
Man-made Structures: ☐ None observed				
Yes No				
☐ ☐ Barns/Footings/Wells/other(list)				
☐ ☐ Rock Piles				
☐ ☐ Garbage				
Natural Vegetation: ☐ None observed				
☐ ☐ Fallen Logs outside woods (#'s)				
☐ ☐ Brush Piles				
☐ ☐ Snags (raptor perch)				
☐ ☐ Tree Cavities (nesting)				
☐ ☐ Sentinel Trees				
☐ ☐ Butternut Identified				
☐ ☐ Mast Trees (6E) ☐ Berry Shrubs (6E)				
Wildlife Features: ☐ None observed				
☐ ☐ Waterfowl nesting (large #'s, # of species)				
☐ ☐ Exposed Banks (nesting swallows)				
☐ ☐ Stick Nests				
☐ ☐ Animal Burrows (>10cm)				
☐ ☐ Heronry				
☐ ☐ Crayfish mounds				
☐ ☐ Sand/gravel on site				
☐ ☐ Marsh/open country/shrub				
☐ ☐ Winter Deer yards				
☐ ☐ Corridor from pond to woods (ampibian movement)				
☐ ☐ Bat corridor (shorelines, escarpments)				
☐ ☐ Bat hibernacula (caves, mines, crevices, etc.)				
Aquatic Features:				
☐ ☐ Perm. pond in woodland ☐ emergents/submergents/logs ☐ temp.				
☐ ☐ Perm. pond in open ☐ emergents/submergents/logs ☐ temp.				
☐ ☐ Water in woodland ☐ pools ☐ flowing ☐ dry				
☐ ☐ Waterways flowing dry pools				
☐ natural stream ☐ ☐ ☐				
☐ swale ☐ ☐ ☐ ☐ None observed				
☐ open drain ☐ ☐ ☐				
☐ Seeps/Springs ☐ ☐ ☐				
Incidental Observations/Notes:				
bat trees				

Graphic ☐ Attached or Name L:\ENV\Biological Services\Templates\MTE NENV_General Field Sheet Checked by Project Manager ☐ Date:

Appendix B – Suitable Maternity Roost Trees for Little Brown Myotis/Northern Myotis

Include all <u>live and dead</u> standing trees ≥10cm dbh with loose or naturally exfoliating bark, cavities, hollows or cracks.

Project Name: 48475-100

Survey Date(s): May 12 2021

Site Name: Auburn dorchester

Observers(s): Lm mm

ELC Ecosite:

Snag Density (snags/ha):

Tree #	Tree Species ID	dbh (cm)	Height Class[2]	Snag attributes (check all that apply)	Easting	Northing	Notes
1	sugar maple	108	1	☑ cavity[3] ☐ loose bark ☐ crack ☐ knot hole ☐ other snag within 10m? ☑ Decay Class 1-3?[4] 2	494688	14760453	cavities ~10m
2	red maple ~2 stems	61 88	1	☐ cavity ☑ loose bark ☐ crack ☑ knot hole ☐ other snag within 10m? ☑ Decay Class 1-3? 1	494547	14760291	loose bark ~6m knot holes ~4m-6m
3	red maple	85	1	☐ cavity ☑ loose bark ☐ crack ☑ knot hole ☐ other snag within 10m? ☑ Decay Class 1-3? 1	494593	14760194	~5m
4	burr oak	163	1	☐ cavity ☐ loose bark ☑ crack ☐ knot hole ☐ other snag within 10m? ☑ Decay Class 1-3? 1	494397	14760225	~5m
5	burr oak	144	1	☑ cavity ☐ loose bark ☑ crack ☐ knot hole ☐ other snag within 10m? ☑ Decay Class 1-3? 1	494270	14760057	~2m ~5m
				☐ cavity ☐ loose bark ☐ crack ☐ knot hole ☐ other snag within 10m? ☐ Decay Class 1-3?			
				☐ cavity ☐ loose bark ☐ crack ☐ knot hole ☐ other snag within 10m? ☐ Decay Class 1-3?			
				☐ cavity ☐ loose bark ☐ crack ☐ knot hole ☐ other snag within 10m? ☐ Decay Class 1-3?			
				☐ cavity ☐ loose bark ☐ crack ☐ knot hole ☐ other snag within 10m? ☐ Decay Class 1-3?			
				☐ cavity ☐ loose bark ☐ crack ☐ knot hole ☐ other snag within 10m? ☐ Decay Class 1-3?			

---

[2] **<u>Height Class</u>**: 1 = Dominant (above canopy); 2 = Co-dominant (canopy height); 3 = Intermediate (just below canopy); 4 = suppressed (well below canopy)

[3] The approx. height of the cavity should be noted. Note that cavities with an entrance near the ground may also be used by bats if they are "chimney-like".

<u>Decay Class</u>: 1 = Healthy, live tree; 2 = Declining live tree, part of canopy lost; 3 = Very recently dead, bark intact, branches intact