

**For Office Use Only:**

File Number

Related File Number

Pre-consultation Meeting

Application Submitted

Complete Application

ANPL2021333BNPL202138Oct 8/21 (revised)Oct 19/21

Application Fee

Conservation Authority Fee

Well &amp; Septic Info Provided

Planner

Public Notice Sign

2816 74376xx  
1560grotech provided  
N. GOODBRAND**Check the type of planning application(s) you are submitting.**

- ☒ Consent/Severance/Boundary Adjustment  
☐ Surplus Farm Dwelling Severance and Zoning By-law Amendment  
☒ Minor Variance  
☐ Easement/Right-of-Way

*Revised  
Copy. Oct. 8th/21***Property Assessment Roll Number:** 50108019254502017600**A. Applicant Information****Name of Owner**A.D. Invest. Inc.

It is the responsibility of the owner or applicant to notify the planner of any changes in ownership within 30 days of such a change.

Address

77 Cultus Road

Town and Postal Code

Clear Creek N0E 1C0

Phone Number

519-983-2484

Cell Number

Email

adinvest20@gmail.com**Name of Applicant**Marten Klassen

Address

906 Norfolk County Road 23

Town and Postal Code

Walsingham N0E 1X0

Phone Number

Cell Number

226-231-0330

Email

martenklassen21@gmail.com

**Name of Agent** same as applicant  
**Address** \_\_\_\_\_  
**Town and Postal Code** \_\_\_\_\_  
**Phone Number** \_\_\_\_\_  
**Cell Number** \_\_\_\_\_  
**Email** \_\_\_\_\_

Please specify to whom all communications should be sent. Unless otherwise directed, all correspondence and notices in respect of this application will be forwarded to the agent noted above.

☐ Owner ☐ Agent ☒ Applicant

Names and addresses of any holder of any mortgagees, charges or other encumbrances on the subject lands:

#### **B. Location, Legal Description and Property Information**

1. Legal Description (include Geographic Township, Concession Number, Lot Number, Block Number and Urban Area or Hamlet):

Municipal Civic Address: PT LT 8 Con 6 77 Cultus Road, Clear Creek, ON  
Present Official Plan Designation(s): Hamlet Designation  
Present Zoning: Hamlet Residential

2. Is there a special provision or site specific zone on the subject lands?

☐ Yes ☒ No If yes, please specify:

3. Present use of the subject lands:

-a residential dwelling is currently on this property

4. Please describe **all existing** buildings or structures on the subject lands and whether they are to be retained, demolished or removed. If retaining the buildings or structures, please describe the type of buildings or structures, and illustrate the setback, in metric units, from front, rear and side lot lines, ground floor area, gross floor area, lot coverage, number of storeys, width, length, and height on your attached sketch which must be included with your application:

single story dwelling (retained)- total of 150 sq.m. Set backs: front- 21m; rear- 62.8m; east side- 31.4m; west side- 36.6m. Dwelling is 16.5m long, 7.6m wide.

complete  
answer on  
last page of  
document.

5. If an addition to an existing building is being proposed, please explain what it will be used for (for example a bedroom, kitchen, or bathroom). If new fixtures are proposed, please describe.

6. Please describe **all proposed** buildings or structures/additions on the subject lands. Describe the type of buildings or structures/additions, and illustrate the setback, in metric units, from front, rear and side lot lines, ground floor area, gross floor area, lot coverage, number of storeys, width, length, and height on your attached sketch which must be included with your application:

7. Are any existing buildings on the subject lands designated under the *Ontario Heritage Act* as being architecturally and/or historically significant? Yes ☐ No ☒

If yes, identify and provide details of the building:

8. If known, the length of time the existing uses have continued on the subject lands:  
unknown

9. Existing use of abutting properties:  
hamlet residential and agricultural

10. Are there any easements or restrictive covenants affecting the subject lands?  
☐ Yes ☒ No If yes, describe the easement or restrictive covenant and its effect:

### C. Purpose of Development Application

Note: Please complete all that apply.

#### 1. Site Information

##### Existing

##### Proposed

Please indicate unit of measurement, for example: m, m<sup>2</sup> or %

|                                 |                     |                     |
|---------------------------------|---------------------|---------------------|
| Lot frontage                    | 82 m                | 53 m                |
| Lot depth                       | 100 m               | 100 m               |
| Lot width                       | 82 m                | 53 m                |
| Lot area                        | 8200 m <sup>2</sup> | 5300 m <sup>2</sup> |
| Lot coverage                    | 8050 m <sup>2</sup> |                     |
| Front yard                      | 21 m                | 21 m                |
| Rear yard                       | 72 m                | 72 m                |
| Left Interior side yard         | 34.6 m              | 1.6 m               |
| Right Interior side yard        | 31.4 m              | 31.4 m              |
| Exterior side yard (corner lot) |                     |                     |

#### 2. Please outline the relief requested (assistance is available):

-wanting to severe parcel into two lots. One of the lots will be under an acre which then calls for a variance. The existing frontage is 82 m with a depth of 100 m. We would like to change the frontage to 53 m on the existing and 29 m on the proposed. The depth would not change.

#### 3. Please explain why it is not possible to comply with the provision(s) of the Zoning By-law:

reduced lot size

#### 4. Description of land intended to be severed in metric units:

|                                                   |                                 |
|---------------------------------------------------|---------------------------------|
| Frontage:                                         | 29 m                            |
| Depth:                                            | 100 m                           |
| Width:                                            | 29 m                            |
| Lot Area:                                         | 2900 m <sup>2</sup>             |
| Present Use:                                      | vacant property to existing lot |
| Proposed Use:                                     | severance for a future dwelling |
| Proposed final lot size (if boundary adjustment): | 29m x 100m                      |

If a boundary adjustment, identify the assessment roll number and property owner of the lands to which the parcel will be added: \_\_\_\_\_

Description of land intended to be retained in metric units:

Frontage: 53 m

Depth: 100 m

Width: 53 m

Lot Area: 5300 m<sup>2</sup>

Present Use: residential property

Proposed Use: leave retained as residential and severe off left parcel of property

Buildings on retained land: 12-ft x 12-ft shed 9 m from dwelling

5. Description of proposed right-of-way/easement in metric units:

Frontage: \_\_\_\_\_

Depth: \_\_\_\_\_

Width: \_\_\_\_\_

Area: \_\_\_\_\_

Proposed Use: \_\_\_\_\_

6. List all properties in Norfolk County, which are owned and farmed by the applicant and involved in the farm operation:

Owners Name: \_\_\_\_\_

Roll Number: \_\_\_\_\_

Total Acreage: \_\_\_\_\_

Workable Acreage: \_\_\_\_\_

Existing Farm Type: (for example: corn, orchard, livestock) \_\_\_\_\_

Dwelling Present?: ☐ Yes ☐ No If yes, year dwelling built \_\_\_\_\_

Owners Name: \_\_\_\_\_  
Roll Number: \_\_\_\_\_  
Total Acreage: \_\_\_\_\_  
Workable Acreage: \_\_\_\_\_  
Existing Farm Type: (for example: corn, orchard, livestock) \_\_\_\_\_  
Dwelling Present?: ☐ Yes ☐ No If yes, year dwelling built \_\_\_\_\_

Owners Name: \_\_\_\_\_  
Roll Number: \_\_\_\_\_  
Total Acreage: \_\_\_\_\_  
Workable Acreage: \_\_\_\_\_  
Existing Farm Type: (for example: corn, orchard, livestock) \_\_\_\_\_  
Dwelling Present?: ☐ Yes ☐ No If yes, year dwelling built \_\_\_\_\_

Owners Name: \_\_\_\_\_  
Roll Number: \_\_\_\_\_  
Total Acreage: \_\_\_\_\_  
Workable Acreage: \_\_\_\_\_  
Existing Farm Type: (for example: corn, orchard, livestock) \_\_\_\_\_  
Dwelling Present?: ☐ Yes ☐ No If yes, year dwelling built \_\_\_\_\_

**Note: If additional space is needed please attach a separate sheet.**

#### **D. Previous Use of the Property**

1. Has there been an industrial or commercial use on the subject lands or adjacent lands? ☐ Yes ☒ No ☐ Unknown  
If yes, specify the uses (for example: gas station, or petroleum storage): \_\_\_\_\_
  
2. Is there reason to believe the subject lands may have been contaminated by former uses on the site or adjacent sites? ☐ Yes ☒ No ☐ Unknown
  
3. Provide the information you used to determine the answers to the above questions: \_\_\_\_\_

4. If you answered yes to any of the above questions in Section D, a previous use inventory showing all known former uses of the subject lands, or if appropriate, the adjacent lands, is needed. Is the previous use inventory attached? ☐ Yes ☐ No

**E. Provincial Policy**

1. Is the requested amendment consistent with the provincial policy statements issued under subsection 3(1) of the *Planning Act*, R.S.O. 1990, c. P. 13? ☒ Yes ☐ No

If no, please explain:

2. It is owner's responsibility to be aware of and comply with all relevant federal or provincial legislation, municipal by-laws or other agency approvals, including the Endangered Species Act, 2007. Have the subject lands been screened to ensure that development or site alteration will not have any impact on the habitat for endangered or threatened species further to the provincial policy statement subsection 2.1.7? ☒ Yes ☐ No

If no, please explain:

3. Have the subject lands been screened to ensure that development or site alteration will not have any impact on source water protection? ☒ Yes ☐ No

If no, please explain:

Note: If in an area of source water Wellhead Protection Area (WHPA) A, B or C please attach relevant information and approved mitigation measures from the Risk Manager Official.

4. Are any of the following uses or features on the subject lands or within 500 metres of the subject lands, unless otherwise specified? Please check boxes, if applicable.

**Livestock facility or stockyard** (submit MDS Calculation with application)

☐ On the subject lands or ☐ within 500 meters – distance \_\_\_\_\_

**Wooded area**

☒ On the subject lands or ☐ within 500 meters – distance \_\_\_\_\_

**Municipal Landfill**

☐ On the subject lands or ☐ within 500 meters – distance \_\_\_\_\_

**Sewage treatment plant or waste stabilization plant**

☐ On the subject lands or ☐ within 500 meters – distance \_\_\_\_\_

**Provincially significant wetland (class 1, 2 or 3) or other environmental feature**

☐ On the subject lands or ☐ within 500 meters – distance \_\_\_\_\_

**Floodplain**

☐ On the subject lands or ☐ within 500 meters – distance \_\_\_\_\_

**Rehabilitated mine site**

☐ On the subject lands or ☐ within 500 meters – distance \_\_\_\_\_

**Non-operating mine site within one kilometre**

☐ On the subject lands or ☐ within 500 meters – distance \_\_\_\_\_

**Active mine site within one kilometre**

☐ On the subject lands or ☐ within 500 meters – distance \_\_\_\_\_

**Industrial or commercial use (specify the use(s))**

☐ On the subject lands or ☐ within 500 meters – distance \_\_\_\_\_

**Active railway line**

☐ On the subject lands or ☐ within 500 meters – distance \_\_\_\_\_

**Seasonal wetness of lands**

☐ On the subject lands or ☐ within 500 meters – distance \_\_\_\_\_

**Erosion**

☐ On the subject lands or ☐ within 500 meters – distance \_\_\_\_\_

**Abandoned gas wells**

☐ On the subject lands or ☐ within 500 meters – distance \_\_\_\_\_

## F. Servicing and Access

1. Indicate what services are available or proposed:

### Water Supply

- ☐ Municipal piped water  
☒ Individual wells

- ☐ Communal wells  
☐ Other (describe below)
- 

### Sewage Treatment

- ☐ Municipal sewers  
☒ Septic tank and tile bed in good working order
- ☐ Communal system  
☐ Other (describe below)
- 

### Storm Drainage

- ☐ Storm sewers  
☐ Other (describe below)
- ☐ Open ditches
- 

2. Existing or proposed access to subject lands

- ☒ Municipal road  
☐ Unopened road
- ☐ Provincial highway  
☐ Other (describe below)

Name of road/street:

---

## G. Other Information

1. Does the application involve a local business? ☐ Yes ☒ No

If yes, how many people are employed on the subject lands?

---

2. Is there any other information that you think may be useful in the review of this application? If so, explain below or attach on a separate page.

## **H. Supporting Material to be submitted by Applicant**

In order for your application to be considered complete, folded hard copies (number of paper copies as directed by the planner) and an **electronic version (PDF) of the site plan drawings, additional plans, studies and reports** will be required, including but not limited to the following details:

1. Concept/Layout Plan
2. All measurements in metric
3. Existing and proposed easements and right of ways
4. Parking space totals – required and proposed
5. All dimensions of the subject lands
6. Dimensions and setbacks of all buildings and structures
7. Location and setbacks of septic system and well from all existing and proposed lot lines, and all existing and proposed structures
8. Names of adjacent streets
9. Natural features, watercourses and trees

In addition, the following additional plans, studies and reports, including but not limited to, **may** also be required as part of the complete application submission:

- ☐ Zoning Deficiency Form
- ☐ On-Site Sewage Disposal System Evaluation Form (to verify location and condition)
- ☐ Environmental Impact Study
- ☐ Geotechnical Study / Hydrogeological Review
- ☐ Minimum Distance Separation Schedule
- ☐ Record of Site Condition
- ☐ Agricultural Impact Assessment

Your development approval might also be dependent on Ministry of Environment Conservation and Parks, Ministry of Transportation or other relevant federal or provincial legislation, municipal by-laws or other agency approvals.

**All final plans must include the owner's signature as well as the engineer's signature and seal.**

## I. Transfers, Easements and Postponement of Interest

The owner acknowledges and agrees that if required it is their solicitor's responsibility on behalf of the owner for the registration of all transfer(s) of land to the County, and/or transfer(s) of easement in favour of the County and/or utilities. Also, the owner further acknowledges and agrees that it is their solicitor's responsibility on behalf of the owner for the registration of postponements of any charges in favour of the County.

### Permission to Enter Subject Lands

Permission is hereby granted to Norfolk County officers, employees or agents, to enter the premises subject to this application for the purposes of making inspections associated with this application, during normal and reasonable working hours.

### Freedom of Information

For the purposes of the *Municipal Freedom of Information and Protection of Privacy Act*, I authorize and consent to the use by or the disclosure to any person or public body any information that is collected under the authority of the *Planning Act, R.S.O. 1990, c. P. 13* for the purposes of processing this application.

Marten Klassen

Owner/Applicant/Agent Signature

October 8th, 2021

Date

### J. Owner's Authorization

If the applicant/agent is not the registered owner of the lands that is the subject of this application, the owner must complete the authorization set out below.

I/We Abram Klassen am/are the registered owner(s) of the lands that is the subject of this application.

I/We authorize Abram Klassen to make this application on my/our behalf and to provide any of my/our personal information necessary for the processing of this application. Moreover, this shall be your good and sufficient authorization for so doing.

Abram Klassen

Owner

October 8th, 2021

Date

\_\_\_\_\_

Owner

\_\_\_\_\_

Date

**K. Declaration**

I, Marten Klassen of Walsingham

solemnly declare that:

all of the above statements and the statements contained in all of the exhibits transmitted herewith are true and I make this solemn declaration conscientiously believing it to be true and knowing that it is of the same force and effect as if made under oath and by virtue of *The Canada Evidence Act*.

Declared before me at:

\_\_\_\_\_

Marten Klassen

Owner/Applicant/Agent Signature

In NORFOLK County - SIMCOE

This 26<sup>th</sup> day of MAY 2021

A.D., 20\_\_\_\_

[Signature]

Sherry Ann Mott, a  
Commissioner, etc., Province of Ontario,  
for the Corporation of Norfolk County.  
Expires January 5, 2023.

A Commissioner, etc.



## Zoning Deficiency

Simcoe: 185 Robinson St.  
Simcoe, ON  
N3Y 5L6  
519-426-5870  
Langton: 22 Albert St.  
Langton, On.  
N0E 1G0  
519-875-4485

### PROPERTY INFORMATION

Address: 77 Cultus Road

Legal Description:

Roll Number: 331054502017600

Application #:

Information Origins: sever house and create new residential lot beside

### Hamlet Residential Zone (RH)

| Main Lot 77 Cultus |                                      | REQUIRED | PROPOSED | DEFICIENCY | UNITS |
|--------------------|--------------------------------------|----------|----------|------------|-------|
| 5.7.2              | a) minimum <i>lot area</i>           |          |          |            |       |
|                    | i) new <i>lot</i>                    | 4000.00  | 5300.00  |            | sqm   |
|                    | b) minimum <i>lot frontage</i>       |          |          |            |       |
|                    | i) <i>interior lot</i>               | 30.00    | 53.00    |            | m     |
|                    | ii) <i>corner lot</i>                | 30.00    |          | N/A        | m     |
|                    | c) minimum <i>front yard</i>         | 6.00     | 21.00    |            | m     |
|                    | d) minimum <i>exterior side yard</i> | 6.00     |          | N/A        | m     |
|                    | e) minimum <i>interior side yard</i> |          |          |            |       |
|                    | i) attached garage                   | 1.20     |          |            | m     |
|                    |                                      | 1.20     |          |            | m     |
|                    | ii) detached garage                  | 3.00     |          |            | m     |
|                    |                                      | 1.20     |          |            | m     |
|                    | f) minimum <i>rear yard</i>          | 9.00     | 62.80    |            | m     |
|                    | g) maximum building height           | 11.00    | < 11.0   |            | m     |

Comments

retained lands containing house are not deficient



## Zoning Deficiency

Simcoe: 185 Robinson St.  
Simcoe, ON  
N3Y 5L6  
519-426-5870  
Langton: 22 Albert St.  
Langton, On.  
N0E 1G0  
519-875-4485

---

### PROPERTY INFORMATION

Address: 77 Cultus Road

Legal Description:

Roll Number: 331054502017600

Application #:

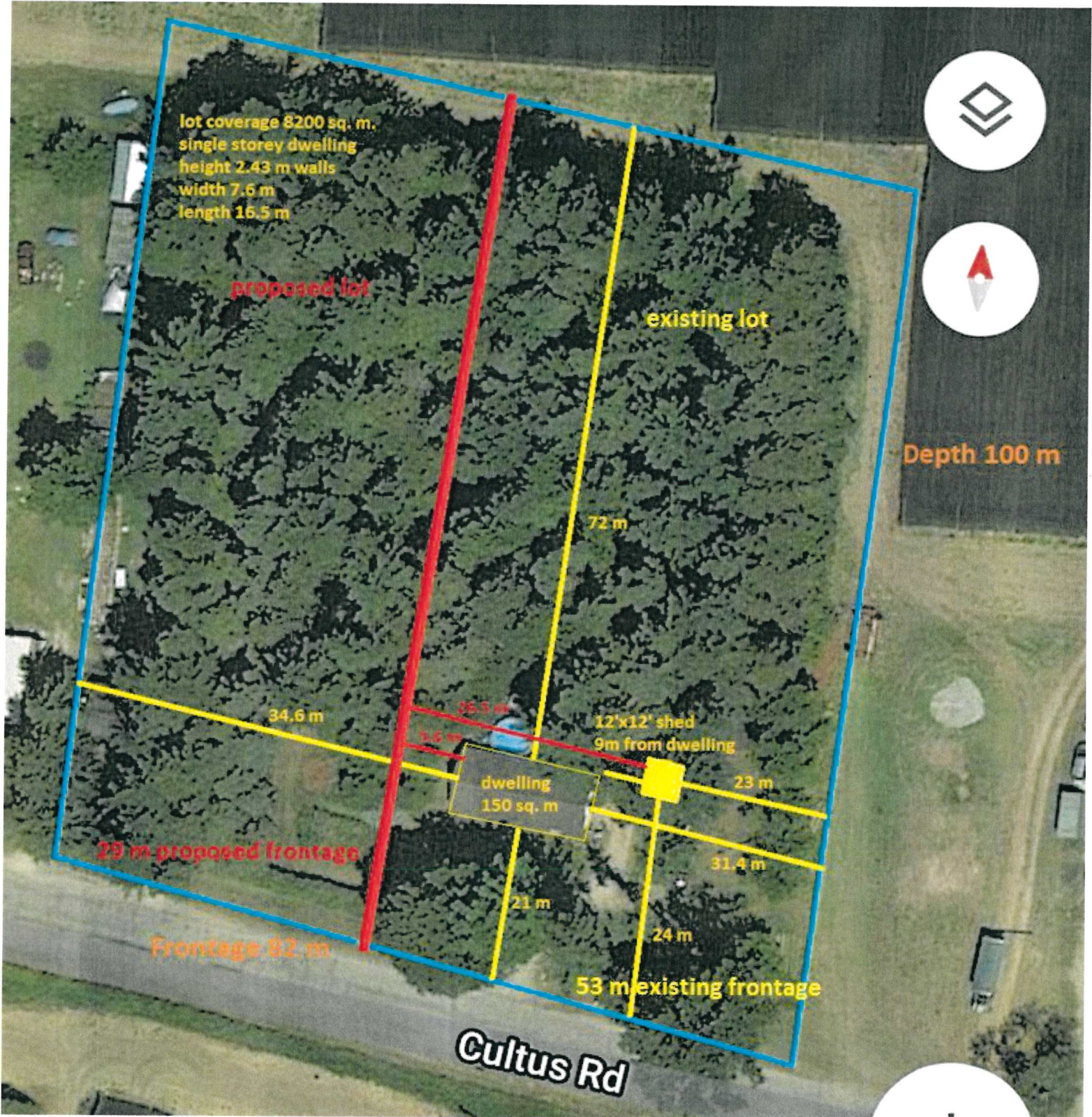
Information Origins: sever house and create new residential lot beside

---

### Hamlet Residential Zone (RH)

| New lot |                               | REQUIRED | PROPOSED | DEFICIENCY | UNITS |
|---------|-------------------------------|----------|----------|------------|-------|
| 5.7.2   | a) minimum lot area           |          |          |            |       |
|         | i) new lot                    | 4000.00  | 2900.00  | 1100.00    | sqm   |
|         | b) minimum lot frontage       |          |          |            |       |
|         | i) interior lot               | 30.00    | 29.00    | 1.00       | m     |
|         | ii) corner lot                | 30.00    |          | N/A        | m     |
|         | c) minimum front yard         | 6.00     |          |            | m     |
|         | d) minimum exterior side yard | 6.00     |          | N/A        | m     |
|         | e) minimum interior side yard |          |          |            |       |
|         | i) attached garage            | 1.20     |          |            | m     |
|         |                               | 1.20     |          |            | m     |
|         | ii) detached garage           | 3.00     |          |            | m     |
|         |                               | 1.20     |          |            | m     |
|         | f) minimum rear yard          | 9.00     |          |            | m     |

77 Cultus Road, Clear Creek, Ontario N0E 1C0



**Answer to question 4 on page 3**

**single story dwelling (retained)**- total of 150 sq.m. Set backs: front- 21m; rear- 62.8m; east side- 31.4m; west side- 36.6m. Dwelling is 16.5m long, 7.6m wide, and 2.43m interior wall height. Lot coverage of 8200 sq.m.

**Storage shed (retained)**- total of 13.4 sq.m. Set backs: front- 24m; rear- 70m; east side- 23m; west side- 55m. storage she is 3.7m x 3.7m

# BOS Engineering & Environmental Services Inc.

46 Donnybrook Road London ON N5X 3C8 Ph: (519) 850-9987 Fax: (519) 663-8057 e-mail: a.bos@sympatico.ca

August 30, 2021

**BY EMAIL ONLY TO: adinvest20 <adinvest20@gmail.com>**

**Att: Dave Wolf & Abe Klassen**

## **ADINVEST20**

151 Vienna Rd  
Tillsonburg ON  
N4G 3C9

Dear Sir: **RE: On-Site Servicing for Single Lot Development, to be severed from 77 Cultus Road, Houghton Township, County of Norfolk**

## **1. Background**

The subject property is known as 77 Cultus Road in Norfolk County. The residential property is 0.88ha in size and hosts a single-family residence. A residential lot 0.29 ha in size is being severed from the property leaving a retained property of 0.59 ha in size.

The proposed frontages of the 100m deep lots will be 29m and 59m respectively.

The subject of this report is to determine serviceability of the lots. Investigations were carried out to assess the proposed development in the context of:

1. The Ontario Building Code for wastewater treatment system sizing in respect of house sewage load, minimum setbacks to structures, drains, lot lines and water wells in addition to native soil, slopes and anticipated residential sewage load.
2. Impact Assessment regarding isolation of sewage effluent from groundwater and/or attenuation of contaminants to groundwater.

Since sewage servicing is highly dependent on the native soils, subsurface investigations were completed and a site sketch was prepared.

# BOS Engineering & Environmental Services Inc.

## 2. Existing Subsurface

On July 13<sup>th</sup>, a site visit was carried out, accompanied by a backhoe and operator provided by the client. Two test pits were formed as indicated on the enclosed drawing. The test pit logs and locations are presented on Sketch 1 in Appendix B and are summarized below:

| <u>TEST PIT</u>       | <u>DEPTH (cm)</u>               | <u>SOIL TYPE</u>                                                                                                               |
|-----------------------|---------------------------------|--------------------------------------------------------------------------------------------------------------------------------|
| TP 1<br>(Elev: 99.41) | 0 - 30<br>30 - 105<br>105 - 168 | TOPSOIL<br>SM Silty Fine SAND (Tested: T= 10 to 12 min/cm)<br>SM Silty Fine SAND (Mottled)<br>SEASONAL GROUNDWATER @ 98.36     |
| TP 2<br>(Elev: 99.36) | 0 - 30<br>30 - 112<br>112 - 155 | TOPSOIL<br>SP Fine Br. SAND (T= 8 min/cm)<br>SP Fine Gr. SAND (saturated) (Tested: T= 8min/cm)<br>SEASONAL GROUNDWATER @ 98.24 |

Topsoil is 30cm in depth underlain by fine SAND that was silty at test pit 1. The sand continued to the termination depths of 155 to 168 cm becoming grey or mottled at depths of 105 to 112 cm indicative of seasonal groundwater levels to these elevations. Elevations were taken of the test pit elevations relative to a local benchmark as identified on the attached sketch.

The average coefficient of permeability of the silty sand is estimated to be in the order of  $10^{-3}$  cm/s.

The percolation time for sewage system design purposes is 12 min/cm. Soil grain size analyses are presented on sketch 1 in Appendix B.

## 3. Topography

A topographical survey was not conducted by BOS Engineering at the time of testing. Spot elevations at the test pits were taken to relate the seasonal high groundwater elevation to the bottom of siding of the existing home, as identified on the sketch.

# BOS Engineering & Environmental Services Inc.

## 4. Servicing of Existing Homes

The existing home on the subject site and the nearby home just west of the property are both serviced by onsite systems and private wells. The wastewater treatment systems are believed to be conventional septic tanks with in-ground trench systems. They were not located on the site but are believed by the owner to be in the approximate positions indicated on the accompanying sketch.

The water supply for the existing homes is attested by the client to be provided by an on-site sand point well on each lot. The approximate locations of these wells are indicated on the attached sketch. Ontario Water Well Records were reviewed for this area. The two subject wells do not appear to be included in the Provincial database. Although this general area appears to have a few sand point wells, it is therefore believed that the existing wells are unregistered.

Under the Ontario Building Code, sand point wells are required to be located at least 30m from septic system distribution pipes and 15m from septic tanks. There is likely compliance with this requirement for the septic system and well on the subject property. That may or may not be the case on the adjacent westerly property, however, it would not negatively affect the proposed consent application.

## 5. Sewage Impact Assessment

In the context of a multi-lot development, municipalities often require assessment of groundwater impacts in accordance with MOE Guideline D5-4. This procedure outlines a multi-step process to gauge the effects of the combined effluent discharges from all of the individual sewage systems in a development, usually based on nitrogen as an indicator of groundwater impact potential. Although this procedure is normally applied to creation of five or more lots, municipalities are encouraged by the Ministry of the Environment Conservation and Parks to apply this technique to apply the procedure to smaller developments. Following is an application of the steps in Procedure D-5-4.

### **5.1 Definition of Minimum Lot Size**

Generally, if the average lot size is smaller than 1.0 ha in size with no lot being smaller than 0.8 ha, then a hydrogeological assessment is not required provided that the area is not hydrogeologically sensitive. Since both lots are smaller, it is necessary to proceed to the next step.

### **5.2 System Isolation Considerations**

Where smaller lots than 1.0 ha are proposed, it is necessary to consider the status of isolation of the sewage effluent from the existing or potential supply aquifer. Based on the shallow soils as assessed, it is unlikely that the supply aquifer is hydrogeologically isolated from the surficial brown clay soils that will receive the sewage effluent. Therefore the next step is required.

**BOS** Engineering & Environmental Services Inc.

### 5.3 Dilution Calculations

The following Guideline D5-4 Predictive Assessment was completed to assess tolerable environmental impacts at the property boundaries for each of the retained and severed lots and to provide any necessary recommendations to minimize such risks. Calculations are presented in spreadsheet format in Appendix A.

### 5.3.1 Nitrates and Maximum Acceptable Concentration

Residential sewage systems for treatment of domestic wastewater generally produce nutrients and bacteria in their effluent waters for treatment and uptake by the soil and vegetation. Bacteria and phosphorus are adequately removed where soils exist that reasonably treat the effluent. However, nitrate is a potential contaminant that remains in solution after effluent treatment by conventional systems and can be transmitted to groundwater and laterally to off-site properties. Nitrate is considered the critical parameter for analysis of domestic sewage system impacts on groundwater in sandy soils.

In the Ontario Drinking Water Objectives, the maximum acceptable concentration of nitrates is set at 10 mg/L as N. This parameter has been found in conventional septic tank effluent at concentrations of 40 mg/L, in studies conducted by MOE. At concentrations above the Drinking Water Guidelines, 2001, (i.e. 10 mg/L), nitrates in drinking water have been found to be hazardous to the health of infants.

It must be shown that sufficient dilution of this effluent takes place to ensure that the effluent concentration does not exceed the Drinking Water Quality Objective of 10 mg/L for downstream ecosystems. Although Nitrate is the Nitrogen species of concern, assessment is normally made based on Total Nitrogen due to the complexities of nitrification/denitrification in the natural environment. Precipitation and infiltration through the soil to groundwater normally provide dilution and provide the basis for the following impact calculations.

### 5.3.2 Estimated Effluent Flow

The average daily design sewage load per residence is 1000 L/day, based on techniques suggested by the Ontario Ministry of the Environment in Guideline D-5-4 “Technical Guideline for Individual On-Site Sewage Systems – Water Quality Impact Risk Assessments”.

Following is an annual load estimate of the total effluent volume for each lot:

$$(1000 \text{ L/day}) \times 365 \text{ days/year} = 365,000 \text{ L/year}$$

**TOTAL ANNUAL SEWAGE LOAD: 365,000 L/year**

# BOS Engineering & Environmental Services Inc.

## 5.3.3 Precipitation Recharge

The mean annual precipitation for Brantford is 867 mm.

The recharge capacity of the property is based on topography, soils and vegetative cover on the site. The amounts of infiltration and runoff are of course, directly dependent on the total precipitation in conjunction with the above factors.

## 5.3.4 Surplus Water Estimation

Evaporation/evapotranspiration for this area was assumed to be average in this area at approximately 50% of the precipitation or 434 mm. The surplus water that is available for runoff or infiltration is:

$$867 \text{ mm/yr} - 434 \text{ mm/yr} = 433 \text{ mm/yr}$$

## 5.3.5 Infiltration Factors

Surplus water may either infiltrate the ground to recharge groundwater or it may leave the site as surface water. The Ministry of Environment Conservation and Parks has compiled a set of factors to quantify the percentage of surplus water that will infiltrate to the subsurface. These factors are presented in the following table:

| Area Characteristic                       | Infiltration Factor "I" |
|-------------------------------------------|-------------------------|
| TOPOGRAPHY                                |                         |
| - Flat (average slope < .6 %)             | 0.30                    |
| - Rolling (ave. slope of 0.6 to 2.0%)     | 0.20                    |
| - Hilly land (ave. slope of 2.0 to >5.0%) | 0.10                    |
| SOIL                                      |                         |
| - Tight Impervious Clay                   | 0.10                    |
| - Medium (combinations of clay and loam)  | 0.20                    |
| - Open Sandy Loam                         | 0.40                    |
| VEGETATIVE COVER                          |                         |
| - Cultivated Lands                        | 0.10                    |
| - Woodland or grassland                   | 0.20                    |

# BOS Engineering & Environmental Services Inc.

The land is level to rolling and forested/grassed and the soils are sandy. Therefore, the percentage of surplus water that is estimated to infiltrate is the sum of the factors for each of the categories in the above table:

$$I = 0.20 + 0.20 + 0.20 = 0.60$$

Therefore, 60% of the surplus water (net of evaporation/transpiration) is expected to infiltrate.

### *5.3.3 Volume of Water Available for Dilution*

The amount of water available for dilution may be calculated by multiplying the estimated depth of annual surplus water by the area of the property and then by the percentage that is estimated to infiltrate (Infiltration Factor):

$$0.867 \text{ m/year} - 0.434 \text{ m/year} \times 60\% \times \text{Lot Area}$$

$$= 0.26 \times \text{Lot Area}$$

The lot areas for the new and retained lots respectively are 2900m<sup>2</sup> and 5300m<sup>2</sup>. Therefore, annual dilution volumes for new and retained lots respectively are 754m<sup>3</sup> and 1378m<sup>3</sup>.

### **5.4 Impact Calculation-Conventional Septic Systems**

The nitrate concentration at the property boundary can be expressed by the following relationship:

$$Co = [QE (NE) + DW (NB)]/[DW + QE]$$

Where:

Co = Nitrate Concentration at the property boundary (mg/L);

NE = Nitrate Concentration of the sewage effluent (from the tank) (mg/L);

QE = Yearly volume of effluent produced (L/year);

DW = Dilution Water available (L/yr);

NB = Background Nitrate Concentration in diluting precipitation, (mg/L).

The values for the variables are:

NE = 40 mg/L (from section 5.31);

QE = 365,000 L/lot/year (from section 5.3.2);

DW = 754,000 & 1,378,000 L/year (from section 5.3.3);

NB = 1.0 mg/L (based on estimated concentration in dilution water).

The spreadsheet in Appendix A provides the above computations and results are

# BOS Engineering & Environmental Services Inc.

summarized as follows:

- The nitrate concentration of effluent at the property boundary of the lot to be severed is calculated to be 13.7 mg/L, which exceeds the Ontario Drinking Water Guideline of 10.0 mg/L.
- The nitrate concentration of effluent at the property boundary of the retained lot is calculated to be 9.2 mg/L, which meets the Ontario Drinking Water Guideline of 10.0 mg/L.
- Impact calculations with basic levels of tertiary treatment are presented in section 4.5 below.

## **5.5 Impact Calculation-Nitrate Control Systems**

The Norweco system has N-control efficiency levels of 70% or more for a net nitrate load to the soil of 12 mg/L.

Following is a recalculation of the nitrate load at the property boundary based on Norweco systems that can remove 70% of the nitrogen load.

- Using nitrogen control, the nitrate concentration of effluent at the property boundary of the lot to be severed is calculated to be 4.6 mg/L, which is well within the Ontario Drinking Water Guideline of 10.0 mg/L.
- Although the retained lot already meets the Ontario Drinking Water Quality Guideline using conventional treatment, using nitrate control, the nitrate concentration of effluent at the property boundary of the retained lot is calculated to be 3.3 mg/L, which is well within the Ontario Drinking Water Guideline of 10.0 mg/L.
- For sensitivity analysis, the spreadsheet also provides a calculation for a lesser nitrogen treatment efficiency of only 40% which is also shown to be feasible for both lots in meeting the Ontario Drinking Water Guideline for nitrates.

# BOS Engineering & Environmental Services Inc.

## 6. Conclusions and Recommendations

- 6.1 Based on the foregoing analysis, it is recommended that sewage treatment system on the retained lot be fitted with a secondary pre-treatment system capable of at least 40% nitrogen reduction efficiency. Note that the proposed NORWECO system specified on the sketch in Appendix B is certified under the CAN/BNQ testing procedure for 72% nitrogen reduction.
- 6.2 Proposed house characteristics and sewage system size and layout on the retained lot are indicated on the same sketch together with estimated locations of adjacent septic systems and wells.
- 6.3 The proposed lot is sufficiently deep to allow required separation distances (per Ontario Building Code) between treatment tanks and shallow wells on both the subject property and adjacent properties.
- 6.4 Grading and drainage plans to be completed at the building permit stage should recognize the proposed septic system sizing and ensure adequate drainage of the rear yard. Plans should also recognise the relatively shallow groundwater elevation documented on the site.
- 6.5 The retained lot is of sufficient size to retain an existing conventional septic system.
- 6.6 Development of the new lot is to comply with Ontario Building Code requirements including minimum setbacks between septic systems and shallow wells. Existing septic system and well locations should be verified to meet setbacks from the proposed septic system and well on the new lot.

We trust this meets the requirements of our scope of work.

Sincerely,

**BOS Engineering & Environmental Services Inc.**



**Art W. Bos P. Eng.**

Enclosures: Appendices

**BOS** Engineering & Environmental Services Inc.

**APPENDIX A**  
**IMPACT CALCULATIONS**

# BOS Engineering & Environmental Services Inc.

## 77 Cultus Road D5-4 Nitrate Calculations - Varying Pretreatment Efficiencies

30-Aug-21

### WITH NO PRETREATMENT - 60% natural infiltration

| Lot Size<br>(m <sup>2</sup> ) | Mean Annual <sup>1</sup><br>Precip. (mm/yr) | Evapo. <sup>2</sup><br>(mm/yr) | Infiltration <sup>3</sup><br>(%) | Dilution Volume<br>(L/yr) | Background<br>NO <sub>3</sub> + NO <sub>2</sub> (mg/L) | Septage Conc.<br>(mg/L) | Reduction Effic.<br>(%) | Treated Conc.<br>(mg/L) | No. of Houses<br>(#) | Sewage Volume<br>(L/yr) | Concentration at Lot Boundary<br>(mg/L) | OWQG<br>(mg/L) |
|-------------------------------|---------------------------------------------|--------------------------------|----------------------------------|---------------------------|--------------------------------------------------------|-------------------------|-------------------------|-------------------------|----------------------|-------------------------|-----------------------------------------|----------------|
| New Lot                       | 2900                                        | 867                            | 434                              | 60                        | 753420                                                 | 1.0                     | 40                      | 0                       | 1                    | 365000                  | 13.73                                   | 10             |
| Retained Lot                  | 5300                                        | 867                            | 434                              | 60                        | 1376940                                                | 1.0                     | 40                      | 0                       | 1                    | 365000                  | 9.17                                    | 10             |

### WITH 50% PRETREATMENT - 60% natural infiltration

| Lot Size<br>(m <sup>2</sup> ) | Mean Annual <sup>1</sup><br>Precip. (mm/yr) | Evapo. <sup>2</sup><br>(mm/yr) | Infiltration <sup>3</sup><br>(%) | Dilution Volume<br>(L/yr) | Background<br>NO <sub>3</sub> + NO <sub>2</sub> (mg/L) | Septage Conc.<br>(mg/L) | Reduction Effic.<br>(%) | Treated Conc.<br>(mg/L) | No. of Houses<br>(#) | Sewage Volume<br>(L/yr) | Concentration at Lot Boundary<br>(mg/L) | OWQG<br>(mg/L) |
|-------------------------------|---------------------------------------------|--------------------------------|----------------------------------|---------------------------|--------------------------------------------------------|-------------------------|-------------------------|-------------------------|----------------------|-------------------------|-----------------------------------------|----------------|
| New Lot                       | 2900                                        | 867                            | 434                              | 60                        | 753420                                                 | 1.0                     | 40                      | 24                      | 1                    | 365000                  | 8.51                                    | 10             |
| Retained Lot                  | 5300                                        | 867                            | 434                              | 60                        | 1376940                                                | 1.0                     | 40                      | 24                      | 1                    | 365000                  | 5.82                                    | 10             |

### WITH 70% NITRATE PRETREATMENT - 60% natural infiltration

| Lot Size<br>(m <sup>2</sup> ) | Mean Annual <sup>1</sup><br>Precip. (mm/yr) | Evapo. <sup>2</sup><br>(mm/yr) | Infiltration <sup>3</sup><br>(%) | Dilution Volume<br>(L/yr) | Background<br>NO <sub>3</sub> + NO <sub>2</sub> (mg/L) | Septage Conc.<br>(mg/L) | Reduction Effic.<br>(%) | Treated Conc.<br>(mg/L) | No. of Houses<br>(#) | Sewage Volume<br>(L/yr) | Concentration at Lot Boundary<br>(mg/L) | OWQG<br>(mg/L) |
|-------------------------------|---------------------------------------------|--------------------------------|----------------------------------|---------------------------|--------------------------------------------------------|-------------------------|-------------------------|-------------------------|----------------------|-------------------------|-----------------------------------------|----------------|
| New Lot                       | 2900                                        | 867                            | 434                              | 60                        | 753420                                                 | 1.0                     | 40                      | 12                      | 1                    | 365000                  | 4.59                                    | 10             |
| Retained Lot                  | 5300                                        | 867                            | 434                              | 60                        | 1376940                                                | 1.0                     | 40                      | 12                      | 1                    | 365000                  | 3.30                                    | 10             |

1. Note that mean annual precipitation is based on Brantford weather station

2. Evaporation is based on typical stormwater balance calculations in SW Ontario of approximately 50% of precipitation.

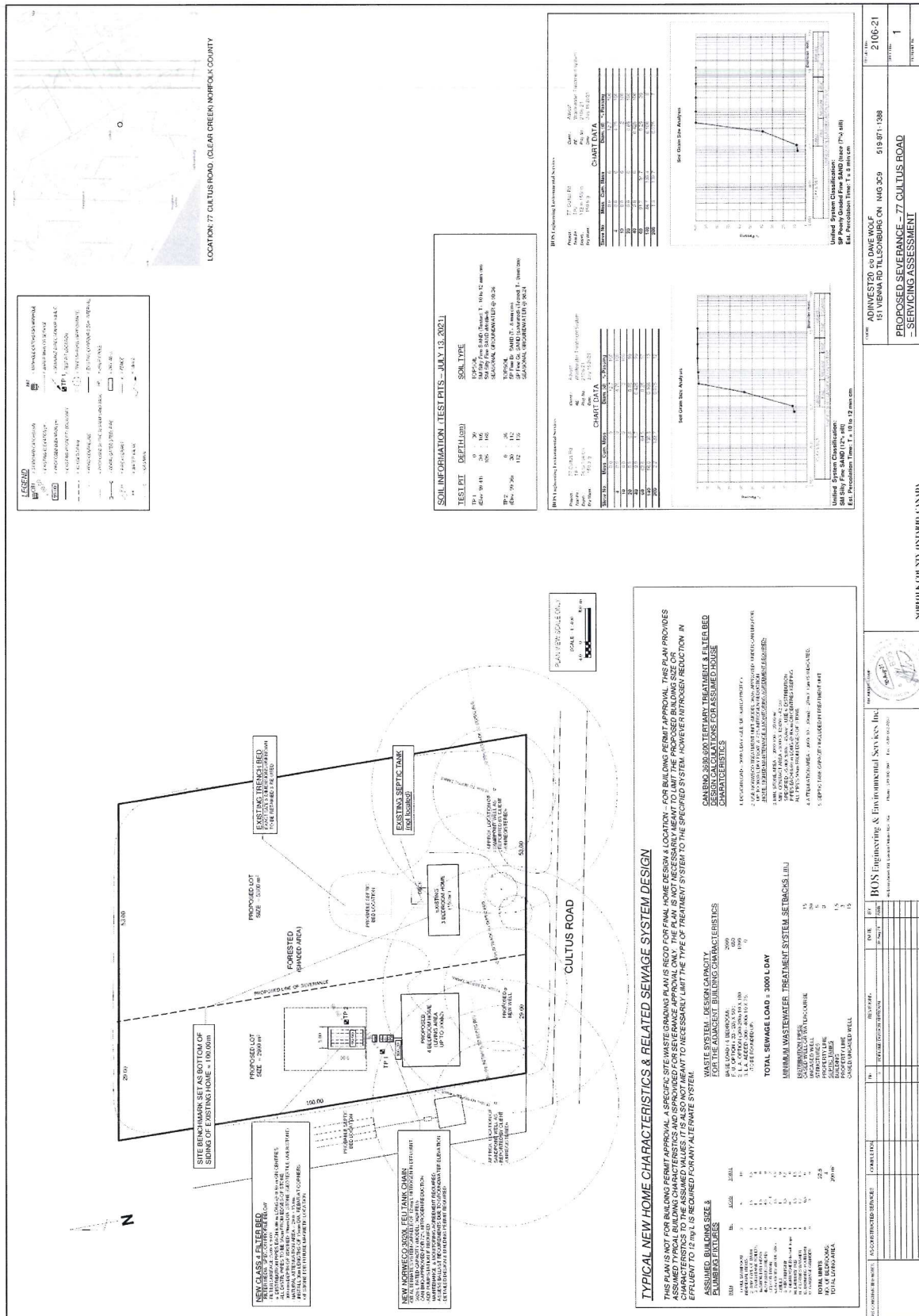
3. Natural (un-enhanced) Infiltration was conservatively estimated to be 60% of surplus water for sandy soils.

4. Background Nitrate concentration is conservatively estimated at 1.0 mg/L for dilution precipitation.

**BOS** Engineering & Environmental Services Inc.

**APPENDIX B**

**Sketch 1**



1



## On Site Sewage Disposal System Location Plan

DATE: Feb 10/2022

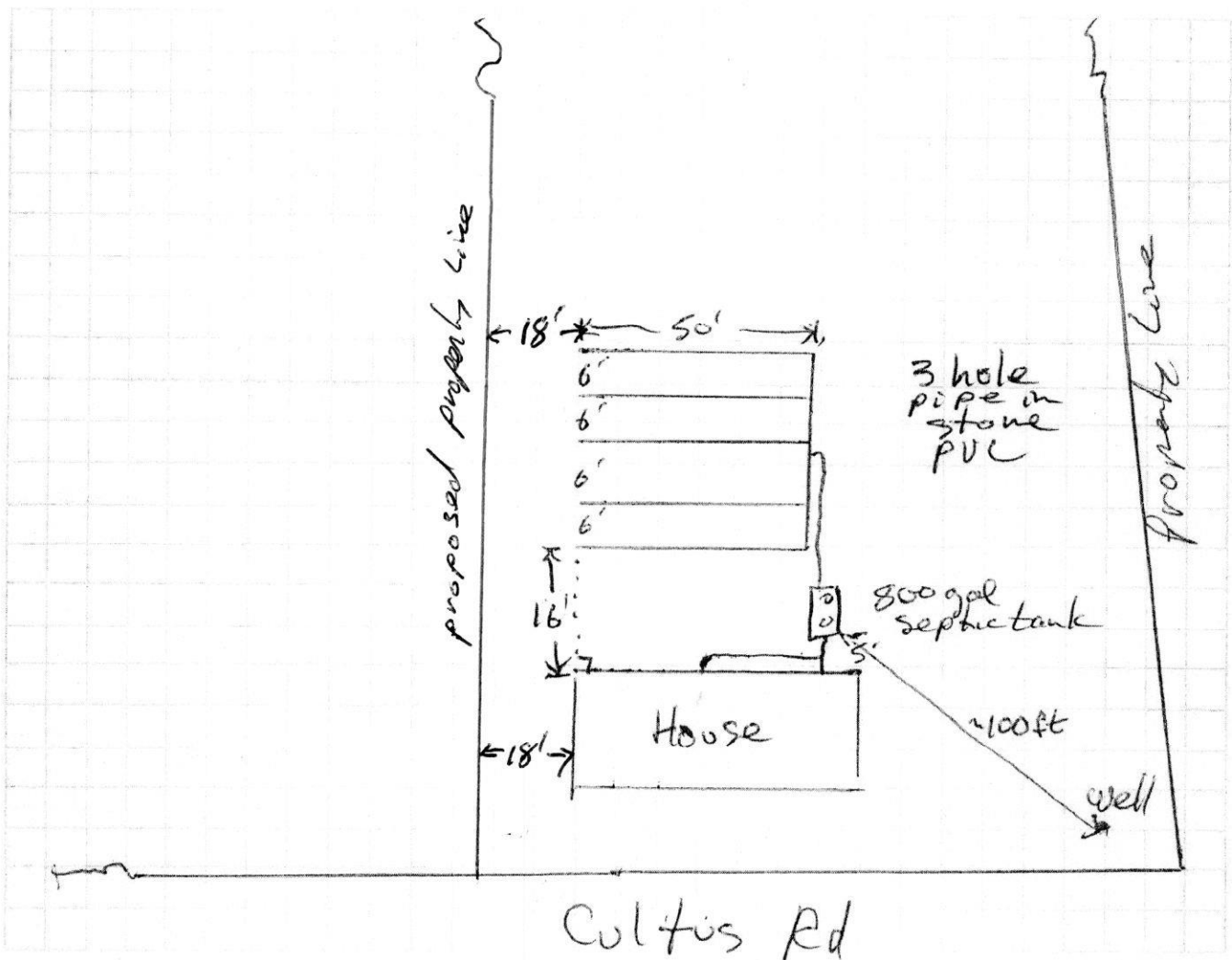
APPLICATION NUMBER: \_\_\_\_\_

OWNER: Dave Wolf

EVALUATOR: Don Awney

PROPERTY ADDRESS: 27 Cultus Rd, Clear Creek

Please provide a DIMENSIONED sketch drawing indicating EXISTING AND PROPOSED property lines, existing roads and driveways, location of all existing buildings, location of existing wells, and location of existing septic tanks and tile beds.



PREPARED BY: \_\_\_\_\_

NOTE: The above sketch is not to exact scale.

**SCOPED ENVIRONMENTAL IMPACT STUDY**

77 Cultus Road  
Norfolk County, ON

## **1.0 PLANNING SEQUENCE**

This Scoped Environmental Impact Study (SEIS) was prepared for Marten Klassen (the applicant's representative).

The contents of this report pertain to the legal parcel at 77 Cultus Road in Clear Creek, Norfolk County, ON (Figures 1 & 2).

This work program is triggered by municipal and provincial requirements related to the proposed severance occurring on or within 120 m of lands designated as "Significant Woodlands" by the Norfolk County Official Plan (OP) Schedule "C-6" Natural Heritage map (Figure 4).

This report will be sent to Norfolk County (the municipality), who will subsequently circulate it to the other parties, if any, involved for their review. It follows the municipal and provincial guidelines for a SEIS.

Vroom + Leonard attended the site in April 2022 to review its attributes in relation to the work program historically required by the regulatory groups based on our experience within this jurisdiction and others.

Based on the pre-consultation meeting with Norfolk County Senior Planner Jennifer Catarino, and Norfolk County Forestry and Park Supervisor Adam Biddle, in compliance with the Norfolk County OP, Section 9.7.1, a SEIS was recommended to fulfill the County's requirements for an environmental impact study. Due to the low likelihood of impact on the natural environment resulting from the proposed alteration, one in season flora survey was agreed upon. The municipal requirements and stipulations of a SEIS can be found in Appendix B and are fully described with reference to the proposed alteration in Section 6 of this report.

## **1.1 PROPERTY DESCRIPTION & PROPOSED ALTERATION**

The subject lands are located at 77 Cultus Road, in Cultus (Figure 1). More specifically, the subject lands are located on the north side of Cultus Road (Figure 2).

The legal parcel is  $\pm 2.14$  ac / 0.86 ha in size. The full legal parcel is 90% vegetated with Significant Woodland designated by the Norfolk County OP. The woodland is isolated from other natural heritage features and measures  $\pm 1.93$  ac / 0.78 ha in size. The woodland is vegetated by a cultural plantation planted approximately 80 – 100 years ago. The plantation consists of White Pine, Red Pine, and Scots Pine and is considered CUP3 according to Ecological Land Classification (ELC) 1998 and FOCM6 Naturalized Coniferous Plantation under the 2008 ELC. The woodland flora and fauna habitat are more fully described in Section 3.2.

The southern 5-10 % of the current legal parcel contains an existing residential dwelling on the southeast portion with an attendant maintained yard and ornamental gardens. Directly east of the woodland is another rural single-family dwelling and maintained lawn. Agricultural fields border the north and east of the woodland.

For the purposes of our study, the study area extends 120 m from the subject lands, consistent with the Significant Wildlife Habitat Technical Guide OMNR, 2000 and Section 3.5.2 of the Norfolk County OP.

The proposed development involves severing a residential lot from the southwest portion of the legal parcel for residential purposes. We assume that vegetation removal within the Significant Woodland Natural Heritage feature on-site will be required to facilitate the proposed development, which must comply with the Norfolk County Forest Conservation By-law 2006-170/2022-XX. In addition to the house, a private sewage disposal system and well will likely be constructed on the proposed parcel.

### 1.2 Federal Considerations

The Department of Fisheries and Oceans Canada (DFO) is responsible for the conservation, management, and protection of fish and fish habitat. DFO is given authority to achieve this under the federal Fisheries Act, 2019. Fish habitat as defined in the Fisheries Act 2019 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.”

There are no open watercourses that would be considered Fish Habitat in the study area. According to current Department of Fisheries and Oceans (DFO) aquatic Species at Risk (SAR) mapping, the subject lands do not “contain any critical habitat of aquatic SAR, nor have any SAR been found/are likely to be found” (Figure 5).

Given no aquatic features in the study area, a fisheries assessment and DFO involvement are not required for the proposed severance.

#### 1.2.3 Provincial Considerations

The *Provincial Policy Statement* (PPS) 2020 states that “Natural Heritage features and areas shall be protected for the long term” (PPS, 2014, 2.1.1). Additionally, Section 2.1.2 states that “The diversity and connectivity of natural features in an area, and the long-term ecological function and biodiversity of natural heritage systems, should be maintained, restored or, where possible, improved, recognizing linkages between and among natural heritage features and areas, surface water features and groundwater features.”

Several stipulations are outlined by the Provincial Policy Statement (PPS, 2020) regarding development within 120 m of a Natural Heritage area. The PPS defines seven natural heritage features where development and site alteration are not permitted in or within 120 m unless it has been demonstrated that there will be no negative impacts on the natural features or their ecological functions. These seven natural heritage features and their applicability to the proposed development include:

|                                                       |                               |
|-------------------------------------------------------|-------------------------------|
| Significant Wetlands and Significant Coastal Wetlands | Not present                   |
| Significant Woodlands                                 | On-site                       |
| Significant Valleylands                               | Not present                   |
| Significant Wildlife Habitat (SWH)                    | To be discussed in this study |

|                                                               |                               |
|---------------------------------------------------------------|-------------------------------|
| Significant areas of natural and scientific interest (ANSI's) | Not present                   |
| Fish Habitat                                                  | Not present                   |
| Habitat of endangered or threatened species                   | To be discussed in this study |

The related PPS stipulations are fully outlined in Appendix A and are discussed in terms of the proposed severance in Section 6 of this report.

Our reporting will be consistent with the 2020 Provincial Policy Statement, the Natural Heritage Reference Manual (Ontario Ministry of Natural Resources & Forests ..." MNR") and the Ecological Land Classification for Southern Ontario (MNR..." ELC").

The PPS 2020 states that development and site alteration shall not be permitted in Natural Heritage features and areas or adjacent lands unless it has been demonstrated that there will be no negative impacts on the natural features or their ecological functions.

The Ministry of Environment, Conservation, and Parks (MECP) has taken over the responsibility of the Endangered Species Act (ESA), 2007. The MECP protocol consists of conducting a self-screening and submitting an Information Gathering Form (IGF) if a project is likely to contravene the ESA and require permitting. Marten Klassen has reached out to the MECP SAR department with details of the proposed severance. Their response is provided in Appendix C.

#### **1.2.4 Municipal Considerations**

The Norfolk County OP, Section 3.5.2, regards adjacent habitat as lands within 120 m of a designated Natural Heritage area. Section 1.3 of the OP (2022) states that its goals include:

"...ensuring the protection, enhancement, diversification and connectivity of Norfolk's Natural Heritage Features, natural heritage functions, and species habitat, as well as the protection of water quality and quantity."

The Norfolk County OP (2022), Section 3.5.1, also states that:

" b) Development and site alteration shall not be permitted on lands adjacent to the natural heritage features and areas, unless the ecological function of the adjacent land has been evaluated and it has been demonstrated that there will be no negative impacts on the natural features or on their ecological functions that cannot be adequately mitigated."

The tablelands are designated as "Urban Residential" according to the Norfolk County OP Schedule "B-12" Land Use mapping. According to the OP Schedule "C-6" Natural Heritage mapping, the woodland on site is designated as Significant Woodlands.

The OP states the Natural Heritage areas on-site must be further investigated to demonstrate that the proposed development will not negatively impact these features and/or their functions in a negative or unalterable manner.

The Scoped Environmental Impact Study requirements (Section 9.7.1.2) are fully outlined in Appendix B and are discussed in terms of the proposed severance in Section 6 of this report.

### **1.2.5 Conservation Authority Considerations**

The Long Point Region Conservation Authority (LPRCA) regulates abiotic factors relating to Natural Hazard lands, wetlands, watercourses, and adjacent lands. There are no designated Natural Hazard lands, wetlands, or watercourses on-site; therefore, we assume an LPRCA permit will not be required. However, this SEIS may be circulated to the LPRCA should the municipality deem it necessary.

## **2.0 ABIOTIC ATTRIBUTES**

### **2.1 Soils and Slopes**

According to the OMAFRA AgMaps database, the soils on site are Walsingham soils. With reference to the Soils of the Regional Municipality of Haldimand-Norfolk (Volume 1 and 2), Walsingham soils usually consist of fine sand, except in the surface and lower B horizons where loamy fine sand sometimes occurs. Lacustrine clays and silts are common below 1 m depth and result in temporarily high water tables during the winter and spring. Walsingham soils are imperfectly drained and rapidly permeable.

According to the OMAFRA AgMaps database and on-site investigations, the grades on-site are relatively flat.

### **2.2 Hydrology and Groundwater**

The subject lands are located within the Long Point Source Protection Area subwatershed. The LPRCA 2018 Watershed Report Card states that this watershed has insufficient data on the groundwater quality conditions and poor surface water quality conditions.

The MECP Source Protection Information Atlas provides the following conditions for the subject lands:

“Source Protection Area: **Long Point**  
 Wellhead Protection Area: **No**  
 Wellhead Protection Area E (GUDI): **No**  
 Intake Protection Zone: **No**  
 Issue Contributing Area: **No**  
 Significant Groundwater Recharge Area: **Yes**  
 Highly Vulnerable Aquifer: **Yes** ; score is **6**  
 Event Based Area: **No**  
 Wellhead Protection Area Q1: **No**  
 Wellhead Protection Area Q2: **No**  
 Intake Protection Zone Q: **No**”

Ontario Well Records within the subject lands indicated the groundwater is  $\pm 8.2$  m below grade. Topsoil was found from 0-0.6 m, followed by 7.02 m of sand and a further 0.6 m of grey clay.

### **3.0 BIOTIC CONSIDERATIONS**

The following information and analysis are based on one site visit during Spring 2022 by the authors, and database and literature reviews. A single site visit was deemed acceptable upon during a pre-consultation because the application is regarding a proposed severance that involves no impact on natural heritage and the small isolated nature of the woodland. If significant habitat or diversity was discovered during that site visit, further fieldwork could be recommended.

The LPRCA 2018 Watershed Report Card states that this watershed has poor wetland and riparian zones and fair forest conditions.

#### **3.1 Aquatic Attributes**

No aquatic attributes are present on the subject lands or in the 120 m study area.

#### **3.2 Vegetative Attributes**

According to the MNR Ecological Land Classification (ELC 1998 & 2008) there is only one vegetated community found within the study area described as FOCM6 Naturalized Coniferous Plantation under the 2008 ELC.

The woodlot consists of primarily White Pine, Red Pine, and Scots Pine planted approximately 80-100 years ago. Trees are typically  $\pm$  12-18 inches diameter at breast height (dbh). The woodlot has been managed and thinned over time, and trees are  $\pm$  6 m apart.

The management and thinning of the woodlot have allowed for other deciduous species to grow within the woodlot, although diversity is still limited. Associates and understorey trees include Sugar Maple, Black Cherry, and American Beech. Unfortunately, the Beech trees appear to have Beech bark disease, and there are also a few invasive White Mulberry in the understorey and Locust on the periphery of the woodland. There is a sparse shrublayer, including a few Spicebush, Hazel, Black Cherry, Maple, and Ash saplings. The groundlayer is relatively sparse with woodland ferns, Garlic Mustard, Enchanter's Nightshade, and Raspberry.

The edges that border the agricultural field contain common weedy edge species.

#### *Diversity*

The vegetation on site is anthropogenic and has become naturalized over time. there is little structural diversity between canopy layers with a sparse shrublayer and groundlayer. The flat topography of the site does not provide an array of microclimatic habitats that would support a variety of species. There is no combination of natural heritage features such as valleylands, aquatic attributes, or wetlands. For these reasons, diversity is low.

#### *Significant Species*

Recommended by the MECP/MNRF, an NHIC 1 km<sup>2</sup> grid data search identifying species that have been historically recorded in the general area was conducted. According to the NHIC 1 km<sup>2</sup> mapping, there are no records of floral SAR in the general area. The Clear Creek Wetland and a Norfolk Forest Complex were triggered in the 1 km<sup>2</sup> grid; however, these features are outside the study area for this SEIS.

### 3.3 Faunal Attributes

#### *Linkage and Size*

Interior habitat is defined as habitat more than 100 meters from the edge of the woodland (The Natural Heritage Reference Manual 2010) and is recognized as important for area-sensitive species. Based on the size and shape of the Natural Heritage Area, there is no interior habitat present in the study area that would support area-sensitive species or habitat.

#### *Disturbance*

The small woodland is logged and used as part of the residential 'yard' for the single-family dwelling on-site.

#### *Significant Species*

According to the NHIC 1 km<sup>2</sup> mapping, two faunal SAR were historically recorded in the general area.

Snapping Turtle [SC]: There is no open water features within the subject lands or 120 m study area that would be required for Snapping Turtles. Although females will travel considerable distances overland to lay eggs, they typically search for gravel and sand sites along stream beds and occasionally use human-made gravel features. None of these nesting features are found on-site.

Eastern Hog-nosed Snake [THR]: Given the sandy soils and mix of open and woodland habitat on-site, SAR snakes, including Eastern Foxsnake [END] and Eastern Hog-nosed Snake [THR], and Gray Ratsnake [END], could all be encountered on-site. These species hibernate in rocky outcrops and on occasion human-made structures. They often lay eggs in compost piles, manure piles, and rotting logs. These species and their habitat are protected. There is no potential for hibernacula sites, and there is minimal downed woody debris and manure pile nesting potential on-site.

The large (>30 cm dbh) trees were checked for snags and cavities, which could provide habitat for SAR bats and other cavity-nesting species. However, again, habitat is marginal.

The open woodlands could support Eastern Wood-pewee [SC] and Red-headed Woodpecker [THR]; however, these species are urban tolerant, often found in edge habitats and hedgerows.

#### *Significant Wildlife Habitat*

We have reviewed the Significant Wildlife Habitat Guideline for region 7E in comparison to the vegetation/habitat features on-site (Appendix E). Because of the small size of the woodland, the isolated nature from other natural heritage features, the lack of diversity in flora, woodland structure, and topographic structure, no significant wildlife habitat is anticipated on-site or within the study area.

### 3.3 Representativeness

In our opinion, the floral and marginal faunal habitat provided within the subject lands are not significant to the local and regional landscape. There are no uncommon regional landscape features present.

#### **4.0 IMPACT ASSESSMENT AND MITIGATION**

As previously noted, this EIS is triggered by municipal requirements related to the proposed severance occurring adjacent to Natural Heritage Areas, indicated on the Official Plan of Norfolk County Schedule "C-6". The severance proposes no site alteration or construction. However, we have been informed that a single-family residential home is the proposed land use.

##### *Vegetation Removal:*

We do not have a site plan for use in this report, given that one is not required until the building permit stage. However, if vegetation removal limits match the eastern existing residential use (+/-30 m from the southern border), only approximately 24 conifers will be removed.

In our opinion, the vegetation on-site supports little diversity and habitat for floral and fauna and offers little value to the surrounding natural heritage area, therefore, we have no concerns regarding the limited removal. There is already disturbance in the form of invasive species, logging, and human activity within the woodland. However, timing mitigation to protect active breeding birds, SAR bats, and SAR snakes are required at the building permit application stage and discussed below.

##### *Significant Species:*

Although only one late April floral survey was completed, no floral SAR were recorded, nor are they anticipated within the woodlot due to the disturbed nature of the subject lands. Therefore, no restrictions or mitigation are required regarding flora.

Potential SAR fauna includes SAR snakes, urban tolerant birds including Eastern Wood-pewee [SC] and Red-headed Woodpecker [THR], and SAR roosting bats. Precautionary mitigation at the building permit stage should include limiting the amount of vegetation removal to the southern 30 m to ensure there is no complete habitat loss and tree cutting timing avoids the active season of these species.

##### *Timing Mitigation:*

\_Tree-cutting should not occur between March 15th and November 30th to avoid the risk of removing trees used by potential roosting SAR bats.

\_Following this timing also matches that of nesting season for migratory breeding birds in the region. The Migratory Breeding Bird Act (MBBA 1994), protects 386 migratory bird species in Canada. It states that "No person shall disturb, destroy, or take a nest, egg,...." (SOR/80-577, s. 4.). Birds protected under the MBBA 1994 may be present on-site since they can occur nearly anywhere in southern Ontario.

\_Additionally, given SAR snake hibernacula features were not evident on-site, the above timing matches the timing of activity for SAR snakes.

*Tree Root Disturbance:* Generally, construction practices and grade alteration can potentially impact the roots of adjacent trees to be retained. However, sandy soils such as those present on-site are less susceptible to compaction, and when roots have the

opportunity, they will graft onto the roots of other members of the ELC community, regardless of species. Intergrafting of roots with surrounding trees and the soil types provides resilience to the impacts of the proposed adjacent development. Additionally, the subject lands are relatively flat and the open. Therefore, we assume minimal grading will be required under the Ontario Building Code at the building permit stage.

*Hydrology:* The subject lands are in an area of sandy soils and significant groundwater recharge. The future development of one single-family home will have minimal impact of groundwater recharge with a minor development footprint in the rural landscape. Additionally, as noted, there are no aquatic features in the study area that obtain surface flow from the subject areas that should be considered. No mitigation regarding the indirect impact of the severance or future single-family dwelling is required.

## **5.0 CONSIDERATIONS & CONCLUSIONS**

### **5.1 Considerations**

#### *Federal Considerations*

Given the lack of direct impact on the municipal drains a DFO filing is not required.

#### *Provincial Considerations*

It is our opinion that the proposed development will not contravene the ESA, 2007, nor the PPS, 2020.

With reference to Section 2.1.3 of the PPS, the subject lands are not located within the listed Ecoregions.

Section 2.1.4 and 2.1.5 of the PPS are not applicable. Development is proposed within the subject lands where there are no PSWs, coastal wetlands, Significant valleylands, or areas of natural and scientific interest (ANSI). In regards to SWH, the vegetation present is of low quality, small in size, isolated, and is unlikely to support SAR or SWH.

In regards to Section 2.1.6, there will be no direct impact on Fish Habitat.

In regards to Section 2.1.7 of the PPS, timing and avoidance mitigations are proposed in the unlikely event that SAR are present in the proposed new parcel.

With reference to section 2.1.8 of the PPS, we do not anticipate any direct negative or unalterable impacts to the Natural Heritage feature on-site or its ecological functions as the vegetation on site is low quality and for reasons noted in this report.

Additionally, Marten Klassen has reached out to the MECP Species at Risk department regarding the proposed application and was informed they have no concerns with the proposed severance contravening the Endangered Species Act (ESA) 2007. See Appendix C for MECP email correspondence.

### Municipal Considerations

The proposed development conforms with the Norfolk County Official Plan 2020.

In reference to the OP, which outlines the requirements for an EIS, this report is consistent with these requirements (See Appendix B), as demonstrated below:

- a) a site description, description of the application, SEIS study boundaries are provided in Section 1.1.
- b) April floral inventory is discussed in Section 3.2 and attached as Appendix D. Faunal habitat is discussed in Section 3.3.
- c) ELC classification is provided in Section 3.2
- d) Natural heritage features are initially outlined in Section 1, and those present (Significant Woodland) are described in Section 3.
- e) Significant Wildlife habitat is discussed in Section 3.3
- f&g) impacts and associated mitigation are discussed in Section 4
- h) Conclusions are provided in Section 5.

### Conservation Authority Considerations

There are no Natural Hazard lands, wetlands, or watercourses on or within 30 m of the proposed severance that would require LPRCA review and approval.

## **5.2 Conclusions**

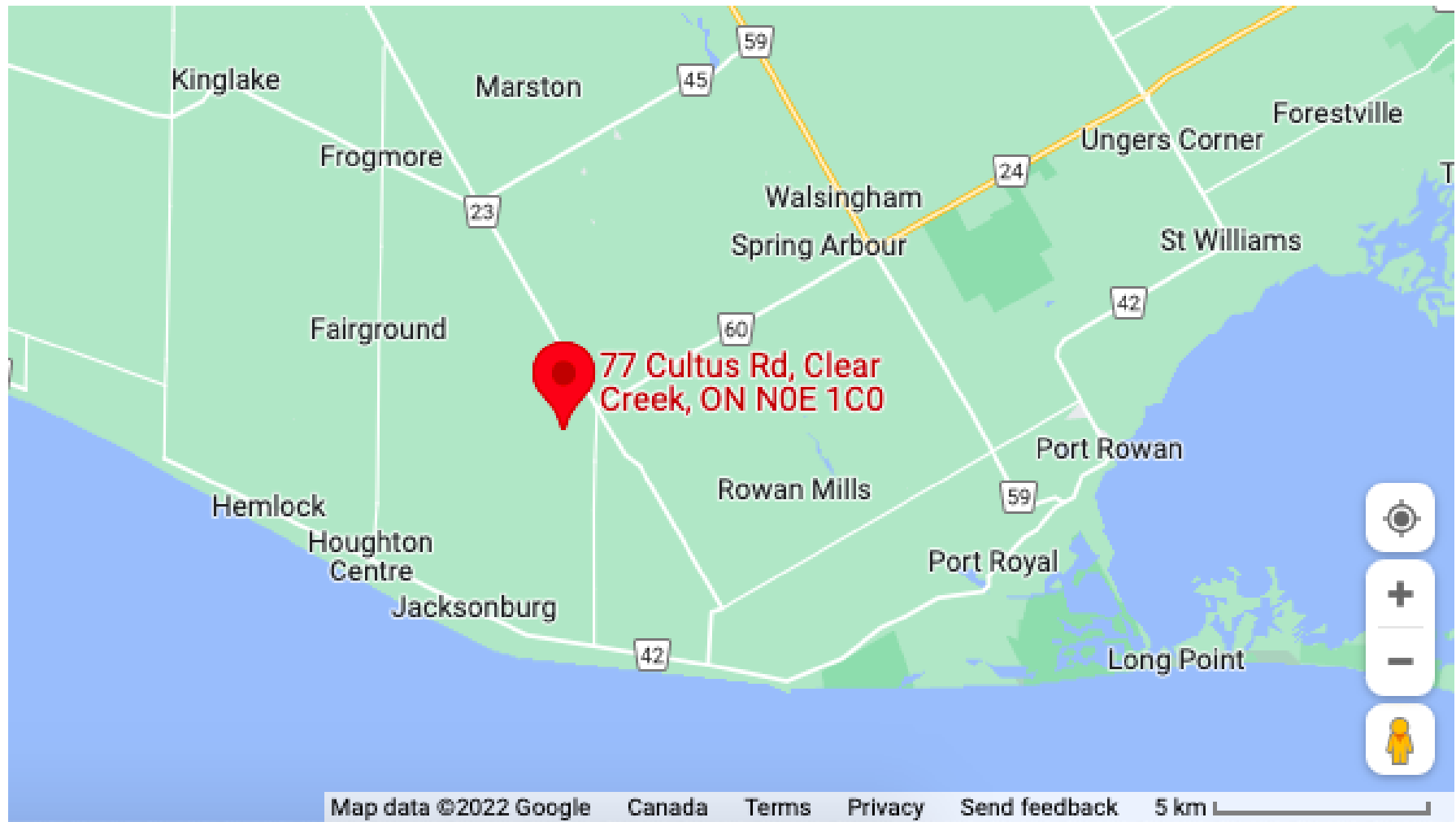
As previously noted, this EIS is triggered by municipal requirements related to the proposed severance occurring on or adjacent to Natural Heritage Areas, indicated on the Norfolk County Official Plan Schedule "C-6". The severance proposes no site alteration or construction. Logically, there are no potential direct, indirect or cumulative impacts to be addressed, given that no site alteration or construction is proposed as part of the severance. Similarly, it is easy to conclude that no adverse, nor unalterable impacts on Natural Heritage features would occur as part of the proposed severance.

However, we have been informed that a single-family residential home is the proposed land use.

For the reasons outlined in the data presented within this report and the resultant analysis, it is our opinion that there are no negative or adverse direct impacts, incidental impacts, or cumulative effects caused by the proposed development. Consequently, given the disturbed nature of the site, there is no need for additional information or studies relating to the Natural Heritage component of this application.

With respect to natural heritage considerations, it is the opinion of the writers that as long as the final severance and future development plans follow the recommended mitigation measures in this document, the proposed land use will be consistent with the Provincial Policy Statements 2020 as well as policies of the County and municipality.

Shae-Lynn Dehens  
Paige Vroom, MSc.  
(Aquatic)



VROOM + LEONARD

Biologists & Landscape Architects

Paige Vroom / MSc. Aquatic  
Mike Leonard / DALA

519-909-9872 / paigevroom@gmail.com  
519-671-5267 / mlla@isp.ca

Figure 1: General Site Location



VROOM + LEONARD

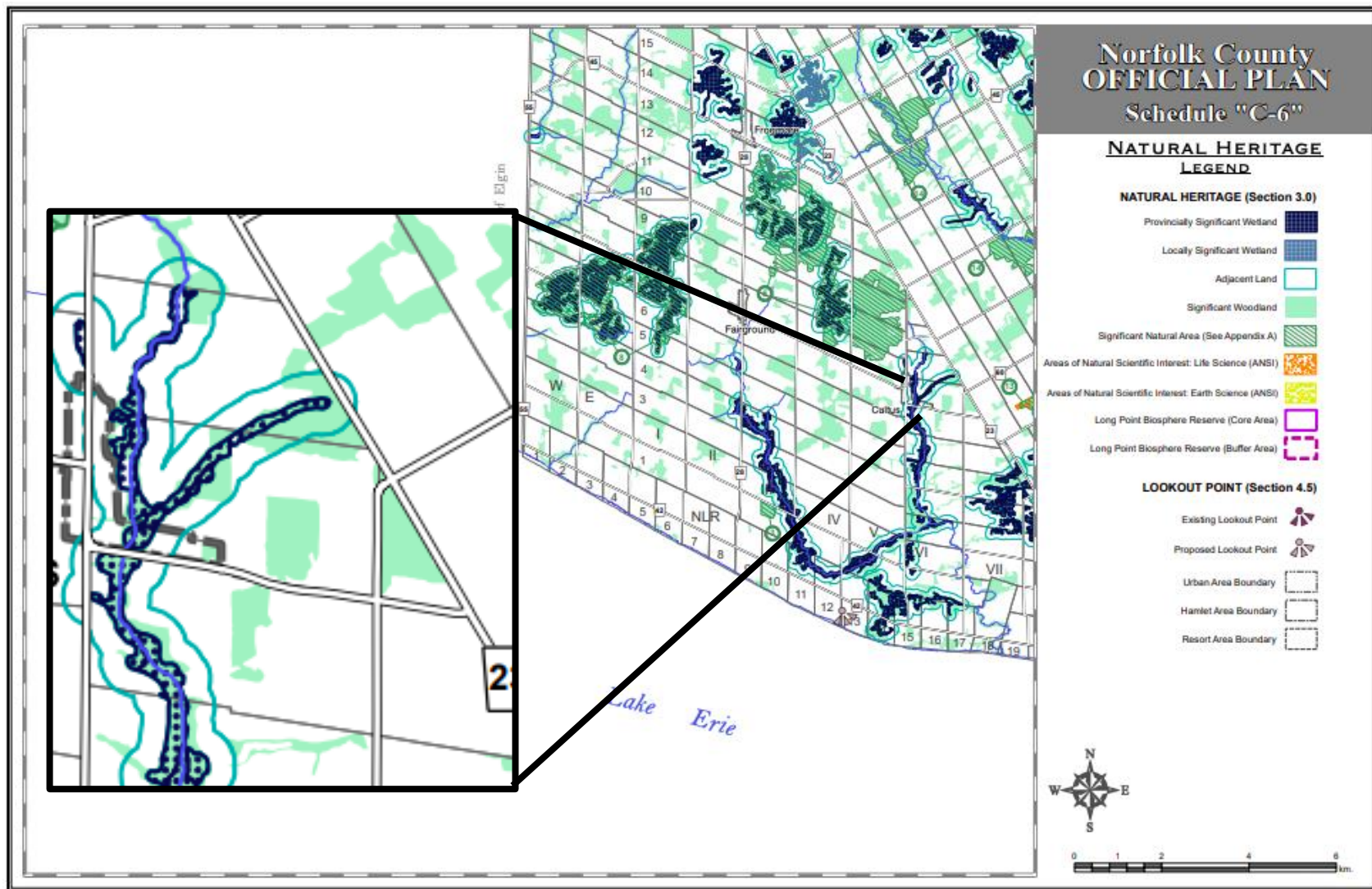
Biologists & Landscape Architects

Paige Vroom / MSc. Aquatic  
Mike Leonard / DALA

519-909-9872 / paigevroom@gmail.com  
519-671-5267 / mlla@isp.ca

Figure 2: Specific Site Location





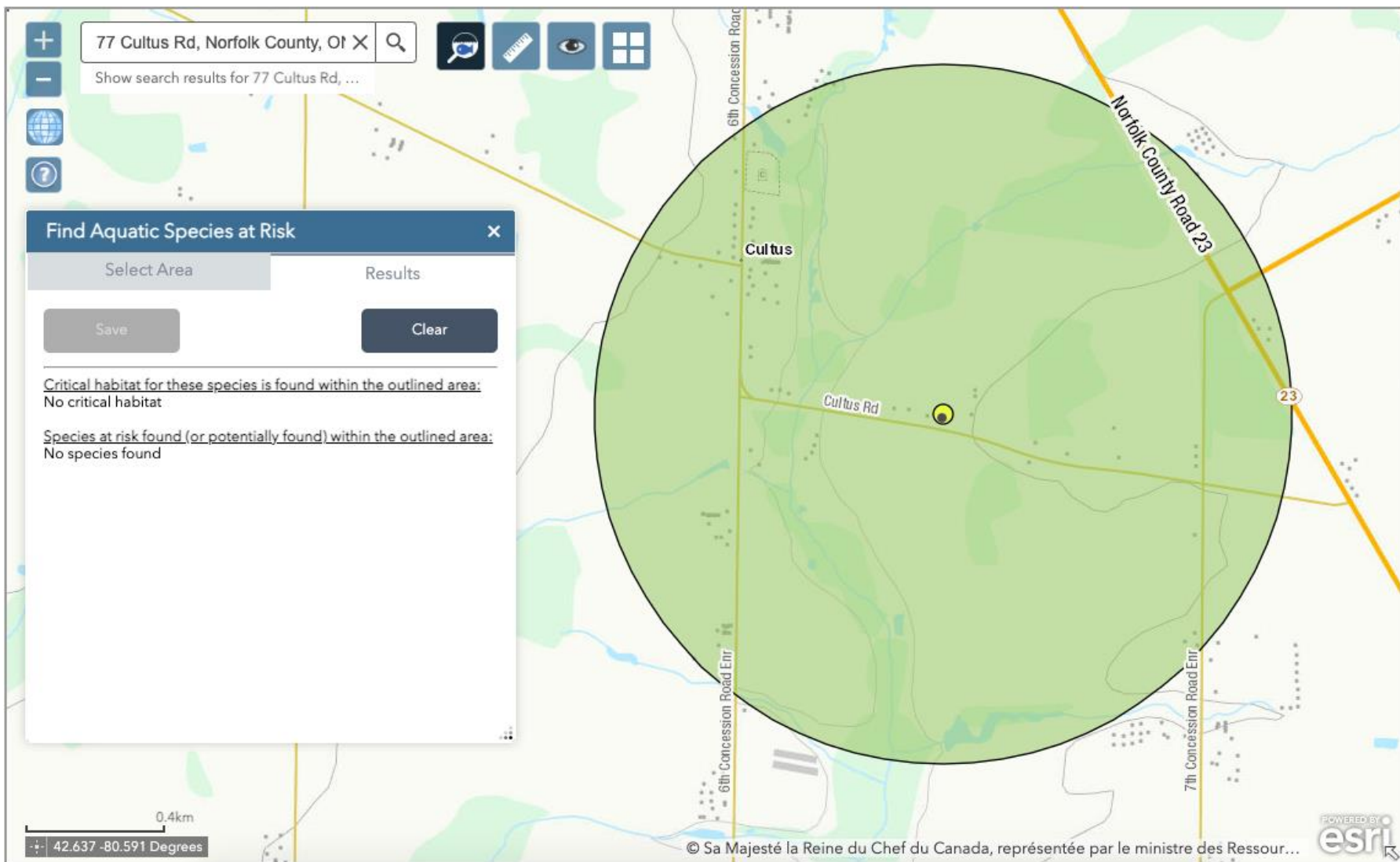
VROOM + LEONARD

Biologists & Landscape Architects

Paige Vroom / MSc. Aquatic  
Mike Leonard / OALA

519-909-9872 / paigevroom@gmail.com  
519-671-5267 / mlla@isp.ca

Figure 4: Norfolk County Schedule "C-6" Natural Heritage



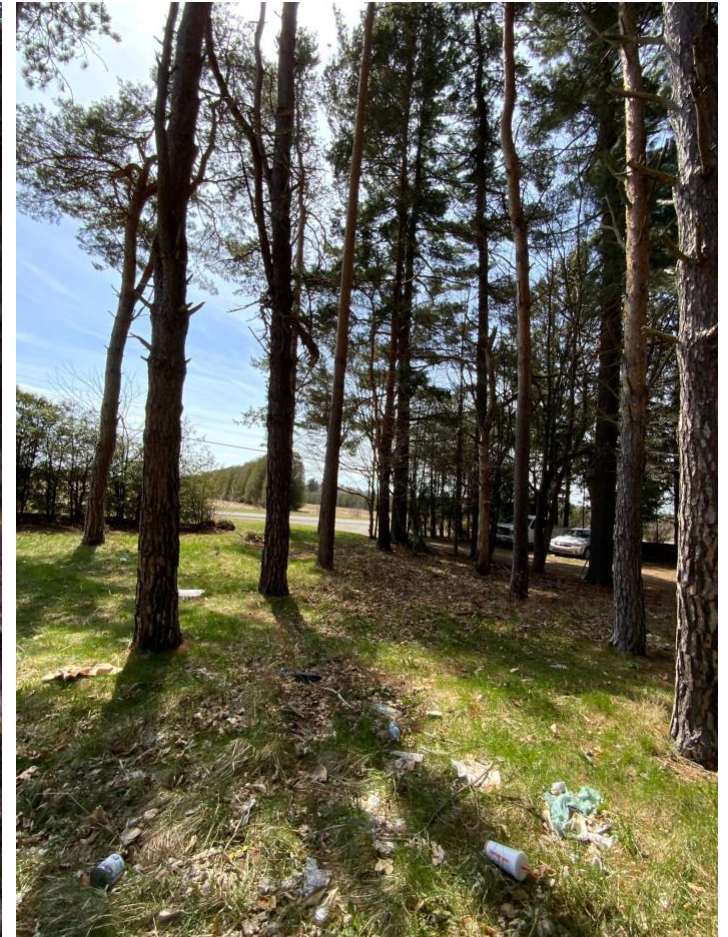
VROOM + LEONARD

Biologists & Landscape Architects

Paige Vroom / MSc. Aquatic  
Mike Leonard / OALA

519-909-9872 / paigevroom@gmail.com  
519-671-5267 / mlla@isp.ca

Figure 5: DFO Aquatic SAR Mapping



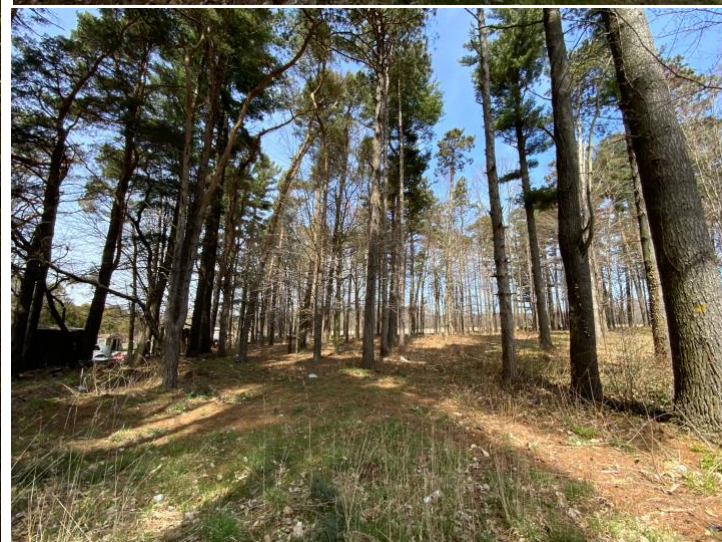
VROOM + LEONARD

Biologists & Landscape Architects

Paige Vroom / MSc. Aquatic  
Mike Leonard / DALA

519-909-9872 / paigevroom@gmail.com  
519-671-5267 / mlla@isp.ca

Figure 6: Site Photos



VROOM + LEONARD

Biologists & Landscape Architects

Paige Vroom / MSc. Aquatic  
Mike Leonard / DALA

519-909-9872 / paigevroom@gmail.com  
519-671-5267 / mlla@isp.ca

Figure 7: Site Photos

## Appendix A – Provincial Policy Statement

The *Provincial Policy Statement* (PPS) 2020, states that:

2.1.1 “Natural features and areas shall be protected for the long term.

2.1.2 The diversity and connectivity of natural features in an area, and the long-term *ecological function* and biodiversity of *natural heritage systems*, should be maintained, restored or, where possible, improved, recognizing linkages between and among *natural heritage features and areas, surface water features* and *ground water features*.

2.1.3 *Natural heritage systems* shall be identified in Ecoregions 6E & 7E1, recognizing that *natural heritage systems* will vary in size and form in *settlement areas, rural areas*, and *prime agricultural areas*.

2.1.4 *Development* and *site alteration* shall not be permitted in:

- a) *significant wetlands* in Ecoregions 5E, 6E and 7E1; and
- b) *significant coastal wetlands*.

2.1.5 *Development* and *site alteration* shall not be permitted in:

- a) *significant wetlands* in the Canadian Shield north of Ecoregions 5E, 6E and 7E1;
- b) *significant woodlands* in Ecoregions 6E and 7E (excluding islands in Lake Huron and the St. Mary’s River)<sup>1</sup>;
- c) *significant valleylands* in Ecoregions 6E and 7E (excluding islands in Lake Huron and the St. Mary’s River)<sup>1</sup>;
- d) *significant wildlife habitat*;
- e) *significant areas of natural and scientific interest*; and
- f) *coastal wetlands* in Ecoregions 5E, 6E and 7E1 that are not subject to policy 2.1.4(b)

unless it has been demonstrated that there will be no *negative impacts* on the natural features or their *ecological functions*.

2.1.6 *Development* and *site alteration* shall not be permitted in *fish habitat* except in accordance with *provincial and federal requirements*.

2.1.7 *Development* and *site alteration* shall not be permitted in *habitat of endangered species and threatened species*, except in accordance with *provincial and federal requirements*.

2.1.8 *Development* and *site alteration* shall not be permitted on *adjacent lands* to the *natural heritage features and areas* identified in policies 2.1.4, 2.1.5, and 2.1.6 unless the *ecological function* of the *adjacent lands* has been evaluated and it has been demonstrated that there will be no *negative impacts* on the natural features or on their *ecological function*.”

## **Appendix B: Municipal Considerations - Norfolk County Official Plan 2020**

"The following shall apply to circumstances where the policies of this Plan require the preparation of a Scoped Environmental Impact Study (SEIS) for minor planning applications.

The SEIS shall include:

- a) A Proposal Description in accordance with Section 9.7.1 (Environmental Impact Study), including a description of the study area, the reasoning behind the choice of study area to assess the proposed development or site alteration; the choice of Natural Heritage Features and functions to be examined; and, the choice of seasons and times of year to conduct the biophysical inventory;
- b) A Biophysical Inventory of the subject land, and potentially affected adjacent lands, in accordance with Section 9.7.1 (Environmental Impact Study);
- c) A classification of the subject land, and affected adjacent lands, using the Ministry of Natural Resources and Forestry Ecological Land Classification for Southern Ontario, in accordance with Section 9.7.1 (Environmental Impact Study);
- d) A classification and evaluation of unevaluated wetlands on the subject land, and affected adjacent lands, using the Ministry of Natural Resources and Forestry Ontario Wetland Evaluation System for Southern Ontario, in accordance with Section 9.7.1;
- e) An assessment of the significance of the natural heritage features and functions on the subject land, based on criteria outlined in the current natural areas inventory for the County, and the Ontario Ministry of Natural Resources and Forestry Significant Wildlife Habitat Technical Guide;
- f) An assessment of the impacts of the proposed undertaking, in accordance with Section 9.7.1 (Environmental Impact Study) and Section 11.5.3 c) and (e), including the identification and evaluation of:
  - i) on-site effects (e.g., elimination of habitat);
  - ii) off-site effects (e.g., sediment transported downstream);
  - iii) short-term and long-term effects; iv) the hydrological function of the wetland; and
  - v) effects on the use of natural heritage features, functions, or areas by people (e.g., recreational or educational uses);
- g) The identification and evaluation of impact avoidance, enhancement and mitigation measures, in accordance with Section 9.7.1 (Environmental Impact Study); and,
- h) Recommendations and conclusions, in accordance with Section 9.7.1 (Environmental Impact Study).

## Appendix C: MECP Correspondance

From: **Species at Risk (MECP)** <[SAROntario@ontario.ca](mailto:SAROntario@ontario.ca)>  
Date: Tue., Feb. 1, 2022, 4:57 p.m.  
Subject: RE: 77 Cultus Road  
To: Marten Klassen <[martenklassen21@gmail.com](mailto:martenklassen21@gmail.com)>

Hello Marten,

RE: Lot Severance – 77 Cultus Road, Clear Creek, Norfolk County and the *Endangered Species Act, 2007*

There are no requirements under the *Endangered Species Act, 2007* (ESA) to undergo a species at risk site assessment for lot severances, passing bylaws or land sales.

The ESA prohibits activities such as killing, harming, harassing and capturing species at risk (listed under the Act). The ESA also prohibits damaging or destroying species' habitat. An authorization or permit under the ESA is required if an activity that is to be undertaken is likely to impact a species at risk and/or its habitat.

Lot severances and zoning changes by themselves and in the absence of any additional development proposals are administrative; these activities on their own do not contravene the ESA. **Specifically, to contravene the ESA, an activity must have the effect of killing, harming or harassing individuals of a species at risk, or damaging or destroying their habitat. The simple act of severing a lot, passing a bylaw or other similar administrative activities do not result in any of these impacts.**

**If activities subsequent to a severance or bylaw or other administrative activity (for example, development on a lot) that could impact species at risk or their habitat are planned, the person/landowner undertaking those activities would need to determine if an ESA authorization is required before the activities are undertaken.** Please visit "How to avoid authorization" and "Permit types" (<https://www.ontario.ca/page/how-get-endangered-species-act-permit-or-authorization>) for more information. A person carrying out an activity may also wish to consult the Act and seek legal advice to understand its legal obligations.

It may also be worth noting that when reviewing whether an activity could impact species at risk, Species at Risk Branch (SARB) needs specific details on the species, their habitat, the proposed activity, where the activity is happening, when it is happening, how much area will be developed and so on. The person carrying out the activity may even choose to build in such a manner that impacts to species at risk and their habitat will be avoided but we cannot know this until we see the details as proposed by the individual. Any review of potential development for ESA compliance should be done before the time of development. Such an assessment, if performed at this stage, may not be relevant 5, 10, 20 years after it is completed as species may move to other areas, their protection status may change, or new species may be found on the property.

Based on the information you provided (i.e. that you plan to complete a land severance and sell the new building lot for the new landowner to undertake the development), this email should be sufficient to meet Norfolk County's request that you consult with Species at Risk Branch. If there are concerns with this, please direct the County to contact SARB directly at [SAROntario@Ontario.ca](mailto:SAROntario@Ontario.ca).

Regards,

**Kathryn Markham**

Management Biologist  
Permissions and Compliance Section, Species at Risk Branch  
Ministry of the Environment, Conservation and Parks

## Appendix D: Floral Inventory

Paul O'Hara  
Blue Oak Native Landscapes  
113 Locke Street North, Hamilton Ontario L8R  
3A7  
(905) 540-9963  
[blueoak@sympatico.ca](mailto:blueoak@sympatico.ca)  
[www.blueoak.ca](http://www.blueoak.ca)



2 May, 2022.

Paige Vroom  
Mike Leonard  
VROOM + LEONARD  
519.671.5267  
[www.leonardala.com](http://www.leonardala.com)  
[paigevroom@gmail.com](mailto:paigevroom@gmail.com)  
[mlla@isp.ca](mailto:mlla@isp.ca)

**RE: Botanical Inventory of the Subject Property at 77 Cultus Road in the hamlet of Clear Creek, Ontario.**

Dear Paige and Shae-Lynn,

This letter summarizes my botanical findings for the subject property at 77 Cultus Road in the hamlet of Clear Creek, Ontario. I made one visit to the site on April 22nd, 2022.

The subject property is a small square woodland and a residential dwelling bordering Cultus Road. The woodland on the subject property is a Naturalized Coniferous Plantation (FODM6). Many of the largest planted conifers are over 75 years old and can be seen on the 1954 aerial photo below.



1954 aerial photo. The subject property is the rectangular woodland in the centre.

The large planted conifers on site include White Pine (*Pinus strobus*), Red Pine (*Pinus resinosa*), Norway Spruce (*Picea abies*), Blue Spruce (*Picea pungens*) and White Cedar (*Thuja occidentalis*). Some of the White Pine are quite tall (~25m) and may be over a century old. Other suspected planted trees include one Tuliptree and one Bitternut Hickory (*Carya cordiformis*) on the east property boundary, a White Birch (*Betula papyrifera*) near the residential building, and a Norway Maple (*Acer platanoides*).

Naturally occurring hardwood species include Beech (*Fagus grandifolia*), Red Oak (*Quercus rubra*), Sugar Maple (*Acer saccharum*), Cottonwood (*Populus deltoides*), Black Cherry (*Prunus serotina*), Red Maple (*Acer rubrum*), Sassafras (*Sassafras albidum*), Basswood (*Tilia americana*), White Ash (*Fraxinus americana*), Black Walnut (*Juglans nigra*) and White Elm (*Ulmus americana*). The non-native White Mulberry (*Morus alba*) and Black Locust (*Robinia pseudoacacia*) were also present on site.

Small planted small trees, shrubs and vines include Rose of Sharon (*Hibiscus syriacus*), Crab Apple (*Malus* sp.), Japanese Yew (*Taxus x media*), Spindle tree (*Euonymus alatus*), Rhododendron (*Rhododendron* sp.) and English Ivy (*Hedera helix*).

Naturally occurring native small trees, shrubs and vines on the subject property include Manitoba Maple (*Acer negundo*), Staghorn Sumac (*Rhus typhina*), Elderberry (*Sambucus pubens*), Chokecherry (*Prunus virginiana*), Pagoda Dogwood (*Cornus alternifolia*), Spicebush (*Lindera benzoin*), Maple-leaved Viburnum (*Viburnum acerifolium*), American Hazel (*Corylus americana*), Grape (*Vitis riparia* or *V. aestivalis*), Brambles (*Rubus* spp.) and Poison Ivy (*Toxicodendron rydbergii*).

Herbaceous species include a mix of non-native and native plants that are common in disturbed forests and forest edges. Non-native herbaceous species include Garlic Mustard (*Alliaria petiolata*), Curled Dock (*Rumex crispus*), White Sweet Clover (*Melilotus alba*), Motherwort (*Leonurus cardiaca*), Dandelion (*Taraxacum officinale*), Day-lily (*Hemerocallis* sp.), Mullein (*Verbascum thapsus*) and St. John's Wort (*Hypericum perforatum*).

Native herbaceous species include Tall Goldenrod (*Solidago altissima*), Pokeweed (*Phytolacca americana*), Evening Primrose (*Oenothera biennis*), Enchanter's Nightshade (*Circaea canadensis*), Horseweed (*Erigeron canadensis*), Herb Robert (*Geranium robertianum*), woodland sedge (probably *Carex laxiflora* or *C. blanda*) and a wood fern (*Dryopteris* sp.).

#### **Species At Risk**

No Species At Risk (Endangered or Threatened Species) were found on or adjacent to the subject property.

#### **Provincially Rare Species**

No Provincially Rare Species were documented on or near the subject property.

#### **Provincially Rare Habitat Types**

No Provincially Rare Habitat Types were documented on the subject property.

#### **Conclusions**

It is highly unlikely that further field visits would reveal the presence of Provincially Rare or Species At Risk plants because of the high degree of disturbance in the ground layer on the subject property. That said, the large, mature native trees as well as the native shrubs, vines and perennials in this woodland provide vital habitat (food, cover, shelter, perching sites for raptors) for native insects, small mammals and birds, and every effort should be made not to damage or remove the native flora on the subject property.

Sincerely,

Paul O'Hara, Field Botanist  
Blue Oak Native Landscapes

## References

Bakowsky, W. 1996. Southern Ontario Vegetation Communities. Natural Heritage Information Centre. Peterborough, Ontario.

Lee, H.T., W.D. Bakowsky, J. Riley, J. Bowles, M. Puddister, P. Uhlig and S. McMurray. 1998. Ecological Land Classification for Southern Ontario: First Approximation and Its Application. Ontario Ministry of Natural Resources, Southcentral Science Section, Science Development and Transfer Branch, SCSS Field Guide FG-02.

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

## **APPENDIX E: SIGNIFICANT WILDLIFE HABITAT SCREENING**



# **Significant Wildlife Habitat Criteria Schedules For Ecoregion 7E**

**January, 2015**

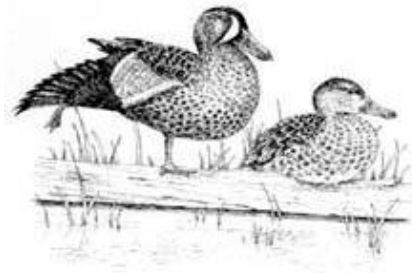
**Ontario Ministry of Natural Resources and Forestry**

Regional Operations Division:

Southern Region Resources Section:

300 Water Street, 4th Floor South

Peterborough, Ontario, Canada, K9J 8M5



## **Table of Contents – SWH Ecoregion 7E Criterion Schedule**

|                                                                                       |               |
|---------------------------------------------------------------------------------------|---------------|
| <b>IDENTIFICATION OF Significant Wildlife Habitat</b>                                 | <b>3</b>      |
| <b><i>1. 1 Seasonal Concentration Areas of Animals</i></b>                            | <b>3</b>      |
| Waterfowl Stopover and Staging Areas (Terrestrial)                                    | 3             |
| Waterfowl Stopover and Staging Areas (Aquatic)                                        | 4             |
| Shorebird Migratory Stopover Area                                                     | 5             |
| Raptor Wintering Area                                                                 | 6             |
| Bat Hibernacula                                                                       | 7             |
| Bat Maternity Colonies                                                                | 8             |
| Turtle Wintering Areas                                                                | 9             |
| Reptile Hibernaculum                                                                  | 10            |
| Colonially -Nesting Bird Breeding Habitat (Bank and Cliff)                            | 11            |
| Colonially -Nesting Bird Breeding Habitat Breeding Habitat (Tree/Shrubs)              | 12            |
| Colonially -Nesting Bird Breeding Habitat (Ground)                                    | 13            |
| Migratory Butterfly Stopover Areas                                                    | 13            |
| Landbird Migratory Stopover Areas                                                     | 15            |
| Deer Winter Congregation Areas                                                        | 16            |
| <br><b><i>1.2 Rare Vegetation Communities or Specialized Habitat for Wildlife</i></b> | <br><b>17</b> |
| <b><i>1.2.1 Rare Vegetation Communities</i></b>                                       |               |
| Cliffs and Talus Slopes                                                               | 18            |
| Sand Barren                                                                           | 18            |
| Alvar                                                                                 | 19            |
| Old Growth Forest                                                                     | 20            |
| Savannah                                                                              | 21            |
| Tallgrass Prairie                                                                     | 21            |
| Other Rare Vegetation Communities                                                     | 22            |
| <br><b><i>1.2.2 Specialized Habitat for Wildlife</i></b>                              |               |

|                                                                                                             |    |
|-------------------------------------------------------------------------------------------------------------|----|
| Waterfowl Nesting Area                                                                                      | 23 |
| Bald Eagle and Osprey Nesting, Foraging and Perching Habitat                                                | 23 |
| Woodland Raptor Nesting Habitat                                                                             | 24 |
| Turtle Nesting Areas                                                                                        | 25 |
| Seeps and Springs                                                                                           | 26 |
| Amphibian Breeding Habitat (Woodland)                                                                       | 27 |
| Amphibian Breeding Habitat (Wetlands)                                                                       | 28 |
| Woodland Area-Sensitive Bird Breeding Habitat                                                               | 29 |
| <br><b>1.3 Habitat for Species of Conservation Concern (Not including Endangered or Threatened Species)</b> |    |
| Marsh Bird Breeding Habitat                                                                                 | 30 |
| Open Country Bird Breeding Habitat                                                                          | 30 |
| Shrub/Early Successional Bird Breeding Habitat                                                              | 31 |
| Terrestrial Crayfish                                                                                        | 32 |
| Special Concern and Rare Wildlife Species                                                                   | 33 |
| <br><b>1.4 Animal Movement Corridors</b>                                                                    |    |
| Amphibian Movement Corridors                                                                                | 37 |
| <br><b>1.5 Exceptions for EcoRegion 7E</b>                                                                  |    |
| Eco-District                                                                                                | 39 |
| Bat Migratory Stopover Area                                                                                 |    |

## **SCHEDULE 7E: IDENTIFICATION OF Significant Wildlife Habitat**

This schedule is designed to provide the recommended criteria for identifying Significant Wildlife Habitat (SWH) within Ecoregion 7E<sup>ccxvi</sup>. Tables 1.1 through 1.4 within the Schedules provide guidance for SWH designation for the four categories of SWH outlined in the Significant Wildlife Habitat Technical Guide and its Appendices<sup>cxlviii, cxlix</sup>. Table 1.5 contains and provides descriptions for exceptions criteria for ecoregional SWH which will be identified at an ecodistrict scale<sup>ccxvi</sup>. Exceptions occur when criteria for a specific habitat are different within an ecodistrict compared to the remainder of an ecoregion or if a habitat only occurs within a restricted area of the ecoregion.

The schedules, including description of wildlife habitat, wildlife species, and the criteria provided for determining SWH, are based on science and expert knowledge. The ELC Ecosite codes are described using the Ecological Land Classification (ELC) for Southern Ontario<sup>lxxviii</sup>. The information within these schedules will require periodic updating to keep pace with changes to wildlife species status in the Species at Risk in Ontario (SARO) list, or as new scientific information pertaining to wildlife habitats becomes available. Therefore, MNRF will occasionally need to review and update these schedules and provide addenda. A reference document for all SWH is found after the schedules and includes citations for all ecoregional schedules. Each citation used to assist with the criteria for SWH will be indicated by a roman numeric symbol. Where no reference exists, MNRF expert opinion was used for determination of criteria, this symbol “(E)” represents when MNRF expert opinion was utilized to develop defining criteria.

### **Criteria For Significant Wildlife Habitat in Ecoregion 7E**

#### **1. 1 Seasonal Concentration Areas of Animals**

Seasonal concentration areas are areas where wildlife species occur annually in aggregations at certain times of the year. Such areas are sometimes highly concentrated with members of a given species, or several species, within relatively small areas. In spring and autumn, migratory wildlife species will concentrate where they can rest and feed. Other wildlife species require habitats where they can survive winter. Examples of seasonal concentration areas include deer wintering areas, breeding bird colonies and hibernation sites for reptiles, amphibians and some mammals<sup>cxlviii</sup>. Table 1.1 outlines what wildlife habitats and defining criteria that are considered for seasonal concentration areas within Ecoregion 7E.

**Table 1.1 Seasonal Concentration Areas of Animals.**

| Wildlife Habitat                                    | Wildlife Species                                   | CANDIDATE SWH                              |                                                                                              | CONFIRMED SWH                                                                      |
|-----------------------------------------------------|----------------------------------------------------|--------------------------------------------|----------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|
|                                                     |                                                    | ELC Ecosite Codes                          | Habitat Criteria and Information Sources                                                     | Defining Criteria                                                                  |
| <b>Waterfowl<br/>Stopover and<br/>Staging Areas</b> | American Black Duck<br>Northern Pintail<br>Gadwall | <b>CUM1<br/>CUT1</b><br>- Plus evidence of | Fields with sheet water during Spring (mid-March to May).<br>• Fields flooding during spring | Studies carried out and verified presence of an annual concentration of any listed |

| Wildlife Habitat                                                                                                               | Wildlife Species                                                                                        | CANDIDATE SWH                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | CONFIRMED SWH                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|--------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                                                                |                                                                                                         | ELC Ecosite Codes                                                                                                                                                                                                                                   | Habitat Criteria and Information Sources                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Defining Criteria                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <p><b>(Terrestrial)</b></p> <p><u><b>Rationale:</b></u><br/>Habitat important to migrating waterfowl.</p> <p>→ Not present</p> | <p>Blue-winged Teal<br/>Green-winged Teal<br/>American Wigeon<br/>Northern Shoveler<br/>Tundra Swan</p> | <p>annual spring flooding from melt water or run-off within these Ecosites.</p> <p>- Fields with seasonal flooding and waste grains in the Long Point, Rondeau, Lk. St. Clair, Grand Bend and Pt. Pelee areas may be important to Tundra Swans.</p> | <p>melt and run-off provide important invertebrate foraging habitat for migrating waterfowl.</p> <ul style="list-style-type: none"> <li>Agricultural fields with waste grains are commonly used by waterfowl, these are not considered SWH unless they have spring sheet water available <sup>cxlviii</sup>.</li> </ul> <p><u>Information Sources</u></p> <ul style="list-style-type: none"> <li>Anecdotal information from the landowner, adjacent landowners or local naturalist clubs may be good information in determining occurrence.</li> <li>Reports and other information available from Conservation Authorities</li> <li>Sites documented through waterfowl planning processes (eg. EHJV implementation plan)</li> <li>Field Naturalist Clubs</li> <li>Ducks Unlimited Canada</li> <li>Natural Heritage Information Centre (NHIC) Waterfowl Concentration Area</li> </ul> | <p>species, evaluation methods to follow "Bird and Bird Habitats: Guidelines for Wind Power Projects"<sup>ccxi</sup></p> <ul style="list-style-type: none"> <li>Any mixed species aggregations of 100<sup>®</sup> or more individuals required.</li> <li>The flooded field ecosite habitat plus a 100-300m radius, dependant on local site conditions and adjacent land use is the significant wildlife habitat <sup>cxlviii</sup>.</li> <li>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).</li> <li>SWH MIST<sup>cxlix</sup> Index #7 provides development effects and mitigation measures.</li> </ul> |
| <p><b>Waterfowl Stopover and Staging Areas (Aquatic)</b></p>                                                                   | <p>Canada Goose<br/>Cackling Goose<br/>Snow Goose<br/>American Black Duck<br/>Northern Pintail</p>      | <p>MAS1<br/>MAS2<br/>MAS3<br/>SAS1<br/>SAM1</p>                                                                                                                                                                                                     | <ul style="list-style-type: none"> <li>Ponds, marshes, lakes, bays, coastal inlets, and watercourses used during migration. Sewage treatment ponds and storm water</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | <p>Studies carried out and verified presence of:</p> <ul style="list-style-type: none"> <li>Aggregations of 100<sup>®</sup> or more of listed species for 7 days<sup>®</sup>, results in &gt; 700</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |

| Wildlife Habitat                                                                                                                                                                                                                        | Wildlife Species                                                                                                                                                                                                                                                                                                                                                                                                      | CANDIDATE SWH                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | CONFIRMED SWH                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                       | ELC Ecosite Codes                                                          | Habitat Criteria and Information Sources                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Defining Criteria                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <p><b>Rationale:</b><br/>Important for local and migrant waterfowl populations during the spring or fall migration or both periods combined. Sites identified are usually only one of a few in the eco-district.</p> <p>Not present</p> | <p>Northern Shoveler<br/>American Wigeon<br/>Gadwall<br/>Green-winged Teal<br/>Blue-winged Teal<br/>Hooded Merganser<br/>Common Merganser<br/>Lesser Scaup<br/>Greater Scaup<br/>Long-tailed Duck<br/>Surf Scoter<br/>White-winged Scoter<br/>Black Scoter<br/>Ring-necked duck<br/>Common Goldeneye<br/>Bufflehead<br/>Redhead<br/>Ruddy Duck<br/>Red-breasted Merganser<br/>Brant<br/>Canvasback<br/>Ruddy Duck</p> | <p>SAF1<br/>SWD1<br/>SWD2<br/>SWD3<br/>SWD4<br/>SWD5<br/>SWD6<br/>SWD7</p> | <p>ponds do not qualify as a SWH, however a reservoir managed as a large wetland or pond/lake does qualify.</p> <ul style="list-style-type: none"> <li>These habitats have an abundant food supply (mostly aquatic invertebrates and vegetation in shallow water)</li> </ul> <p><u>Information Sources</u></p> <ul style="list-style-type: none"> <li>Environment Canada</li> <li>Naturalist clubs often are aware of staging/stopover areas.</li> <li>OMNRF Wetland Evaluations indicate presence of locally and regionally significant waterfowl staging.</li> <li>Sites documented through waterfowl planning processes (eg. EHJV implementation plan)</li> <li>Ducks Unlimited projects</li> <li>Element occurrence specification by Nature Serve:<br/><a href="http://www.natureserve.org">http://www.natureserve.org</a></li> <li>Natural Heritage Information Centre (NHIC) Waterfowl Concentration Area</li> </ul> | <p>waterfowl use days.</p> <ul style="list-style-type: none"> <li>Areas with annual staging of ruddy ducks, canvasbacks, and redheads are SWH <sup>cxlix</sup></li> <li>The combined area of the ELC ecosites and a 100m radius area is the SWH <sup>cxlviii</sup></li> <li>Wetland area and shorelines associated with sites identified within the SWHTG <sup>cxlviii</sup> Appendix K <sup>cxlix</sup> are significant wildlife habitat.</li> <li>Evaluation methods to follow "Bird and Bird Habitats: Guidelines for Wind Power Projects" <sup>ccxi</sup></li> <li>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).</li> <li>SWH MIST <sup>cxlix</sup> Index #7 provides development effects and mitigation measures.</li> </ul> |
| <p><b>Shorebird Migratory Stopover Area</b></p>                                                                                                                                                                                         | <p>Greater Yellowlegs<br/>Lesser Yellowlegs<br/>Marbled Godwit</p>                                                                                                                                                                                                                                                                                                                                                    | <p>BBO1<br/>BBO2<br/>BBS1</p>                                              | <ul style="list-style-type: none"> <li>Shorelines of lakes, rivers and wetlands, including beach areas, bars and</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | <p>Studies confirming:</p> <ul style="list-style-type: none"> <li>Presence of 3 or more of listed species and &gt; 1000<sup>®</sup></li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |

| Wildlife Habitat                                                                                                                                          | Wildlife Species                                                                                                                                                                                                                                                                                                                                                                                       | CANDIDATE SWH                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | CONFIRMED SWH                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                        | ELC Ecosite Codes                                                                                     | Habitat Criteria and Information Sources                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Defining Criteria                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <p><b>Rationale:</b><br/>High quality shorebird stopover habitat is extremely rare and typically has a long history of use.</p> <p><i>Not present</i></p> | Hudsonian Godwit<br>Black-bellied Plover<br>American Golden-Plover<br>Semipalmated Plover<br>Solitary Sandpiper<br>Spotted Sandpiper<br>Semipalmated Sandpiper<br>Pectoral Sandpiper<br>White-rumped Sandpiper<br>Baird's Sandpiper<br>Least Sandpiper<br>Purple Sandpiper<br>Stilt Sandpiper<br>Short-billed Dowitcher<br>Red-necked Phalarope<br>Whimbrel<br>Ruddy Turnstone<br>Sanderling<br>Dunlin | BBS2<br>BBT1<br>BBT2<br>SDO1<br>SDS2<br>SDT1<br>MAM1<br>MAM2<br>MAM3<br>MAM4<br>MAM5                  | <p>seasonally flooded, muddy and un-vegetated shoreline habitats.</p> <ul style="list-style-type: none"> <li>Great Lakes coastal shorelines, including groynes and other forms of armour rock lakeshores, are extremely important for migratory shorebirds in May to mid-June and early July to October.</li> <li>Sewage treatment ponds and storm water ponds do not qualify as a SWH.</li> </ul> <p><u>Information Sources</u></p> <ul style="list-style-type: none"> <li>Western hemisphere shorebird reserve network.</li> <li>Canadian Wildlife Service (CWS) Ontario Shorebird Survey.</li> <li>Bird Studies Canada</li> <li>Ontario Nature</li> <li>Local birders and naturalist clubs</li> <li>Natural Heritage Information Centre (NHIC) Shorebird Migratory Concentration Area</li> </ul> | <p>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)</p> <ul style="list-style-type: none"> <li>Whimbrel stop briefly (&lt;24hrs) during spring migration, any site with &gt;100<sup>cxlviii</sup> Whimbrel used for 3 years or more is significant.</li> <li>The area of significant shorebird habitat includes the mapped ELC shoreline ecosites plus a 100m radius area<sup>cxlviii</sup></li> <li>Evaluation methods to follow "Bird and Bird Habitats: Guidelines for Wind Power Projects"<sup>ccxi</sup></li> <li>SWH MIST<sup>cxlix</sup> Index #8 provides development effects and mitigation measures.</li> </ul> |
| <p><b>Raptor Wintering Area</b></p> <p><b>Rationale:</b><br/>Sites used by multiple species,</p>                                                          | Rough-legged Hawk<br>Red-tailed Hawk<br>Northern Harrier<br>American Kestrel<br>Snowy Owl                                                                                                                                                                                                                                                                                                              | <p><u>Hawks/Owls:</u><br/>Combination of ELC Community Series; need to have present one Community</p> | <ul style="list-style-type: none"> <li>The habitat provides a combination of fields and woodlands that provide roosting, foraging and resting habitats for wintering raptors.</li> <li>Raptor wintering (hawk/owl)</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | <p>Studies confirm the use of these habitats by:</p> <ul style="list-style-type: none"> <li>One or more Short-eared Owls or; One of more Bald Eagles or; At least 10 individuals and two of the</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |

| Wildlife Habitat                                                                                                                                                 | Wildlife Species                                                  | CANDIDATE SWH                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | CONFIRMED SWH                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                                                                                                  |                                                                   | ELC Ecosite Codes                                                                                                                                                                                                                                                                                                      | Habitat Criteria and Information Sources                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Defining Criteria                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <p>a high number of individuals and used annually are most significant</p> <p>- does not meet size requirement</p> <p>- no upland habitat</p> <p>Not present</p> | <p><b>Special Concern:</b><br/>Short-eared Owl<br/>Bald Eagle</p> | <p>Series from each land class;<br/>Forest:<br/><del>FOD, FOM, FOC.</del></p> <p>Upland:<br/><del>CUM; CUT; CUS; CUW.</del></p> <p><u>Bald Eagle:</u><br/>Forest community Series: FOD, FOM, FOC, SWD, SWM or SWC on shoreline areas adjacent to large rivers or adjacent to lakes with open water (hunting area).</p> | <p>sites need to be &gt; 20 ha <sup>cxlviii</sup> with a combination of forest and upland. <sup>xvi, xvii, xviii, xix, xx, xxi</sup>.</p> <ul style="list-style-type: none"> <li>Least disturbed sites, idle/fallow or lightly grazed field/meadow (&gt;15ha) with adjacent woodlands <sup>cxlix</sup></li> <li>Field area of the habitat is to be wind swept with limited snow depth or accumulation.</li> <li>Eagle sites have open water and large trees and snags available for roosting <sup>cxlix</sup></li> </ul> <p><u>Information Sources:</u></p> <ul style="list-style-type: none"> <li>OMNRF Ecologist or Biologist</li> <li>Naturalist clubs</li> <li>Natural Heritage Information Centre (NHIC) Raptor Winter Concentration Area</li> <li>Data from Bird Studies Canada</li> <li>Results of Christmas Bird Counts</li> <li>Reports and other information available from Conservation Authorities.</li> </ul> | <p>listed hawk/owl species<sup>®</sup></p> <ul style="list-style-type: none"> <li>To be significant a site must be used regularly (3 in 5 years) <sup>cxlix</sup> for a minimum of 20 days by the above number of birds<sup>®</sup>.</li> <li>The habitat area for an Eagle winter site is the shoreline forest ecosites directly adjacent to the prime hunting area<sup>®</sup></li> <li>Evaluation methods to follow "Bird and Bird Habitats: Guidelines for Wind Power Projects"<sup>ccxi</sup></li> <li>SWH MIST<sup>cxlix</sup> Index #10 and #11 provides development effects and mitigation measures.</li> </ul> |
| <p><del>Bat Hibernacula</del></p> <p><b>Rationale:</b><br/>Bat hibernacula are rare habitats</p>                                                                 | <p>Big Brown Bat<br/>Tri-coloured Bat</p>                         | <p>Bat Hibernacula may be found in these ecosites:<br/><del>CCR1<br/>CCR2<br/>CCA1</del></p>                                                                                                                                                                                                                           | <p><del>Hibernacula may be found in caves, mine shafts, underground foundations and Karsts.</del></p> <p><del>Active mine sites should not be considered as SWH</del></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | <ul style="list-style-type: none"> <li>All sites with confirmed hibernating bats are SWH <sup>®</sup>.</li> <li>The area includes 200m radius around the entrance of the hibernaculum <sup>cxlviii, ccvii</sup>, <sup>®</sup> for most development</li> </ul>                                                                                                                                                                                                                                                                                                                                                           |

| Wildlife Habitat                                                                                                                                                                 | Wildlife Species                                                     | CANDIDATE SWH                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | CONFIRMED SWH                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                                                                                                                  |                                                                      | ELC Ecosite Codes                                                                                                                                         | Habitat Criteria and Information Sources                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Defining Criteria                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| in all Ontario landscapes.                                                                                                                                                       |                                                                      | CCA2<br>(Note: buildings are not considered to be SWH)                                                                                                    | <ul style="list-style-type: none"> <li>The locations of bat hibernacula are relatively poorly known.</li> </ul> <u>Information Sources</u> <ul style="list-style-type: none"> <li>OMNRF for possible locations and contact for local experts</li> <li>Natural Heritage Information Centre (NHIC) Bat Hibernaculum</li> <li>Ministry of Northern Development and Mines for location of mine shafts.</li> <li>Clubs that explore caves (eg. Sierra Club)</li> <li>University Biology Departments with bat experts.</li> </ul>                                        | <p>types and 1000m for wind farms<sup>CCV</sup>.</p> <ul style="list-style-type: none"> <li>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”<sup>CCV</sup>.</li> <li>SWH MIST<sup>cxlix</sup> Index #1 provides development effects and mitigation measures.</li> </ul>                                                                                                                            |
| <p><b>Bat</b></p> <p><b>Maternity Colonies</b></p> <p><u>Rationale:</u><br/>Known locations of forested bat maternity colonies are extremely rare in all Ontario landscapes.</p> | <p>Big Brown Bat<br/>Silver-haired Bat</p> <p>Not likely present</p> | <p>Maternity colonies considered SWH are found in forested Ecosites.</p> <p>All ELC Ecosites in ELC Community Series:<br/>FOD<br/>FOM<br/>SWD<br/>SWM</p> | <ul style="list-style-type: none"> <li>Maternity colonies can be found in tree cavities, vegetation and often in buildings<sup>xxii, xxv, xxvi, xxvii, xxxi</sup> (buildings are not considered to be SWH).</li> <li>Maternity roosts are not found in caves and mines in Ontario<sup>xxii</sup>.</li> <li>Maternity colonies located in Mature deciduous or mixed forest stands<sup>ccix, ccx, ccv</sup> with &gt;10/ha large diameter (&gt;25cm dbh) wildlife trees<sup>ccvii</sup></li> <li>Female Bats prefer wildlife tree (snags) in early stages</li> </ul> | <ul style="list-style-type: none"> <li>Maternity Colonies with confirmed use by; <ul style="list-style-type: none"> <li>&gt;10 Big Brown Bats<sup>®</sup></li> <li>&gt;5 Adult Female Silver-haired Bats<sup>®</sup></li> </ul> </li> <li>The area of the habitat includes the entire woodland or a forest stand ELC Ecosite or an Ecoelement containing the maternity colonies<sup>®</sup>.</li> <li>Evaluation methods for maternity colonies should be conducted following methods outlined in the “Bats and Bat Habitats: Guidelines for</li> </ul> |

| Wildlife Habitat                                                    | Wildlife Species                                                                                                | CANDIDATE SWH                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | CONFIRMED SWH                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|---------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                     |                                                                                                                 | ELC Ecosite Codes                                                                                                                                                                                                                                                | Habitat Criteria and Information Sources                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Defining Criteria                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <p>- Follow tree-cutting timing mitigations found in Section 4.</p> |                                                                                                                 |                                                                                                                                                                                                                                                                  | <p>of decay, class 1-3<sup>ccxiv</sup> or class 1 or 2<sup>ccxii</sup>.</p> <ul style="list-style-type: none"> <li>Silver-haired Bats prefer older mixed or deciduous forest and form maternity colonies in tree cavities and small hollows. Older forest areas with at least 21 snags/ha are preferred<sup>ccx, lxiv</sup></li> </ul> <p><u>Information Sources</u></p> <ul style="list-style-type: none"> <li>OMNRF for possible locations and contact for local experts</li> <li>University Biology Departments with bat experts.</li> </ul> | <p>Wind Power Projects<sup>ccv</sup>.</p> <ul style="list-style-type: none"> <li>SWH MIST<sup>cxlix</sup> Index #12 provides development effects and mitigation measures.</li> </ul>                                                                                                                                                                                                                                                                                                                                                   |
|                                                                     | <p>Midland Painted Turtle</p> <p><b><u>Special Concern:</u></b><br/>Northern Map Turtle<br/>Snapping Turtle</p> | <p>Snapping and Midland Painted Turtles; ELC Community Classes; SW, MA, OA and SA, ELC Community Series; FEO and BOO</p> <p>Northern Map Turtle; Open Water areas such as deeper rivers or streams and lakes with current can also be used as over-wintering</p> | <p>For most turtles, wintering areas are in the same general area as their core habitat. Water has to be deep enough not to freeze and have soft mud substrates</p> <ul style="list-style-type: none"> <li>Over-wintering sites are permanent water bodies, large wetlands, and bogs or fens with adequate Dissolved Oxygen<sup>cix, cx, cxi, cxii</sup></li> <li>Man-made ponds such as sewage lagoons or storm water ponds should not be considered SWH.</li> </ul> <p><u>Information Sources</u></p>                                         | <ul style="list-style-type: none"> <li>Presence of 5 over-wintering Midland Painted Turtles is significant<sup>Ⓔ</sup>.</li> <li>One or more Northern Map Turtle or Snapping Turtle over-wintering within a wetland is significant<sup>Ⓔ</sup>.</li> <li>The mapped ELC ecosite area with the over wintering turtles is the SWH. If the hibernation site is within a stream or river, the deep-water pool where the turtles are over wintering is the SWH.</li> <li>Over wintering areas may be identified by searching for</li> </ul> |

**Turtle Wintering Areas**

**Rationale:**

Generally sites are the only known sites in the area. Sites with the highest number of individuals are most significant.

| Wildlife Habitat                                                                                                                                                                                                                                                                                | Wildlife Species                                                                                                                                                                                                                                        | CANDIDATE SWH                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | CONFIRMED SWH                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                         | ELC Ecosite Codes                                                                                                                                                                                                                                                                               | Habitat Criteria and Information Sources                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Defining Criteria                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <p>- No water bodies present</p> <p>- Not present</p>                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                         | habitat.                                                                                                                                                                                                                                                                                        | <ul style="list-style-type: none"> <li>EIS studies carried out by Conservation Authorities.</li> <li>Field Naturalists Clubs</li> <li>OMNRF Ecologist or Biologist</li> <li>Natural Heritage Information Centre (NHIC)</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                          | <p>congregations (Basking Areas) of turtles on warm, sunny days during the fall (Sept. – Oct.) or spring (Mar. – May)<sup>cvii</sup>. Congregation of turtles is more common where wintering areas are limited and therefore significant<sup>cix, cx, cxi, cxii</sup>.</p> <ul style="list-style-type: none"> <li>SWH MIST<sup>cxlix</sup> Index #28 provides development effects and mitigation measures for turtle wintering habitat.</li> </ul>                                                                                                                                                                                                                 |
| <p><b>Reptile</b></p> <p><b>Hibernaculum</b></p> <p><b>Rationale:</b><br/>Generally sites are the only known sites in the area. Sites with the highest number of individuals are most significant.</p> <p>- No evidence found on site</p> <p>- follow timing mitigations found in Section 4</p> | <p><b>Snakes:</b><br/>Eastern Gartersnake<br/>Northern Watersnake<br/>Northern Red-bellied Snake<br/>Northern Brownsnake<br/>Smooth Green Snake<br/>Northern Ring-necked Snake</p> <p><b>Special Concern:</b><br/>Milksnake<br/>Eastern Ribbonsnake</p> | <p>For all snakes, habitat may be found in any ecosite other than very wet ones. Talus, Rock Barren, Crevice, Cave, and Alvar sites may be directly related to these habitats.</p> <p>Observations or congregations of snakes on sunny warm days in the spring or fall is a good indicator.</p> | <ul style="list-style-type: none"> <li>For snakes, hibernation takes place in sites located below frost lines in burrows, rock crevices and other natural or naturalized locations. The existence of features that go below frost line; such as rock piles or slopes, old stone fences, and abandoned crumbling foundations assist in identifying candidate SWH.</li> <li>Areas of broken and fissured rock are particularly valuable since they provide access to subterranean sites below the frost line<sup>xliv, l, li, lii, cxii</sup>.</li> <li>Wetlands can also be important over-wintering habitat in conifer or shrub swamps and swales, poor fens, or depressions in</li> </ul> | <p>Studies confirming:</p> <ul style="list-style-type: none"> <li>Presence of snake hibernacula used by a minimum of five individuals of a snake sp. <u>or</u>; individuals of two or more snake spp.</li> <li>Congregations of a minimum of five individuals of a snake sp. <u>or</u>; 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)<sup>Ⓔ</sup></li> <li><b>Note:</b> If there are Special Concern Species present, then site is SWH</li> <li><b>Note:</b> Sites for hibernation possess specific habitat parameters (e.g. temperature,</li> </ul> |

| Wildlife Habitat                                                                                                                                                                                                                 | Wildlife Species                                                                                                         | CANDIDATE SWH                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | CONFIRMED SWH                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                                                                                                                                                                  |                                                                                                                          | ELC Ecosite Codes                                                                                                                                                                                                              | Habitat Criteria and Information Sources                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Defining Criteria                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|                                                                                                                                                                                                                                  |                                                                                                                          |                                                                                                                                                                                                                                | bedrock terrain with sparse trees or shrubs with sphagnum moss or sedge hummock ground cover.<br><u>Information Sources</u> <ul style="list-style-type: none"> <li>In spring, local residents or landowners may have observed the emergence of snakes on their property (e.g. old dug wells).</li> <li>Reports and other information available from Conservation Authorities.</li> <li>Field Naturalist Clubs</li> <li>University herpetologists</li> <li>Natural Heritage Information Centre (NHIC)</li> </ul> | humidity, etc.) and consequently are used annually, often by many of the same individuals of a local population (i.e. strong hibernation site fidelity). Other critical life processes (e.g. mating) often take place in close proximity to hibernacula. The feature in which the hibernacula is located plus a 30 m radius area is the SWH <sup>®</sup> <ul style="list-style-type: none"> <li>SWH MIST<sup>cxlix</sup> Index #13 provides development effects and mitigation measures for snake hibernacula.</li> </ul>      |
| <b>Colonially - Nesting Bird Breeding Habitat (Bank and Cliff)</b><br><br><u>Rationale:</u><br>Historical use and number of nests in a colony make this habitat significant. An identified colony can be very important to local | Cliff Swallow<br>Northern Rough-winged Swallow (this species is not colonial but can be found in Cliff Swallow colonies) | Eroding banks, sandy hills, borrow pits, steep slopes, and sand piles Cliff faces, bridge abutments, silos, barns.<br><br>Habitat found in the following ecosites:<br>CUM1 CUT1<br>CUS1 BLO1<br>BLS1 BLT1<br>CLO1 CLS1<br>CLT1 | <ul style="list-style-type: none"> <li>Any site or areas with exposed soil banks, undisturbed or naturally eroding that is not a licensed/permitted aggregate area.</li> <li>Does not include man-made structures (bridges or buildings) or recently (2 years) disturbed soil areas, such as berms, embankments, soil or aggregate stockpiles.</li> <li>Does not include a licensed/permitted Mineral Aggregate Operation.</li> </ul> <u>Information Sources</u>                                                | Studies confirming: <ul style="list-style-type: none"> <li>Presence of 1 or more nesting sites with 8<sup>cxlix</sup> or more cliff swallow pairs and/or rough-winged swallow pairs during the breeding season.</li> <li>A colony identified as SWH will include a 50m radius habitat area from the peripheral nests<sup>ccvii</sup></li> <li>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</li> </ul> |

| Wildlife Habitat                                                                                                                                                                                                                                                                      | Wildlife Species                                                            | CANDIDATE SWH                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | CONFIRMED SWH                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|----------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                                                                                                                                                                                                                       |                                                                             | ELC Ecosite Codes                                                          | Habitat Criteria and Information Sources                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Defining Criteria                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| populations. All swallow population are declining in Ontario.                                                                                                                                                                                                                         |                                                                             |                                                                            | <ul style="list-style-type: none"> <li>• Reports and other information available from Conservation Authorities.</li> <li>• Ontario Breeding Bird Atlas</li> <li>• Bird Studies Canada; <i>NatureCounts</i><br/><a href="http://www.birdscanada.org/birdmon/">http://www.birdscanada.org/birdmon/</a></li> <li>• Field Naturalist Clubs.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Wind Power Projects <sup>ccxi</sup> <ul style="list-style-type: none"> <li>• SWH MIST<sup>cxlix</sup> Index #4 provides development effects and mitigation measures</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <p><i>Not present</i></p> <p><b>Colonially - Nesting Bird Breeding Habitat (Tree/Shrubs)</b></p> <p><b>Rationale:</b><br/>Large colonies are important to local bird population, typically sites are only known colony in area and are used annually.</p> <p><i>- Not present</i></p> | Great Blue Heron<br>Black-crowned Night-Heron<br>Great Egret<br>Green Heron | SWM2 SWM3<br>SWM5 SWM6<br>SWD1 SWD2<br>SWD3 SWD4<br>SWD5 SWD6<br>SWD7 FET1 | <ul style="list-style-type: none"> <li>• Nests in live or dead standing trees in wetlands, lakes, islands, and peninsulas. Shrubs and occasionally emergent vegetation may also be used.</li> <li>• Most nests in trees are 11 to 15 m from ground, near the top of the tree.</li> </ul> <p><u>Information Sources</u></p> <ul style="list-style-type: none"> <li>• Ontario Breeding Bird Atlas<sup>ccv</sup>, colonial nest records.</li> <li>• Ontario Heronry Inventory 1991 available from Bird Studies Canada or NHIC (OMNRF).</li> <li>• Natural Heritage Information Centre (NHIC) Mixed Wader Nesting Colony</li> <li>• Aerial photographs can help identify large heronries.</li> <li>• Reports and other information available from Conservation Authorities.</li> <li>• MNRF District Offices.</li> </ul> | Studies confirming: <ul style="list-style-type: none"> <li>• Presence of 2<sup>ⓔ</sup> or more active nests of Great Blue Heron or other listed species.</li> <li>• The habitat extends from the edge of the colony and a minimum 300m radius or extent of the Forest Ecosite containing the colony or any island &lt;15.0ha with a colony is the SWH<sup>cc, ccvii</sup></li> <li>• Confirmation of active heronries are to be achieved through site visits conducted during the nesting season (April to August) or by evidence such as the presence of fresh guano, dead young and/or eggshells</li> <li>• SWH MIST<sup>cxlix</sup> Index #5 provides development effects and mitigation measures.</li> </ul> |

| Wildlife Habitat                                                                                                                                                                                             | Wildlife Species                                                                                                                | CANDIDATE SWH                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | CONFIRMED SWH                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                                                                                                                                              |                                                                                                                                 | ELC Ecosite Codes                                                                                                                                                                                                                                                                           | Habitat Criteria and Information Sources                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Defining Criteria                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|                                                                                                                                                                                                              |                                                                                                                                 |                                                                                                                                                                                                                                                                                             | <ul style="list-style-type: none"> <li>Field Naturalist Clubs.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>Colonially - Nesting Bird Breeding Habitat (Ground)</b><br><br><b>Rationale:</b><br>Colonies are important to local bird population, typically sites are only known colony in area and are used annually. | Herring Gull<br>Great Black-backed Gull<br>Little Gull<br>Ring-billed Gull<br>Common Tern<br>Caspian Tern<br>Brewer's Blackbird | Any rocky island or peninsula (natural or artificial) within a lake or large river (two-lined on a 1:50,000 NTS map).<br><br>Close proximity to watercourses in open fields or pastures with scattered trees or shrubs (Brewer's Blackbird)<br><br>MAM1 – 6;<br>MAS1 – 3;<br>CUM CUT<br>CUS | <ul style="list-style-type: none"> <li>Nesting colonies of gulls and terns are on islands or peninsulas associated with open water or in marshy areas.</li> <li>Brewers Blackbird colonies are found loosely on the ground in or in low bushes in close proximity to streams and irrigation ditches within farmlands.</li> </ul> <b>Information Sources</b> <ul style="list-style-type: none"> <li>Ontario Breeding Bird Atlas, rare/colonial species records.</li> <li>Canadian Wildlife Service</li> <li>Reports and other information available from Conservation Authorities.</li> <li>Natural Heritage Information Centre (NHIC) Colonial Waterbird Nesting Area</li> <li>MNRF District Offices.</li> <li>Field Naturalist Clubs.</li> </ul> | Studies confirming: <ul style="list-style-type: none"> <li>Presence of &gt; 25 active nests for Herring Gulls or Ring-billed Gulls, &gt;5 active nests for Common Tern or &gt;2 active nests for Caspian Tern<sup>®</sup>.</li> <li>Presence of 5 or more pairs for Brewer's Blackbird<sup>®</sup>.</li> <li>Any active nesting colony of one or more Little Gull, and Great Black-backed Gull is significant<sup>®</sup>.</li> <li>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 &lt;3.0ha with a colony is the SWH<sup>cc</sup>, ccvii</li> <li>Studies would be done during May/June when actively nesting. Evaluation methods to follow "Bird and Bird Habitats: Guidelines for Wind Power Projects"<sup>ccxi</sup></li> <li>SWH MIST<sup>cxlix</sup> Index #6 provides development effects and mitigation measures.</li> </ul> |
| Not present                                                                                                                                                                                                  |                                                                                                                                 |                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>Migratory Butterfly Stopover Areas</b>                                                                                                                                                                    | Painted Lady<br>Red Admiral                                                                                                     | Combination of ELC Community Series; need to                                                                                                                                                                                                                                                | A butterfly stopover area will be a minimum of 10 ha in size with a combination of field and forest                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Studies confirm: <ul style="list-style-type: none"> <li>The presence of Monarch Use Days (MUD) during fall</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |

| Wildlife Habitat                                                                                                                                                                                                                                                                                                                             | Wildlife Species                          | CANDIDATE SWH                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | CONFIRMED SWH                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                                                                                                                                                                                                                                                                              |                                           | ELC Ecosite Codes                                                                                                                                                                                                                                                                                                              | Habitat Criteria and Information Sources                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Defining Criteria                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <p><b><u>Rationale:</u></b><br/>Butterfly stopover areas are extremely rare habitats and are biologically important for butterfly species that migrate south for the winter.</p> <p>- Site is <math>\pm 5.5</math> km from Lake Erie</p> <p>- no field/meadow habitat present</p> <p>- does not meet size requirement</p> <p>Not present</p> | <p><u>Special Concern</u><br/>Monarch</p> | <p>have present one Community Series from each landclass:</p> <p>Field:<br/><del>CUM</del> <del>CUT</del><br/><del>CUS</del></p> <p>Forest:<br/><u>FOC</u> <del>FOD</del><br/><del>FOM</del> <del>CUP</del></p> <p>Anecdotally, a candidate site for butterfly stopover will have a history of butterflies being observed.</p> | <p>habitat present, and will be located within 5 km of Lake Erie or Lake Ontario <sup>cxlix</sup>.</p> <ul style="list-style-type: none"> <li>The habitat is typically a combination of field and forest, and provides the butterflies with a location to rest prior to their long migration south <sup>xxxii, xxxiii, xxxiv, xxxv, xxxvi</sup></li> <li>The habitat should not be disturbed, fields/meadows with an abundance of preferred nectar plants and woodland edge providing shelter are requirements for this habitat <sup>cxlviii, cxlix</sup>.</li> <li>Staging areas usually provide protection from the elements and are often spits of land or areas with the shortest distance to cross the Great Lakes <sup>xxxvii, xxxviii, xxxix, xl, xli</sup>.</li> </ul> <p><u>Information Sources</u></p> <ul style="list-style-type: none"> <li>MNRF District Offices</li> <li>Natural Heritage Information Centre (NHIC)</li> <li>Agriculture Canada in Ottawa may have list of butterfly experts.</li> <li>Field Naturalist Clubs</li> <li>Toronto Entomologists Association</li> </ul> | <p>migration (Aug/Oct)<sup>xliii</sup>. 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<sup>xxxvii</sup>, significant variation can occur between years and multiple years of sampling should occur <sup>xl, xlii</sup>.</p> <ul style="list-style-type: none"> <li>Observational studies are to be completed and need to be done frequently during the migration period to estimate MUD.</li> <li>MUD of &gt;5000 or &gt;3000 with the presence of Painted Ladies or Red Admiral's is to be considered significant.<sup>®</sup></li> <li>SWH MIST <sup>cxlix</sup> Index #16 provides development effects and mitigation measures.</li> </ul> |

| Wildlife Habitat                                                                                                                                                              | Wildlife Species                                                                                                                                                                                                                                                                                                                                                                                        | CANDIDATE SWH                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | CONFIRMED SWH                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                         | ELC Ecosite Codes                                                                                                                                         | Habitat Criteria and Information Sources                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Defining Criteria                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                           | <ul style="list-style-type: none"> <li>Conservation Authorities</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>Landbird</b><br><b>Migratory</b><br><b>Stopover Areas</b><br><br><b>Rationale:</b><br>Sites with a high diversity of species as well as high numbers are most significant. | All migratory songbirds.<br><br>Canadian Wildlife Service Ontario website:<br><a href="http://www.ec.gc.ca/nature/default.asp?lang=En&amp;n=421B7A9D-1">http://www.ec.gc.ca/nature/default.asp?lang=En&amp;n=421B7A9D-1</a><br><br>All migrant raptors species:<br><br>Ontario Ministry of Natural Resources: Fish and Wildlife Conservation Act, 1997. Schedule 7: Specially Protected Birds (Raptors) | All Ecosites associated with these ELC Community Series;<br>FOC<br><del>FOM</del><br><del>FOD</del><br><del>SWC</del><br><del>SWM</del><br><del>SWD</del> | <div style="border: 2px solid red; padding: 5px;"> <ul style="list-style-type: none"> <li>Woodlots &gt;5 ha<sup>Ⓔ</sup> in size and within 5 km iv, v, vi, vii, viii, ix, x, xi, xii, xiii, xiv, xv of Lake Erie and Lake Ontario. If woodlands are rare in an area of shoreline, woodland fragments 2-5ha can be considered for this habitat<sup>Ⓔ</sup></li> <li>If multiple woodlands are located along the shoreline those Woodlands &lt;2km from Lake Erie and Lake Ontario are more significant <sup>cxlix</sup></li> <li>Sites have a variety of habitats, forest, grassland and wetland complexes <sup>cxlix</sup>.</li> <li>The largest sites are more significant <sup>cxlix</sup></li> </ul> </div> <ul style="list-style-type: none"> <li>Woodlots and forest fragments are important habitats to migrating birds<sup>ccxviii</sup>, these features located along the shore and located within 5km of Lake Erie and Lake Ontario are Candidate SWH <sup>cxlviii</sup>.</li> </ul> <b>Information Sources</b> <ul style="list-style-type: none"> <li>Bird Studies Canada</li> <li>Ontario Nature</li> <li>Local birders and field naturalist clubs</li> <li>Ontario Important Bird Areas</li> </ul> | Studies confirm: <ul style="list-style-type: none"> <li>Use of the habitat by &gt;200 birds/day and with &gt;35 spp with at least 10 bird spp. recorded on at least 5 different survey dates<sup>Ⓔ</sup>. This abundance and diversity of migrant bird species is considered above average and significant.</li> <li>Studies should be completed during spring (Mar to May) and fall (Aug to Oct) migration using standardized assessment techniques. Evaluation methods to follow "Bird and Bird Habitats: Guidelines for Wind Power Projects"<sup>ccxi</sup></li> <li>SWH MIST <sup>cxlix</sup> Index #9 provides development effects and mitigation measures.</li> </ul> |

- Candidate habitat due to proximity of larger woodland/wetland features (outside 120 m study area) and Lake Erie.

↳ Follow tree-cutting timing mitigations (Section 4)

| Wildlife Habitat                                                                                                                                                                                                                                                                                                                     | Wildlife Species                                                             | CANDIDATE SWH                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | CONFIRMED SWH                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                                                                                                                                                                                                                                                                      |                                                                              | ELC Ecosite Codes                                                                                                                                                                     | Habitat Criteria and Information Sources                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Defining Criteria                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|                                                                                                                                                                                                                                                                                                                                      |                                                                              |                                                                                                                                                                                       | (IBA) Program                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <p><b>Deer Winter Congregation Areas</b></p> <p><u>Rationale:</u><br/>Deer movement during winter in the southern areas of Eco-region 7E are not constrained by snow depth, however deer will annually congregate in large numbers in suitable woodlands to reduce or avoid the impacts of winter conditions <sup>cxlviii</sup>.</p> | <p>White-tailed Deer</p> <p>- woodland is too small</p> <p>- Not present</p> | <p>All Forested Ecosites with these ELC Community Series;</p> <p>FOC<br/>FOM<br/>FOD<br/>SWC<br/>SWM<br/>SWD</p> <p>Conifer plantations much smaller than 50 ha may also be used.</p> | <p>• Woodlots &gt;100 ha in size or if large woodlots are rare in a planning area woodlots &gt;50ha<sup>®</sup></p> <p>• Deer movement during winter in the southern areas of Eco-region 7E are not constrained by snow depth, however deer will annually congregate in large numbers in suitable woodlands <sup>cxlviii</sup>.</p> <p>• Large woodlots &gt; 100ha and up to 1500 ha are known to be used annually by densities of deer that range from 0.1-1.5 deer/ha <sup>ccxxiv</sup>.</p> <p>• Woodlots with high densities of deer due to artificial feeding are not significant<sup>®</sup>.</p> <p><u>Information Sources</u></p> <ul style="list-style-type: none"> <li>• MNRF District Offices.</li> <li>• LIO/NRVIS</li> </ul> | <p>Studies confirm:</p> <ul style="list-style-type: none"> <li>• Deer management is an MNRF responsibility, deer winter congregation areas considered significant will be mapped by MNRF <sup>cxlviii</sup>.</li> <li>• Use of the woodlot by white-tailed deer will be determined by MNRF, all woodlots exceeding the area criteria are significant, unless determined not to be significant by MNRF <sup>®</sup></li> <li>• Studies should be completed during winter (Jan/Feb) when &gt;20cm of snow is on the ground using aerial survey techniques<sup>ccxxiv</sup>, ground or road surveys. or a pellet count deer density survey<sup>ccxxv</sup>.</li> <li>• SWH MIST <sup>cxlix</sup> Index #2 provides development effects and mitigation measures.</li> </ul> |

## 1.2 Rare Vegetation Communities or Specialized Habitat for Wildlife

### 1.2.1 Rare Vegetation Communities

Rare vegetation communities often contain rare species, particularly plants and small invertebrates, which depend on such habitats for their survival and cannot readily move to or find alternative habitats. When assessing rare vegetation communities, one of the most important criteria is the current representation of the community in the planning area based on its area relative to the total landscape or the number of examples within the planning area. There are a number of criterion used to define rare vegetation communities, however the NHIC uses a system that considers the provincial rank of a species or community type as a tool to prioritize protection efforts. These ranks are not legal designations but have been assigned using the best available scientific information, and follow a systematic ranking procedure developed by The Nature Conservancy (U.S.). The ranks are based on three factors: estimated number of occurrences, estimated community aerial extent, and estimated range of the community within the province:

**S1 Extremely rare** - usually 5 or fewer occurrences in the province, or very few remaining hectares.

**S2 Very rare** - usually between 5 and 20 occurrences in the province, or few remaining hectares.

**S3 Rare to uncommon** - usually between 20 and 100 occurrences in the province; may have fewer occurrences, but with some extensive examples remaining.

The setting of criteria for significant wildlife habitat (SWH) has incorporated this ranking system into its process of determining rare vegetation communities and as such, a rare vegetation community is defined to include areas that contain a provincially rare vegetation community and/or areas that contain a vegetation community that is rare within the planning area.

SWH Table 1.2.1 contains a listing of rare vegetation communities that are considered SWH for the planning area contained within Ecoregion 7E.

**Table 1.2.1 Rare Vegetation Communities.**

| Rare Vegetation Community                                                            | CANDIDATE SWH                            |                                                             |                                                                                                                    | CONFIRMED SWH                                                                                                                                                                                                          |
|--------------------------------------------------------------------------------------|------------------------------------------|-------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                      | ELC Ecosite Code                         | Habitat Description                                         | Detailed Information and Sources                                                                                   | Defining Criteria                                                                                                                                                                                                      |
| <b>Cliffs and Talus Slopes</b>                                                       | Any ELC Ecosite within Community Series: | A Cliff is vertical to near vertical bedrock >3m in height. | Most cliff and talus slopes occur along the Niagara Escarpment.                                                    | <ul style="list-style-type: none"> <li>Confirm any ELC Vegetation Type for Cliffs or Talus Slopes lxxviii</li> <li>SWH MIST<sup>cxlix</sup> Index #21 provides development effects and mitigation measures.</li> </ul> |
| <b>Rationale:</b><br>Cliffs and Talus Slopes are extremely rare habitats in Ontario. | TAO CLO<br>TAS CLS<br>TAT CLT            | A Talus Slope is rock rubble at the base of a cliff made    | <u>Information Sources</u> <ul style="list-style-type: none"> <li>The Niagara Escarpment Commission has</li> </ul> |                                                                                                                                                                                                                        |

| Rare Vegetation Community                                                                                                                                                          | CANDIDATE SWH                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                   | CONFIRMED SWH                                                                                                                                                                                                                                                                                                                                               |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                                                                                                                    | ELC Ecosite Code                                                                                                                                                                                               | Habitat Description                                                                                                                                                                                                                                                                                | Detailed Information and Sources                                                                                                                                                                                                                                                                                                                  | Defining Criteria                                                                                                                                                                                                                                                                                                                                           |
| Not present                                                                                                                                                                        |                                                                                                                                                                                                                | up of coarse rocky debris                                                                                                                                                                                                                                                                          | <p>detailed information on location of these habitats.</p> <ul style="list-style-type: none"> <li>• OMNRF Districts</li> <li>• Natural Heritage Information Centre (NHIC) has location information available on their website</li> <li>• Field Naturalist Clubs</li> <li>• Conservation Authorities</li> </ul>                                    |                                                                                                                                                                                                                                                                                                                                                             |
| <b>Sand Barren</b><br><br><b>Rationale:</b><br>Sand barrens are rare in Ontario and support rare species. Most Sand Barrens have been lost due to cottage development and forestry | ELC Ecosites:<br>SBO1<br>SBS1<br>SBT1<br><br>Vegetation cover varies from patchy and barren to continuous meadow (SBO1), thicket-like (SBS1), or more closed and treed (SBT1). Tree cover always $\leq 60\%$ . | Sand Barrens typically are exposed sand, generally sparsely vegetated and caused by lack of moisture, periodic fires and erosion. Usually located within other types of natural habitat such as forest or savannah. Vegetation can vary from patchy and barren to tree covered, but less than 60%. | A sand barren area $>0.5\text{ha}$ in size <sup>Ⓔ</sup> .<br><br><u>Information Sources</u> <ul style="list-style-type: none"> <li>• OMNRF Districts.</li> <li>• Natural Heritage Information Centre (NHIC) has location information available on their website.</li> <li>• Field Naturalist Clubs</li> <li>• Conservation Authorities</li> </ul> | <ul style="list-style-type: none"> <li>• Confirm any ELC Vegetation Type for Sand Barrens lxxviii</li> <li>• Site must not be dominated by exotic or introduced species (<math>&lt;50\%</math> vegetative cover are exotic sp.)<sup>Ⓔ</sup>.</li> <li>• SWH MIST<sup>cxlix</sup> Index #20 provides development effects and mitigation measures.</li> </ul> |
| Not present                                                                                                                                                                        |                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                             |
| <b>Alvar</b><br><br><b>Rationale:</b><br>Alvars are extremely                                                                                                                      | ALO1<br>ALS1<br>ALT1<br>FOC1                                                                                                                                                                                   | An alvar is typically a level, mostly unfractured calcareous bedrock                                                                                                                                                                                                                               | An Alvar site $> 0.5\text{ ha}$ in size <sup>lxxv</sup> .<br>Alvar is particularly rare in Eco-region 7E where the                                                                                                                                                                                                                                | <ul style="list-style-type: none"> <li>• Field studies that identify four of the five<sup>Ⓔ</sup> <b>Alvar Indicator Species</b><sup>lxxv, cxlix</sup> at a Candidate Alvar site is Significant.</li> </ul>                                                                                                                                                 |

Not present

| Rare Vegetation Community                                                                                                                                                                                | CANDIDATE SWH                                                                                                                                            |                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                    | CONFIRMED SWH                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                                                                                                                                          | ELC Ecosite Code                                                                                                                                         | Habitat Description                                                                                                                                                                                                | Detailed Information and Sources                                                                                                                                                                                                                                                                                                                                                                   | Defining Criteria                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <p><b>Rationale:</b><br/>Due to historic logging practices and land clearance for agriculture, old growth forest is rare in Eco-region 7E.</p> <p>Trees roughly 75-100 years old.</p> <p>Not present</p> | <p>Community Series:</p> <p><del>FOD</del></p> <p><b>FOC</b></p> <p><del>FOM</del></p> <p><del>SWD</del></p> <p><del>SWC</del></p> <p><del>SWM</del></p> | <p>are characterized by heavy mortality or turnover of over-storey trees resulting in a mosaic of gaps that encourage development of a multi-layered canopy and an abundance of snags and downed woody debris.</p> | <p>⑤.</p> <p><u>Information Sources</u></p> <ul style="list-style-type: none"> <li>• OMNRF Forest Resource Inventory mapping</li> <li>• OMNRF Districts.</li> <li>• Field Naturalist Clubs</li> <li>• Conservation Authorities</li> <li>• Sustainable Forestry Licence (SFL) companies will possibly know locations through field operations.</li> <li>• Municipal forestry departments</li> </ul> | <p><del>• If dominant trees species of the are &gt;140 years old, then the area containing these trees is Significant Wildlife Habitat <sup>cxlviii</sup></del></p> <ul style="list-style-type: none"> <li>• The forested area containing the old growth characteristics will have experienced no recognizable forestry activities <sup>cxlviii</sup> (cut stumps will not be present)</li> <li>• The area of forest ecosites combined or an eco-element within an ecosite that contain the old growth characteristics is the SWH.</li> <li>• Determine ELC vegetation types for the forest forest area containing the old growth characteristics <sup>lxxviii</sup></li> <li>• SWH MIST<sup>cxlix</sup> Index #23 provides development effects and mitigation measures.</li> </ul> |
| <p><b>Savannah</b></p> <p><b>Rationale:</b><br/>Savannahs are extremely rare habitats in Ontario.</p>                                                                                                    | <p><del>TPS1</del></p> <p><del>TPS2</del></p> <p><del>TPW1</del></p> <p><del>TPW2</del></p> <p><del>CUS2</del></p>                                       | <p>A Savannah is a tallgrass prairie habitat that has tree cover between 25 – 60% <sup>lxxix, lxxx, lxxxi, lxxxii, lxxxiii</sup>.</p>                                                                              | <p>No minimum size to site ⑤</p> <p>Site must be restored or a natural site. Remnant sites such as railway right of ways are not considered to be SWH.</p> <p><u>Information Sources</u></p> <ul style="list-style-type: none"> <li>• Natural Heritage Information Centre (NHIC) has location data available on their</li> </ul>                                                                   | <p>Field studies confirm one or more of the Savannah indicator species listed in <sup>cxlix</sup> Appendix N should be present ⑤. Note: Savannah plant spp. list from Eco-region 7E should be used <sup>cxlviii</sup>.</p> <ul style="list-style-type: none"> <li>• Area of the ELC Ecosite is the SWH.</li> <li>• Site must not be dominated by exotic or introduced species (&lt;50% vegetative cover are</li> </ul>                                                                                                                                                                                                                                                                                                                                                              |
| <p>Not present</p>                                                                                                                                                                                       |                                                                                                                                                          | <p>In eco-region 7E, known Tallgrass Prairie and savannah</p>                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                    | <ul style="list-style-type: none"> <li>• Area of the ELC Ecosite is the SWH.</li> <li>• Site must not be dominated by exotic or introduced species (&lt;50% vegetative cover are</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |

| Rare Vegetation Community                                                                                       | CANDIDATE SWH    |                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                     | CONFIRMED SWH                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|-----------------------------------------------------------------------------------------------------------------|------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                                                 | ELC Ecosite Code | Habitat Description                                                                                                                                                                                                                                                                                                                                                                          | Detailed Information and Sources                                                                                                                                                                                                                                                                                                                                                                                                                    | Defining Criteria                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|                                                                                                                 |                  | remnants are scattered between Lake Huron and Lake Erie, near Lake St. Clair, north of and along the Lake Erie shoreline, in Brantford and in the Toronto area (north of Lake Ontario).                                                                                                                                                                                                      | website.<br><ul style="list-style-type: none"> <li>• OMNRF Districts.</li> <li>• Field Naturalists Clubs.</li> <li>• Conservation Authorities.</li> </ul>                                                                                                                                                                                                                                                                                           | exotic sp.).<br><ul style="list-style-type: none"> <li>• SWH MIST<sup>cxlix</sup> Index #18 provides development effects and mitigation measures.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>Tallgrass Prairie</b><br><br><b>Rationale:</b><br>Tallgrass Prairies are extremely rare habitats in Ontario. | TPO1<br>TPO2     | A Tallgrass Prairie has ground cover dominated by prairie grasses. An open Tallgrass Prairie habitat has < 25% tree cover<br><small>lxxxix, lxxx, lxxxi, lxxxii, lxxxiii.</small><br><br>In ecoregion 7E, known Tallgrass Prairie and savannah remnants are scattered between Lake Huron and Lake Erie, near Lake St. Clair, north of and along the Lake Erie shoreline, in Brantford and in | No minimum size to site <sup>Ⓔ</sup> . Site must be restored or a natural site. Remnant sites such as railway right of ways are not considered to be SWH.<br><u>Information Sources</u><br><ul style="list-style-type: none"> <li>• OMNRF Districts.</li> <li>• Natural Heritage Information Centre (NHIC) has location information available on their website.</li> <li>• Field Naturalists Clubs.</li> <li>• Conservation Authorities.</li> </ul> | Field studies confirm one or more of the Prairie indicator species listed in <sup>cxlix</sup> Appendix N should be present <sup>Ⓔ</sup> . Note: Prairie plant spp. list from Ecoregion 7E should be used <sup>cxlviii</sup><br><br><ul style="list-style-type: none"> <li>• Area of the ELC Ecosite is the SWH.</li> <li>• Site must not be dominated by exotic or introduced species (&lt;50% vegetative cover are exotic sp.).</li> <li>• SWH MIST<sup>cxlix</sup> Index #19 provides development effects and mitigation measures.</li> </ul> |
| Not present                                                                                                     |                  |                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |

| Rare Vegetation Community                                                                                                                                        | CANDIDATE SWH                                                                                                                                                                                                              |                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | CONFIRMED SWH                                                                                                                                                                                                                                                                                                                                                      |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                                                                                                  | ELC Ecosite Code                                                                                                                                                                                                           | Habitat Description                                                                                                                        | Detailed Information and Sources                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Defining Criteria                                                                                                                                                                                                                                                                                                                                                  |
|                                                                                                                                                                  |                                                                                                                                                                                                                            | the Toronto area (north of Lake Ontario).                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                    |
| <b>Other Rare Vegetation Communities</b><br><br><b>Rationale:</b><br>Plant communities that often contain rare species which depend on the habitat for survival. | Provincially Rare S1, S2 and S3 vegetation communities are listed in Appendix M of the SWHTG <sup>cxlviii</sup> . Any ELC Ecosite Code that has a possible ELC Vegetation Type that is Provincially Rare is Candidate SWH. | Rare Vegetation Communities may include beaches, fens, forest, marsh, barrens, dunes and swamps.<br><br><i>Woodland culturally planted</i> | ELC Ecosite codes that have the potential to be a rare ELC Vegetation Type as outlined in appendix M <sup>cxlviii</sup><br><br>The OMNRF/NHIC will have up to date listing for rare vegetation communities.<br><u>Information Sources</u> <ul style="list-style-type: none"> <li>• Natural Heritage Information Centre (NHIC) has location information available on their website.</li> <li>• OMNRF Districts.</li> <li>• Field Naturalists Clubs.</li> <li>• Conservation Authorities.</li> </ul> | Field studies should confirm if an ELC Vegetation Type is a rare vegetation community based on listing within Appendix M of SWHTG <sup>cxlviii</sup> . <ul style="list-style-type: none"> <li>• Area of the ELC Vegetation Type polygon is the SWH.</li> <li>• SWH MIST<sup>cxlix</sup> Index #37 provides development effects and mitigation measures.</li> </ul> |
| Not present                                                                                                                                                      |                                                                                                                                                                                                                            |                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                    |

### 1.2.2 Specialized Habitat for Wildlife

Some wildlife species require large areas of suitable habitat for their long-term survival. Many wildlife species require substantial areas of suitable habitat for successful breeding. Their populations decline when habitat becomes fragmented and reduced in size<sup>cxlviii</sup>. Specialized habitat for wildlife is a community or diversity-based category, therefore, the more wildlife species a habitat contains, the more significant the habitat becomes to the planning area. The largest and least fragmented habitats within a planning area will support the most significant populations of wildlife. The specialized habitats for wildlife that are considered as SWH are outlined in Table 1.2.2.

**Table 1.2.2 Specialized Habitats of Wildlife considered SWH.**

| Specialized Wildlife Habitat                                                                                                                                                                 | Wildlife Species                                                                                                                                                                                   | CANDIDATE SWH                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | CONFIRMED SWH                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                                                                                                                              |                                                                                                                                                                                                    | ELC Ecosite Codes                                                                                                                                                                                                                                                                      | Habitat Criteria and Information Sources                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Defining Criteria                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>Waterfowl Nesting Area</b><br><br><b>Rationale:</b><br>Important to local waterfowl populations, sites with greatest number of species and highest number of individuals are significant. | American Black Duck<br>Northern Pintail<br>Northern Shoveler<br>Gadwall<br>Blue-winged Teal<br>Green-winged Teal<br>Wood Duck<br>Hooded Merganser<br>Mallard<br><br><i>No wetlands within 120m</i> | All upland habitats located adjacent to these wetland ELC Ecosites are Candidate SWH:<br>MAS1 MAS2<br>MAS3 SAS1<br>SAM1 SAF1<br>MAM1 MAM2<br>MAM3 MAM4<br>MAM5 MAM6<br>SWT1 SWT2<br>SWD1 SWD2<br>SWD3 SWD4<br><br><b>Note: includes adjacency to Provincially Significant Wetlands</b> | A waterfowl nesting area extends 120 m <sup>cxlix</sup> from a wetland (> 0.5 ha) or a wetland (>0.5ha) and any small wetlands (0.5ha) within 120m or a cluster of 3 or more small (<0.5 ha) wetlands within 120 m of each individual wetland where waterfowl nesting is known to occur <sup>cxlix</sup> .<br><ul style="list-style-type: none"> <li>Upland areas should be at least 120 m wide so that predators such as racoons, skunks, and foxes have difficulty finding nests</li> <li>Wood Ducks and Hooded Mergansers utilize large diameter trees (&gt;40cm dbh) in woodlands for cavity nest sites.</li> </ul> <b>Information Sources</b> <ul style="list-style-type: none"> <li>Ducks Unlimited staff may know the locations of particularly productive nesting sites.</li> <li>OMNRF Wetland Evaluations for</li> </ul> | Studies confirmed: <ul style="list-style-type: none"> <li>Presence of 3 or more nesting pairs for listed species excluding Mallards<sup>®</sup>, or;</li> <li>Presence of 10 or more nesting pairs for listed species including Mallards<sup>®</sup>.</li> <li>Any active nesting site of an American Black Duck is considered significant.</li> <li>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"<sup>ccxi</sup></li> <li>A field study confirming waterfowl nesting habitat will determine the boundary</li> </ul> |
| <i>Not present</i>                                                                                                                                                                           |                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |

| Specialized Wildlife Habitat                                                                                                                                                                                                                                                                            | Wildlife Species                                           | CANDIDATE SWH                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | CONFIRMED SWH                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                                                                                                                                                                                                                                         |                                                            | ELC Ecosite Codes                                                                                                                           | Habitat Criteria and Information Sources                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Defining Criteria                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|                                                                                                                                                                                                                                                                                                         |                                                            |                                                                                                                                             | <p>indication of significant waterfowl nesting habitat.</p> <ul style="list-style-type: none"> <li>• Reports and other information available from Conservation Authorities.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | <p>of the waterfowl nesting habitat for the SWH, this may be greater or less than 120 m <sup>cxlviii</sup> from the wetland and will provide enough habitat for waterfowl to successfully nest.</p> <ul style="list-style-type: none"> <li>• SWH MIST<sup>cxlix</sup> Index #25 provides development effects and mitigation measures.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                               |
| <p><b>Bald Eagle and Osprey Nesting, Foraging and Perching Habitat</b></p> <p><u><b>Rationale:</b></u><br/>Nest sites are fairly uncommon in Ecoregion 7E and are used annually by these species. Many suitable nesting locations may be lost due to increasing shoreline development pressures and</p> | <p>Osprey</p> <p><b>Special Concern</b><br/>Bald Eagle</p> | <p>ELC Forest Community Series: FOD, FOM, FOC, SWD, SWM and SWC directly adjacent to riparian areas – rivers, lakes, ponds and wetlands</p> | <p>Nests are associated with lakes, ponds, rivers or wetlands along forested shorelines, islands, or on structures over water.</p> <ul style="list-style-type: none"> <li>• Osprey nests are usually at the top a tree whereas Bald Eagle nests are typically in super canopy trees in a notch within the tree's canopy.</li> <li>• Nests located on man-made objects are not to be included as SWH (e.g. telephone poles and constructed nesting platforms).</li> </ul> <p><u>Information Sources</u></p> <ul style="list-style-type: none"> <li>• Natural Heritage Information Centre (NHIC) compiles all known nesting sites for Bald Eagles in Ontario.</li> <li>• MNRF values information (LIO/NRVIS) will list known nesting locations. Note: data from NRVIS is provided as a point and</li> </ul> | <p>Studies confirm the use of these nests by:</p> <ul style="list-style-type: none"> <li>• One or more active Osprey or Bald Eagle nests in an area<sup>cxlviii</sup>.</li> <li>• 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.</li> <li>• For an Osprey, the active nest and a 300 m radius around the nest or the contiguous woodland stand is the SWH <sup>ccvii</sup>, maintaining undisturbed shorelines with large trees within this area is important <sup>cxlviii</sup>.</li> <li>• For a Bald Eagle the active nest and a 400-800 m radius around the nest is the SWH. <sup>cvi</sup>, <sup>ccvii</sup> Area of</li> </ul> |

- Not adjacent to riparian areas

Not present

| Specialized Wildlife Habitat                                    | Wildlife Species                                                                                                  | CANDIDATE SWH                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                | CONFIRMED SWH                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|-----------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                 |                                                                                                                   | ELC Ecosite Codes                                                                       | Habitat Criteria and Information Sources                                                                                                                                                                                                                                                                                                                                                                       | Defining Criteria                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| scarcity of habitat.                                            |                                                                                                                   |                                                                                         | <p>does not represent all the habitat.</p> <ul style="list-style-type: none"> <li>Nature Counts, Ontario Nest Records Scheme data.</li> <li>OMNRF District.</li> <li>Check the Ontario Breeding Bird Atlas <sup>ccv</sup> or Rare Breeding Birds in Ontario for species documented</li> <li>Reports and other information available from Conservation Authorities.</li> <li>Field Naturalists clubs</li> </ul> | <p>the habitat from 400-800m is dependant on site lines from the nest to the development and inclusion of perching and foraging habitat <sup>cvi</sup></p> <ul style="list-style-type: none"> <li>To be significant a site must be used annually. When found inactive, the site must be known to be inactive for <math>\geq 3</math> years or suspected of not being used for &gt;5 years before being considered not significant. <sup>ccvii</sup></li> <li>Observational studies to determine nest site use, perching sites and foraging areas need to be done from early March to mid August.</li> <li>Evaluation methods to follow "Bird and Bird Habitats: Guidelines for Wind Power Projects"<sup>ccxi</sup></li> <li>SWH MIST<sup>cxlix</sup> Index #26 provides development effects and mitigation measures</li> </ul> |
| <b>Woodland Raptor Nesting Habitat</b><br><br><u>Rationale:</u> | Northern Goshawk<br>Cooper's Hawk<br>Sharp-shinned Hawk<br>Red-shouldered Hawk<br>Barred Owl<br>Broad-winged Hawk | <p>May be found in all forested ELC Ecosites.</p> <p>May also be found in SWC, SWM,</p> | <p>All natural or conifer plantation woodland/forest stands &gt;30ha with &gt;4ha of interior habitat <sup>lxxxviii, lxxxix, xc, xci, xciii, xciv, xcv,xcvi, cxviii</sup>. Interior habitat determined with a 200m buffer<sup>cxlviii</sup></p> <ul style="list-style-type: none"> <li>Stick nests found in a variety of</li> </ul>                                                                            | <p>Studies confirm:</p> <ul style="list-style-type: none"> <li>Presence of 1 or more active nests from species list is considered significant<sup>cxlviii</sup>.</li> <li>Red-shouldered Hawk and</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |

| Specialized Wildlife Habitat                                                                                                                                                                                                         | Wildlife Species                                 | CANDIDATE SWH                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | CONFIRMED SWH                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------|---------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                                                                                                                                                                      |                                                  | ELC Ecosite Codes                           | Habitat Criteria and Information Sources                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Defining Criteria                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <p>Nests sites for these species are rarely identified; these area sensitive habitats are often used annually by these species.</p> <p>- No interior habitat present</p> <p>- Does not meet size requirements</p> <p>Not present</p> |                                                  | SWD and CUP3                                | <p>intermediate-aged to mature conifer, deciduous or mixed forests within tops or crotches of trees. Species such as Coopers hawk nest along forest edges sometimes on peninsulas or small off-shore islands.</p> <ul style="list-style-type: none"> <li>In disturbed sites, nests may be used again, or a new nest will be in close proximity to old nest.</li> </ul> <p><u>Information Sources</u></p> <ul style="list-style-type: none"> <li>OMNRF Districts.</li> <li>Check the Ontario Breeding Bird Atlas <sup>ccv</sup> or Rare Breeding Birds in Ontario for species documented.</li> <li>Check data from Bird Studies Canada.</li> <li>Reports and other information available from Conservation Authorities.</li> </ul> | <p>Northern Goshawk – A 400m radius around the nest or 28 ha area of habitat is the SWH <sup>ccvii</sup>. (the 28 ha habitat area would be applied where optimal habitat is irregularly shaped around the nest)</p> <ul style="list-style-type: none"> <li>Barred Owl – A 200m radius around the nest is the SWH <sup>ccvii</sup>.</li> <li>Broad-winged Hawk and Coopers Hawk, – A 100m radius around the nest is the SWH <sup>ccvii</sup>.</li> <li>Sharp-Shinned Hawk – A 50m radius around the nest is the SWH <sup>ccvii</sup>.</li> <li>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 discovery of nests by narrowing down the search area.</li> <li>SWH MIST <sup>cxlix</sup> Index #27 provides development effects and mitigation measures.</li> </ul> |
| <b>Turtle Nesting Areas</b>                                                                                                                                                                                                          | Midland Painted Turtle<br><u>Special Concern</u> | Exposed mineral soil (sand or gravel) areas | <ul style="list-style-type: none"> <li>Best nesting habitat for turtles are close to water and away from roads and sites less prone to loss</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | <p>Studies confirm:</p> <ul style="list-style-type: none"> <li>Presence of 5 or more nesting Midland Painted</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |

| Specialized Wildlife Habitat                                                                                                                                       | Wildlife Species                                                  | CANDIDATE SWH                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | CONFIRMED SWH                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                                                                                                    |                                                                   | ELC Ecosite Codes                                                                                                                                                                                                            | Habitat Criteria and Information Sources                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Defining Criteria                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <p><b>Rationale:</b><br/>These habitats are rare and when identified will often be the only breeding site for local populations of turtles.</p> <p>Not present</p> | <p><u>Species</u><br/>Northern Map Turtle<br/>Snapping Turtle</p> | <p>adjacent (&lt;100m)<br/><sup>cxlviii</sup> or within the following ELC Ecosites:</p> <div style="border: 1px solid red; padding: 5px;"> <p>MAS1<br/>MAS2<br/>MAS3<br/>SAS1<br/>SAM1<br/>SAF1<br/>BOO1<br/>FEO1</p> </div> | <p>of eggs by predation from skunks, raccoons or other animals.</p> <ul style="list-style-type: none"> <li>For an area to function as a turtle-nesting area, it must provide sand and gravel that turtles are able to dig in and are located in open, sunny areas. Nesting areas on the sides of municipal or provincial road embankments and shoulders are not SWH.</li> <li>Sand and gravel beaches adjacent to undisturbed shallow weedy areas of marshes, lakes, and rivers are most frequently used.</li> </ul> <p><u>Information Sources</u></p> <ul style="list-style-type: none"> <li>Use Ontario Soil Survey reports and maps to help find suitable substrate for nesting turtles (well-drained sands and fine gravels).</li> <li>Check the Ontario Herpetofaunal Summary Atlas records or other similar atlases for uncommon turtles; location information may help to find potential nesting habitat for them.</li> <li>Natural Heritage Information Centre (NHIC)</li> <li>Field Naturalist Clubs</li> </ul> | <p>Turtles<sup>®</sup></p> <ul style="list-style-type: none"> <li>One or more Northern Map Turtle or Snapping Turtle nesting is a SWH<sup>®</sup>.</li> <li>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 dependant on slope, riparian vegetation and adjacent land use is the SWH.<sup>cxlviii</sup></li> <li>Travel routes from wetland to nesting area are to be considered within the SWH as part of the 30-100m area of habitat.<sup>cxlix</sup></li> <li>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.</li> <li>SWH MIST <sup>cxlix</sup> Index #28 provides development effects and mitigation measures for turtle nesting habitat.</li> </ul> |
| <del>Seeps and Springs</del>                                                                                                                                       | Wild Turkey<br>Ruffed Grouse                                      | Seeps/Springs are areas where                                                                                                                                                                                                | <del>Any forested area (with &lt;25% meadow/field/pasture) within the</del>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Field Studies confirm: <ul style="list-style-type: none"> <li>Presence of a site with 2 or</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |

| Specialized Wildlife Habitat                                                                                                                                                               | Wildlife Species                                                                                                                                 | CANDIDATE SWH                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | CONFIRMED SWH                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                                                                                                                            |                                                                                                                                                  | ELC Ecosite Codes                                                                                                                                                                                                                | Habitat Criteria and Information Sources                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Defining Criteria                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <p><b>Rationale:</b><br/>Seeps/Springs are typical of headwater areas and are often at the source of coldwater streams.</p> <p>Not present</p>                                             | <p>Spruce Grouse<br/>White-tailed Deer<br/>Salamander spp.</p> <p>No Water-Courses on site</p>                                                   | <p>ground water comes to the surface. Often they are found within headwater areas within forested habitats. Any forested Ecosite within the headwater areas of a stream could have seeps/springs.</p>                            | <p><del>headwaters of a stream or river system</del> <sup>cxvii, cxlix</sup>.</p> <ul style="list-style-type: none"> <li>Seeps and springs are important feeding and drinking areas especially in the winter will typically support a variety of plant and animal species <sup>cxix, cxx, cxxi, cxxii, cxiii, cxiv</sup>.</li> </ul> <p><u>Information Sources</u></p> <ul style="list-style-type: none"> <li>Topographical Map.</li> <li>Thermography.</li> <li>Hydrological surveys conducted by Conservation Authorities and MOE.</li> <li>Field Naturalists Clubs and landowners.</li> <li>Municipalities and Conservation Authorities may have drainage maps and headwater areas mapped.</li> </ul> | <p>more<sup>®</sup> seeps/springs should be considered SWH.</p> <ul style="list-style-type: none"> <li>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 the habitat <sup>cxlviii</sup>.</li> <li>SWH MIST <sup>cxlix</sup> Index #30 provides development effects and mitigation measures</li> </ul> |
| <p><del><b>Amphibian Breeding Habitat (Woodland).</b></del></p> <p><b>Rationale:</b><br/>These habitats are extremely important to amphibian biodiversity within a landscape and often</p> | <p>Eastern Newt<br/>Blue-spotted Salamander<br/>Spotted Salamander<br/>Gray Treefrog<br/>Spring Peeper<br/>Western Chorus Frog<br/>Wood Frog</p> | <p>All Ecosites associated with these ELC Community Series;<br/>FOC<br/><del>FOM</del><br/><del>FOD</del><br/><del>SWC</del><br/><del>SWM</del><br/><del>SWD</del></p> <p>Breeding pools within the woodland or the shortest</p> | <p><del>• Presence of a wetland, pond or woodland pool (including vernal pools) &gt;500m<sup>2</sup> (about 25m diameter) <sup>ccvii</sup> within or adjacent (within 120m) to a woodland (no minimum size). <sup>clxxvi, lxiii, lxv, lxvi, lxvii, lxviii, lxix, lxx</sup> Some small wetlands may not be mapped and may be important breeding pools for amphibians.</del></p> <p><del>• Woodlands with permanent ponds or those containing water in most years until mid-July are more likely to be used as</del></p>                                                                                                                                                                                   | <p>Studies confirm;</p> <ul style="list-style-type: none"> <li>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) <sup>lxxi</sup> or 2 or more of the listed frog species with Call Level Codes of 3<sup>®</sup>.</li> <li>A combination of observational study and call count surveys <sup>cviii</sup> will be</li> </ul>                                                             |

Not present

| Specialized Wildlife Habitat                                                                                                      | Wildlife Species                                                                                                                                                                                        | CANDIDATE SWH                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | CONFIRMED SWH                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|-----------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                                                                   |                                                                                                                                                                                                         | ELC Ecosite Codes                                                                                                                                                      | Habitat Criteria and Information Sources                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Defining Criteria                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| within Central Ontario landscapes.                                                                                                |                                                                                                                                                                                                         | be adjacent to woodlands.                                                                                                                                              | <p>water bodies with abundant emergent vegetation.</p> <p><u>Information Sources</u></p> <ul style="list-style-type: none"> <li>Ontario Herpetofaunal Summary Atlas (or other similar atlases)</li> <li>Canadian Wildlife Service Amphibian Road Surveys and Backyard Amphibian Call Count.</li> <li>OMNRF Districts and wetland evaluations.</li> <li>Reports and other information available from Conservation Authorities.</li> </ul>                                                                                         | <p>area and the shoreline are the SWH.</p> <ul style="list-style-type: none"> <li>A combination of observational study and call count surveys <sup>cviii</sup> will be required during the spring (March-June) when amphibians are concentrated around suitable breeding habitat within or near the wetlands.</li> <li>If a SWH is determined for Amphibian Breeding Habitat (Wetlands) then Movement Corridors are to be considered as outlined in Table 1.4.1 of this Schedule.</li> <li>SWH MIST <sup>cxlix</sup> Index #15 provides development effects and mitigation measures.</li> </ul> |
| <p><b>Woodland Area-Sensitive Bird Breeding Habitat</b></p> <p><b>Rationale:</b><br/>Large, natural blocks of mature woodland</p> | <p>Yellow-bellied Sapsucker<br/>Red-breasted Nuthatch<br/>Veery<br/>Blue-headed Vireo<br/>Northern Parula<br/>Black-throated Green Warbler<br/>Blackburnian Warbler<br/>Black-throated Blue Warbler</p> | <p>All Ecosites associated with these ELC Community Series;<br/>FOC<br/><del>FOM</del><br/><del>FOD</del><br/><del>SWC</del><br/><del>SWM</del><br/><del>SWD</del></p> | <ul style="list-style-type: none"> <li>Habitats where interior forest breeding birds are breeding, typically large mature (&gt;60 yrs old) forest stands or woodlots &gt;30 ha. <sup>cv, cxxxi, cxxxi, cxxxii, cxxxiii, cxxxiv, cxxxv, cxxxvi, cxxxvii, cxxxviii, cxxxix, cxi, cxli, cxlii, cxliii, cxliv, cxlv, cxlvi, cli, clii, cliii, cliv, clv, clvi, clvii, clviii, clix,</sup></li> <li>Interior forest habitat is at least 200 m from forest edge habitat. <sup>clxiv</sup></li> </ul> <p><u>Information Sources</u></p> | <p>Studies confirm:</p> <ul style="list-style-type: none"> <li>Presence of nesting or breeding pairs of 3 or more of the listed wildlife species. <sup>©</sup></li> <li>Note: any site with breeding Cerulean Warblers or Canada Warblers is to be considered SWH. <sup>©</sup></li> <li>Conduct field investigations in spring and early summer</li> </ul>                                                                                                                                                                                                                                     |

Not present

| Specialized Wildlife Habitat                                                                                                                         | Wildlife Species                                                                                                                                             | CANDIDATE SWH                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                             | CONFIRMED SWH                                                                                                                                                                                                                                                                                                         |
|------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                                                                                      |                                                                                                                                                              | ELC Ecosite Codes                        | Habitat Criteria and Information Sources                                                                                                                                                                                                                                                                                                                                                                                                                    | Defining Criteria                                                                                                                                                                                                                                                                                                     |
| habitat within the settled areas of Southern Ontario are important habitats for area sensitive interior forest song birds.<br><br><i>Not present</i> | Ovenbird<br>Scarlet Tanager<br>Winter Wren<br>Pileated Woodpecker<br><br><b>Special Concern:</b><br>Cerulean Warbler<br>Canada Warbler<br><br><i>present</i> | <i>- does not meet size requirements</i> | <ul style="list-style-type: none"> <li>Local birder clubs.</li> <li>Canadian Wildlife Service (CWS) for the location of forest bird monitoring.</li> <li>Bird Studies Canada conducted a 3-year study of 287 woodlands to determine the effects of forest fragmentation on forest birds and to determine what forests were of greatest value to interior species</li> <li>Reports and other information available from Conservation Authorities.</li> </ul> | when birds are singing and defending their territories. <ul style="list-style-type: none"> <li>Evaluation methods to follow "Bird and Bird Habitats: Guidelines for Wind Power Projects"<sup>ccxi</sup></li> <li>SWH MIST <sup>cxlix</sup> Index #34 provides development effects and mitigation measures.</li> </ul> |

### 1.3 Habitat for Species of Conservation Concern (Not including Endangered or Threatened Species)

Habitats of Species of Conservation Concern include wildlife species that are listed as Special Concern or rare, that are declining, or are featured species. Habitats of Species of Conservation Concern do not include habitats of Endangered or Threatened species as identified by the Endangered Species Act 2007. Table 1.3 assists with the identification of SWH for Species of Conservation Concern.

**Table 1.3. Habitats of Species of Conservation Concern considered SWH.**

| Wildlife                                                                                                                                                            | Species                                                                                                                                                                       | CANDIDATE SWH                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | CONFIRMED SWH                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                                                                                                     |                                                                                                                                                                               | ELC Ecosite                                                                          | Habitat Criteria and Information Sources                                                                                                                                                                                                                                                                                                                                                                                                                        | Defining Criteria                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Marsh Breeding Bird Habitat</b><br><b>Rationale:</b><br>Wetlands for these bird species are typically productive and fairly rare in Southern Ontario landscapes. | American Bittern<br>Virginia Rail<br>Sora<br>Common Moorhen<br>American Coot<br>Pied-billed Grebe<br>Marsh Wren<br>Sedge Wren<br>Common Loon<br>Green Heron<br>Trumpeter Swan | MAM1<br>MAM2<br>MAM3<br>MAM4<br>MAM5<br>MAM6<br>SAS1<br>SAM1<br>SAF1<br>FEO1<br>BOO1 | <ul style="list-style-type: none"> <li>Nesting occurs in wetlands.</li> <li>All wetland habitat is to be considered as long as there is shallow water with emergent aquatic vegetation present <sup>cxiv</sup>.</li> <li>For Green Heron, habitat is at the edge of water such as sluggish streams, ponds and marshes sheltered by shrubs and trees. Less frequently, it may be found in upland shrubs or forest a considerable distance from water.</li> </ul> | Studies confirm: <ul style="list-style-type: none"> <li>Presence of 5 or more nesting pairs of Sedge Wren or Marsh Wren <b>or</b> breeding by any combination of 4 or more of the listed species <sup>©</sup>.</li> <li>Note: any wetland with breeding of 1 or more Black Terns, Trumpeter Swan, Green Heron or Yellow Rail is SWH <sup>©</sup>.</li> <li>Area of the ELC ecosite is the SWH.</li> <li>Breeding surveys should be done in May/June when these species are actively nesting in wetland habitats.</li> <li>Evaluation methods to follow "Bird and Bird Habitats: Guidelines for Wind Power Projects" <sup>ccxi</sup></li> <li>SWH MIST <sup>cxlix</sup> Index #35 provides development effects and mitigation measures</li> </ul> |
|                                                                                                                                                                     | <b>Special Concern:</b><br>Black Tern<br>Yellow Rail                                                                                                                          | For Green Heron:<br>All SW, MA and CUM1 sites.                                       | <b>Information Sources</b> <ul style="list-style-type: none"> <li>OMNRF District and wetland evaluations.</li> <li>Field Naturalist clubs</li> <li>Natural Heritage Information Centre (NHIC) Records.</li> <li>Reports and other information available from Conservation Authorities.</li> <li>Ontario Breeding Bird Atlas.</li> <li>Large grassland areas</li> </ul>                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>Open Country</b>                                                                                                                                                 | Upland Sandpiper                                                                                                                                                              | CUM1                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Field Studies confirm:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |

Not present

| Wildlife                                                                                                                                                                                                                                                                                  | Species                                                                                                                                   | CANDIDATE SWH                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | CONFIRMED SWH                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                                                                                                                                                                                                                           |                                                                                                                                           | ELC Ecosite                                | Habitat Criteria and Information Sources                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Defining Criteria                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <p><b>Bird Breeding Habitat</b></p> <p><b>Rationale:</b><br/>This wildlife habitat is declining throughout Ontario and North America. Species such as the Upland Sandpiper have declined significantly the past 40 years based on CWS (2004) trend records.</p> <p><i>Not present</i></p> | <p>Grasshopper Sparrow<br/>Vesper Sparrow<br/>Northern Harrier<br/>Savannah Sparrow</p> <p><b>Special Concern</b><br/>Short-eared Owl</p> | <p><del>CUM2</del></p>                     | <p>(includes natural and cultural fields and meadows) &gt;30 ha<br/>clx, clxi, clxii, clxiii, clxiv, clxv, clxvi, clxvii, clxviii, clxix.</p> <ul style="list-style-type: none"> <li>Grasslands not Class 1 or 2 agricultural lands, and not being actively used for farming (i.e. no row cropping or intensive hay or livestock pasturing in the last 5 years) <sup>Ⓔ</sup>.</li> <li>Grassland sites considered significant should have a history of longevity, either abandoned fields, mature hayfields and pasturelands that are at least 5 years or older.</li> <li>The Indicator bird species are area sensitive requiring larger grassland areas than the common grassland species.</li> </ul> <p><u>Information Sources</u></p> <ul style="list-style-type: none"> <li>Agricultural land classification maps, Ministry of Agriculture.</li> <li>Local bird clubs.</li> <li>Ontario Breeding Bird Atlas</li> <li>EIS Reports and other information available from Conservation Authorities.</li> </ul> | <ul style="list-style-type: none"> <li>Presence of nesting or breeding of 2 or more of the listed species. <sup>Ⓔ</sup></li> <li>A field with 1 or more breeding Short-eared Owls is to be considered SWH.</li> <li>The area of SWH is the contiguous ELC ecosite field areas.</li> <li>Conduct field investigations of the most likely areas in spring and early summer when birds are singing and defending their territories.</li> <li>Evaluation methods to follow "Bird and Bird Habitats: Guidelines for Wind Power Projects"<sup>ccxi</sup></li> <li>SWH MIST <sup>cxlix</sup> Index #32 provides development effects and mitigation measures</li> </ul> |
| <p><b>Shrub/Early Successional</b></p>                                                                                                                                                                                                                                                    | <p><u>Indicator Spp:</u><br/>Brown Thrasher</p>                                                                                           | <p><del>CUT1</del><br/><del>CUT2</del></p> | <p>Large field areas succeeding to shrub and thicket</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | <p>Field Studies confirm:</p> <ul style="list-style-type: none"> <li>Presence of nesting or breeding of</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |

| Wildlife                                                                                                                                                                                                                                  | Species                                                                                                                                                                                                     | CANDIDATE SWH                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | CONFIRMED SWH                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                                                                                                                                                                           |                                                                                                                                                                                                             | ELC Ecosite                                                                                                                | Habitat Criteria and Information Sources                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Defining Criteria                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>Bird Breeding Habitat</b><br><br><b>Rationale:</b><br>This wildlife habitat is declining throughout Ontario and North America. The Brown Thrasher has declined significantly over the past 40 years based on CWS (2004) trend records. | Clay-coloured Sparrow<br><br><u>Common Spp.</u><br>Field Sparrow<br>Black-billed Cuckoo<br>Eastern Towhee<br>Willow Flycatcher<br><br><b>Special Concern:</b> Yellow-breasted Chat<br>Golden-winged Warbler | CUS1<br>CUS2<br>CUW1<br>CUW2<br><br>Patches of shrub ecosites can be complexed into a larger habitat for some bird species | habitats > 10 ha <sup>clxiv</sup> in size. <ul style="list-style-type: none"> <li>Shrub land or early successional fields, not class 1 or 2 agricultural lands, not being actively used for farming (i.e. no row-cropping, haying or live-stock pasturing in the last 5 years) <sup>㉔</sup>.</li> <li>Shrub thicket habitats (&gt;10 ha) are most likely to support and sustain a diversity of these species <sup>clxxiii</sup>.</li> <li>Shrub and thicket habitat sites considered significant should have a history of longevity, either abandoned fields or pasturelands.</li> </ul> <u>Information Sources</u> <ul style="list-style-type: none"> <li>Agricultural land classification maps, Ministry of Agriculture.</li> <li>Local bird clubs.</li> <li>Ontario Breeding Bird Atlas</li> <li>Reports and other information available from Conservation Authorities.</li> </ul> | 1 of the indicator species and at least 2 of the common species. <sup>㉔</sup> <ul style="list-style-type: none"> <li>A habitat with breeding Yellow-breasted Chat or Golden-winged Warbler is to be considered as Significant Wildlife Habitat. <sup>㉔</sup></li> <li>The area of the SWH is the contiguous ELC ecosite field/thicket area.</li> <li>Conduct field investigations of the most likely areas in spring and early summer when birds are singing and defending their territories</li> <li>Evaluation methods to follow "Bird and Bird Habitats: Guidelines for Wind Power Projects" <sup>ccxi</sup></li> <li>SWH MIST <sup>cxlix</sup> Index #33 provides development effects and mitigation measures.</li> </ul> |
| <b>Terrestrial Crayfish</b><br><br><b>Rationale:</b><br>Terrestrial Crayfish are only found within SW Ontario                                                                                                                             | Chimney or Digger Crayfish; ( <u>Fallicambarus fodiens</u> )<br><br>Devil Crayfish or Meadow Crayfish;                                                                                                      | MAM1 MAM2<br>MAM3 MAM4<br>MAM5 MAM6<br>MAS1 MAS2<br>MAS3 SWD<br>SWT SWM                                                    | Wet meadow and edges of shallow marshes (no minimum size) should be surveyed for terrestrial crayfish. <ul style="list-style-type: none"> <li>Constructs burrows in marshes, mudflats, meadows, the ground can't</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Studies Confirm: <ul style="list-style-type: none"> <li>Presence of 1 or more individuals of species listed or their chimneys (burrows) in suitable meadow marsh, swamp or moist terrestrial sites <sup>cci</sup></li> <li>Area of ELC ecosite or an</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                               |

Not present

| Wildlife                                                                                                                                                                                                                                                    | Species                                                                                                                                                               | CANDIDATE SWH                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | CONFIRMED SWH                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                                                                                                                                                                                             |                                                                                                                                                                       | ELC Ecosite                                                                                                                                                                                                 | Habitat Criteria and Information Sources                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Defining Criteria                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| in Canada and their habitats are very rare. <sup>ccii</sup>                                                                                                                                                                                                 | ( <u>Cambarus</u><br><u>Diogenes</u> )                                                                                                                                | CUM1 with inclusions of above meadow marsh ecosites can be used by terrestrial crayfish.                                                                                                                    | be too moist. Can often be found far from water.<br><ul style="list-style-type: none"> <li>Both species are a semi-terrestrial burrower which spends most of its life within burrows consisting of a network of tunnels. Usually the soil is not too moist so that the tunnel is well formed.</li> </ul> <u>Information Sources</u> <ul style="list-style-type: none"> <li>Information sources from "Conservation Status of Freshwater Crayfishes" by Dr. Premek Hamr for the WWF and CNF March 1998</li> </ul>                                                                                                                                       | ecoelement area of meadow marsh or swamp within the larger ecosite area is the SWH.<br><ul style="list-style-type: none"> <li>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 difficult <sup>cci</sup></li> <li>SWH MIST <sup>cxlix</sup> Index #36 provides development effects and mitigation measures.</li> </ul>                                                                                                                                                                                        |
| <div style="border: 2px solid red; padding: 5px; display: inline-block;"> <b>Special Concern and Rare Wildlife Species</b> </div> <p><b>Rationale:</b><br/>These species are quite rare or have experienced significant population declines in Ontario.</p> | All Special Concern and Provincially Rare (S1-S3, SH) plant and animal species. Lists of these species are tracked by the Natural Heritage Information Centre (NHIC). | <p>All plant and animal element occurrences (EO) within a 1 or 10km grid.</p> <p>Older element occurrences were recorded prior to GPS being available, therefore location information may lack accuracy</p> | <p>When an element occurrence is identified within a 1 or 10 km grid for a Special Concern or provincially Rare species; linking candidate habitat on the site needs to be completed to ELC Ecosites <sup>lxxviii</sup></p> <p><u>Information Sources</u></p> <ul style="list-style-type: none"> <li>Natural Heritage Information Centre (NHIC) will have Special Concern and Provincially Rare (S1-S3, SH) species lists with element occurrences data.</li> <li>NHIC Website "Get Information" : <a href="http://nhic.mnr.gov.on.ca">http://nhic.mnr.gov.on.ca</a></li> <li>Ontario Breeding Bird Atlas</li> <li>Expert advice should be</li> </ul> | <p>Studies Confirm:</p> <ul style="list-style-type: none"> <li>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.</li> <li>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.</li> <li>SWH MIST <sup>cxlix</sup> Index #37 provides development effects and</li> </ul> |

Not present

Not present due to cultural nature of woodland and lack of diversity.

| Wildlife | Species | CANDIDATE SWH |                                                                                             | CONFIRMED SWH        |
|----------|---------|---------------|---------------------------------------------------------------------------------------------|----------------------|
|          |         | ELC Ecosite   | Habitat Criteria and Information Sources                                                    | Defining Criteria    |
|          |         |               | sought as many of the rare spp. have little information available about their requirements. | mitigation measures. |

## 1.4 Animal Movement Corridors

Animal Movement Corridors are elongated areas used by wildlife to move from one habitat to another. They are important to ensure genetic diversity in populations, to allow seasonal migration of animals (e.g. deer moving from summer to winter range) and to allow animals to move throughout their home range from feeding areas to cover areas. Animal movement corridors function at different scales often related to the size and home range of the animal. For example, short, narrow areas of natural habitat may function as a corridor between amphibian breeding areas and their summer range, while wider, longer corridors are needed to allow deer to travel from their winter habitat to their summer habitat.

Identifying the most important corridors that provide connectivity across the landscape is challenging because of a lack of specific information on animal movements. There is also some uncertainty about the optimum width and mortality risks of corridors. Furthermore, a corridor may be beneficial for some species but detrimental to others. For example, narrow linear corridors may allow increased access for raccoons, cats, and other predators. Also, narrow corridors dominated by edge habitat may encourage invasion by weedy generalist plants and opportunistic species of birds and mammals. Corridors often consist of naturally vegetated areas that run through more open or developed landscapes. However, sparsely vegetated areas can also function as corridors. For example, many species move freely through agricultural land to reach natural areas. Despite the difficulty of identifying exact movement corridors for all species, these landscape features are important to the long-term viability of certain wildlife populations.

### Animal Movement Corridors should only be identified as SWH where:

Where a Confirmed or Candidate SWH has been identified by MNRF or the planning authority based on documented evidence of a habitat identified within these Criterion Schedules or the Significant Wildlife Habitat Technical Guide. The identified wildlife habitats Table 1.4.1 will have distinct passageways or rely on well defined natural features for movements between habitats required by the species to complete its life cycle.

**Table 1.4.1 Animal Movement Corridors**

| Habitat                                                                                           | SPECIES                                                                                                | CANDIDATE SWH                                                                                                                |                                                                                                                                                                                                                                                                   | CONFIRMED SWH                                                                                                                                                                            |
|---------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                                   |                                                                                                        | ELC Eco-sites                                                                                                                | Habitat Criteria and Information Sources                                                                                                                                                                                                                          | Defining Criteria                                                                                                                                                                        |
| <b>Amphibian Movement Corridors</b><br><br><b>Rationale:</b><br>Movement corridors for amphibians | Eastern Newt<br>American Toad<br>Spotted Salamander<br>Four-toed Salamander<br>Blue-spotted Salamander | Corridors may be found in all ecosites associated with water.<br><br>• Corridors will be determined based on identifying the | Movement corridors between breeding habitat and summer habitat <small>clxxiv, clxxv, clxxvi, clxxvii, clxxviii, clxxix, clxxx, clxxxi</small><br><br>• Movement corridors must be determined when Amphibian breeding habitat is confirmed as SWH from Table 1.2.2 | • Field Studies must be conducted at the time of year when species are expected to be migrating or entering breeding sites.<br><br>• Corridors should consist of native vegetation, with |

| Habitat                                                                                                                               | SPECIES                                                                                                                            | CANDIDATE SWH                                                      |                                                                                                                                                                                                                                                                                                                                                                 | CONFIRMED SWH                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|---------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                                                                       |                                                                                                                                    | ELC Eco-sites                                                      | Habitat Criteria and Information Sources                                                                                                                                                                                                                                                                                                                        | Defining Criteria                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <p>moving from their terrestrial habitat to breeding habitat can be extremely important for local populations.</p> <p>Not present</p> | <p>Gray Treefrog<br/>Western Chorus Frog<br/>Northern Leopard Frog<br/>Pickerel Frog<br/>Green Frog<br/>Mink Frog<br/>Bullfrog</p> | <p>significant breeding habitat for these species in Table 1.1</p> | <p><b>(Amphibian Breeding Habitat –Wetland)</b> of this Schedule ⑥.</p> <p><u>Information Sources</u></p> <ul style="list-style-type: none"> <li>• MNRF District Office.</li> <li>• Natural Heritage Information Centre (NHIC).</li> <li>• Reports and other information available from Conservation Authorities.</li> <li>• Field Naturalist Clubs.</li> </ul> | <p>several layers of vegetation. Corridors unbroken by roads, waterways or bodies, and undeveloped areas are most significant<sup>cxlix</sup></p> <ul style="list-style-type: none"> <li>• Corridors should have at least 15m of vegetation on both sides of waterway<sup>cxlix</sup> or be up to 200m wide<sup>cxlix</sup> of woodland habitat and with gaps &lt;20m<sup>cxlix</sup>.</li> <li>• Shorter corridors are more significant than longer corridors, however amphibians must be able to get to and from their summer and breeding habitat<sup>cxlix</sup>.</li> <li>• SWH MIST <sup>cxlix</sup> Index #40 provides development effects and mitigation measures</li> </ul> |

## 1.5 Exceptions for EcoRegion 7E

Exceptions are candidate wildlife habitats that will have different criteria than what is proposed in the above schedules for an area within the Eco-region. The Exceptions will be based on Eco-Districts and municipalities can apply the exception for the eco-district within their planning area

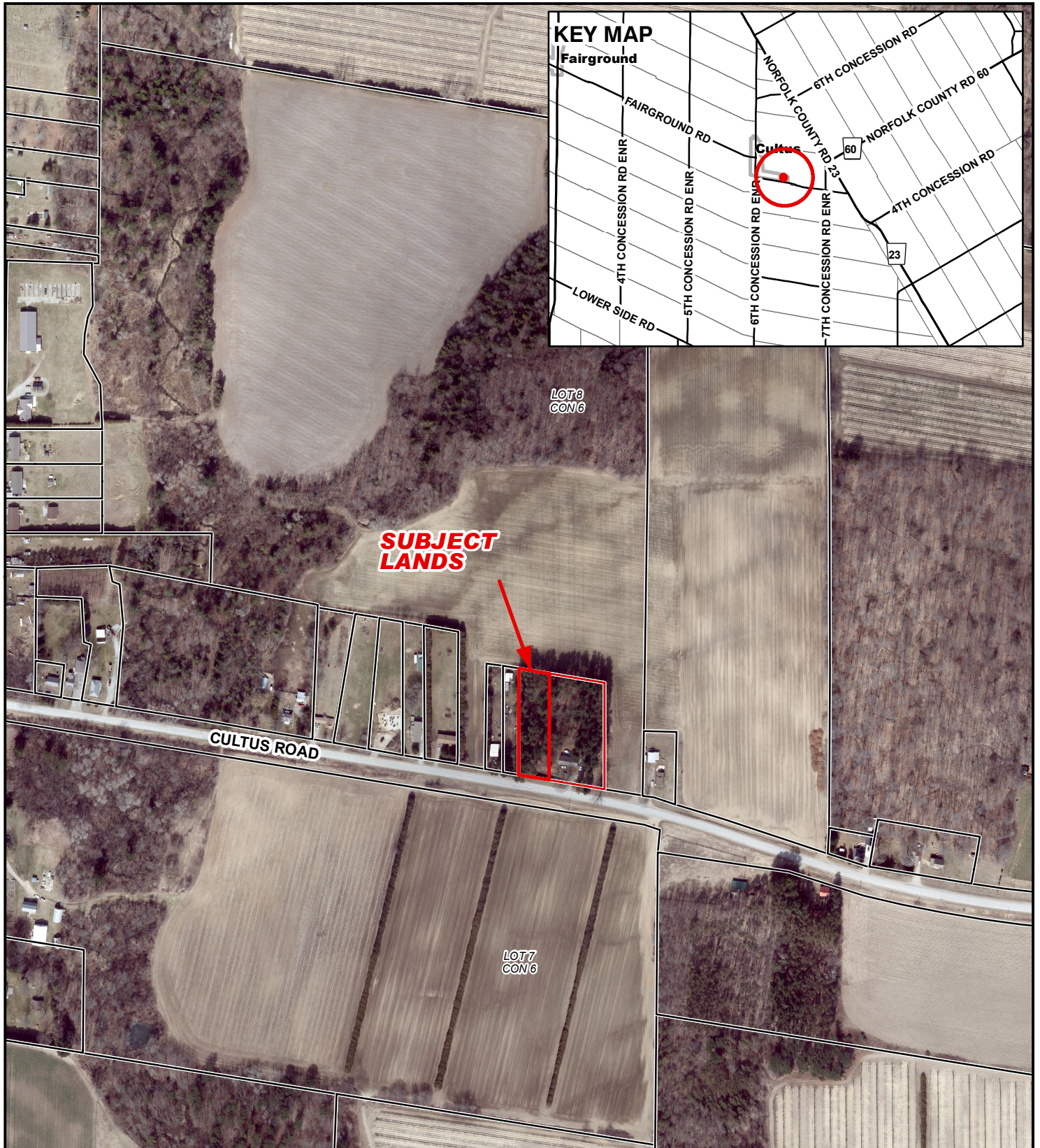
**Table 1.5.1 Significant Wildlife Habitat Exceptions for Ecodistricts within EcoRegion 7E**

| EcoDistrict | Wildlife Habitat and Species                                                                                                                                                                        | Candidate SWH          |                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Confirmed SWH                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|-------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|---------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|             |                                                                                                                                                                                                     | Ecosites               | Habitat Description | Habitat Criteria and Information                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Defining Criteria                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| 7E-2        | <b>Bat Migratory Stopover Area</b><br><br>Rationale:<br>Stopover areas for long distance migrant bats are important during fall migration.<br><br>Hoary Bat<br>Eastern Red Bat<br>Silver-haired Bat | No specific ELC types. |                     | <ul style="list-style-type: none"> <li>Long distance migratory bats typically migrate during late summer and early fall from summer breeding habitats throughout Ontario to southern wintering areas. Their annual fall migration may concentrate these species of bats at stopover areas.</li> <li>This is the only known bat migratory stopover habitats based on current information.</li> </ul> <u>Information Sources</u> <ul style="list-style-type: none"> <li>OMNRF for possible locations and contact for local experts</li> <li>University of Waterloo, Biology Department</li> </ul> | <ul style="list-style-type: none"> <li>Long Point (42°35'N, 80°30'E, to 42°33'N, 80°03'E) has been identified as a significant stop-over habitat for fall migrating Silver-haired Bats, due to significant increases in abundance, activity and feeding that was documented during fall migration <sup>CCXV</sup>.</li> <li>The confirmation criteria and habitat areas for this SWH are still being determined.</li> <li>SWH MIST <sup>CXLIX</sup> Index #38</li> </ul> |

Not in specified coordinates

Not present

|  |  |  |  |  |                                                                  |
|--|--|--|--|--|------------------------------------------------------------------|
|  |  |  |  |  | provides<br>development<br>effects and<br>mitigation<br>measures |
|--|--|--|--|--|------------------------------------------------------------------|

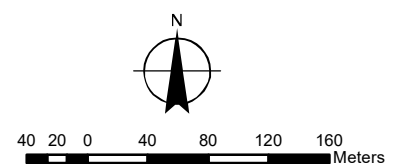


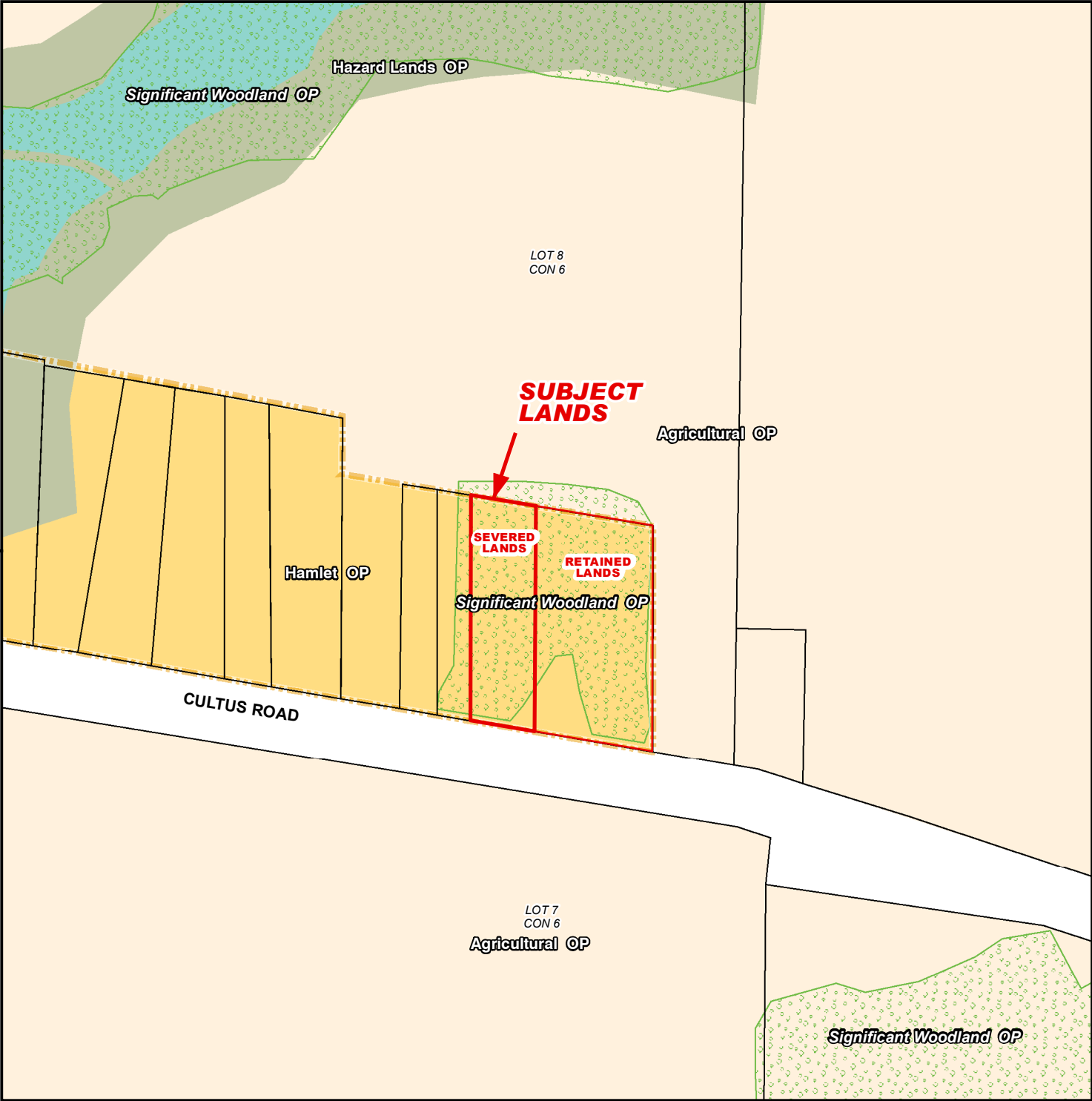
**Legend**

- Subject Lands
- Lands Owned

2020 Air Photo

2021-11-03





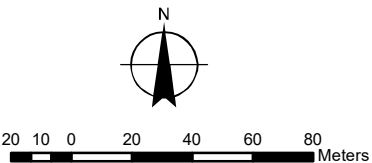
**Legend**

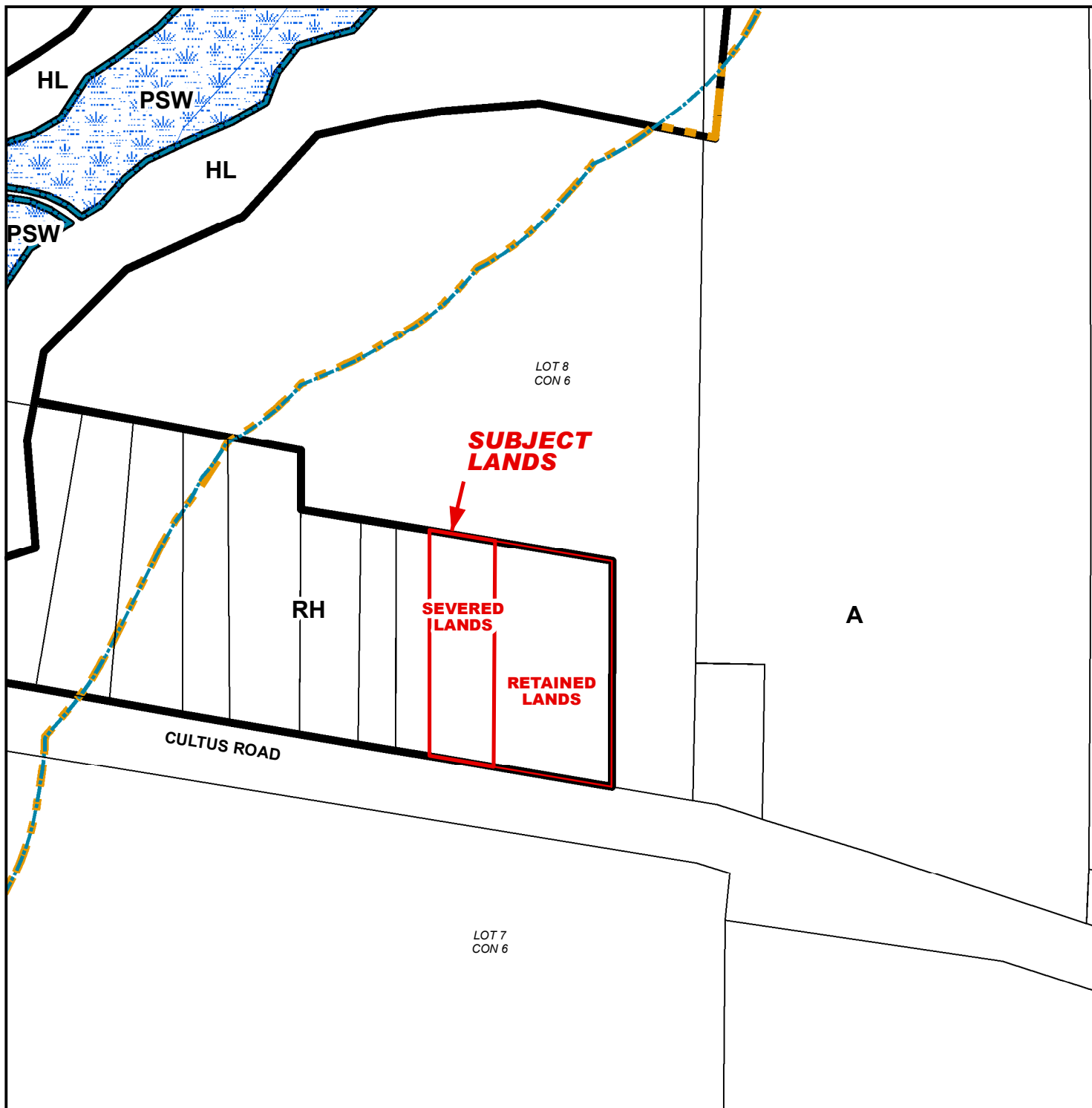
- Subject Lands
- Lands Owned

**Official Plan Designations**

- Agricultural
- Hazard Lands
- Provincially Significant Wetland
- Hamlet
- Hamlet Area Boundary
- Significant Woodland

2021-11-03





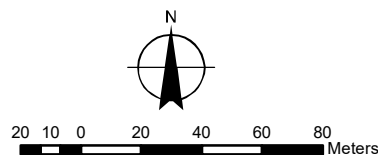
**LEGEND**

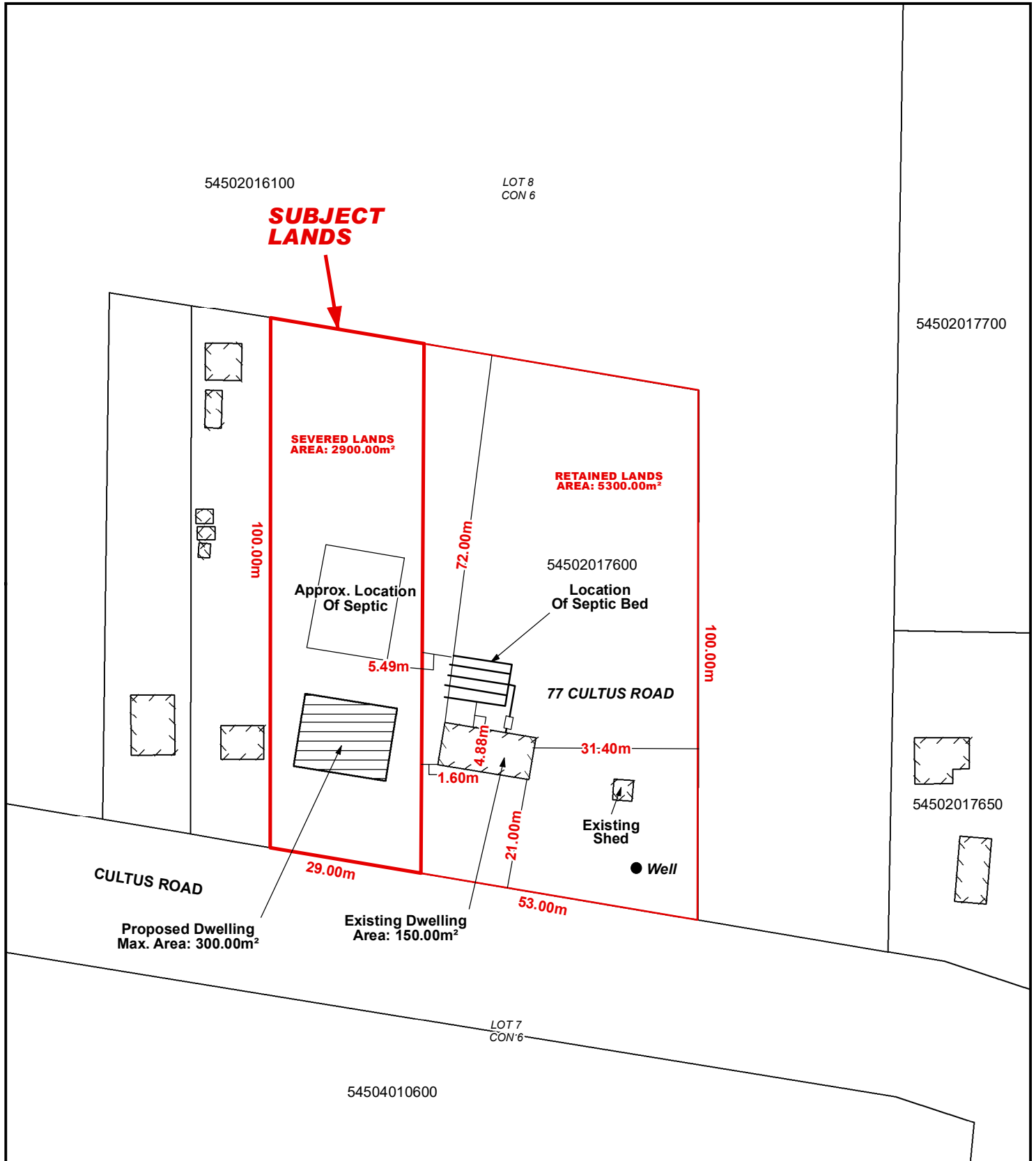
- Subject Lands
- Lands Owned
- Adjacent Lands
- Wetland
- LPRCA Generic RegLines

**ZONING BY-LAW 1-Z-2014**

- (H) - Holding
- A - Agricultural Zone
- RH - Hamlet Residential Zone
- HL - Hazard Land Zone
- PSW - Provincially Significant Wetland Zone

2021-11-03

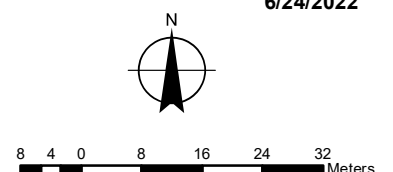




**Legend**

- Subject Lands
- Lands Owned

6/24/2022



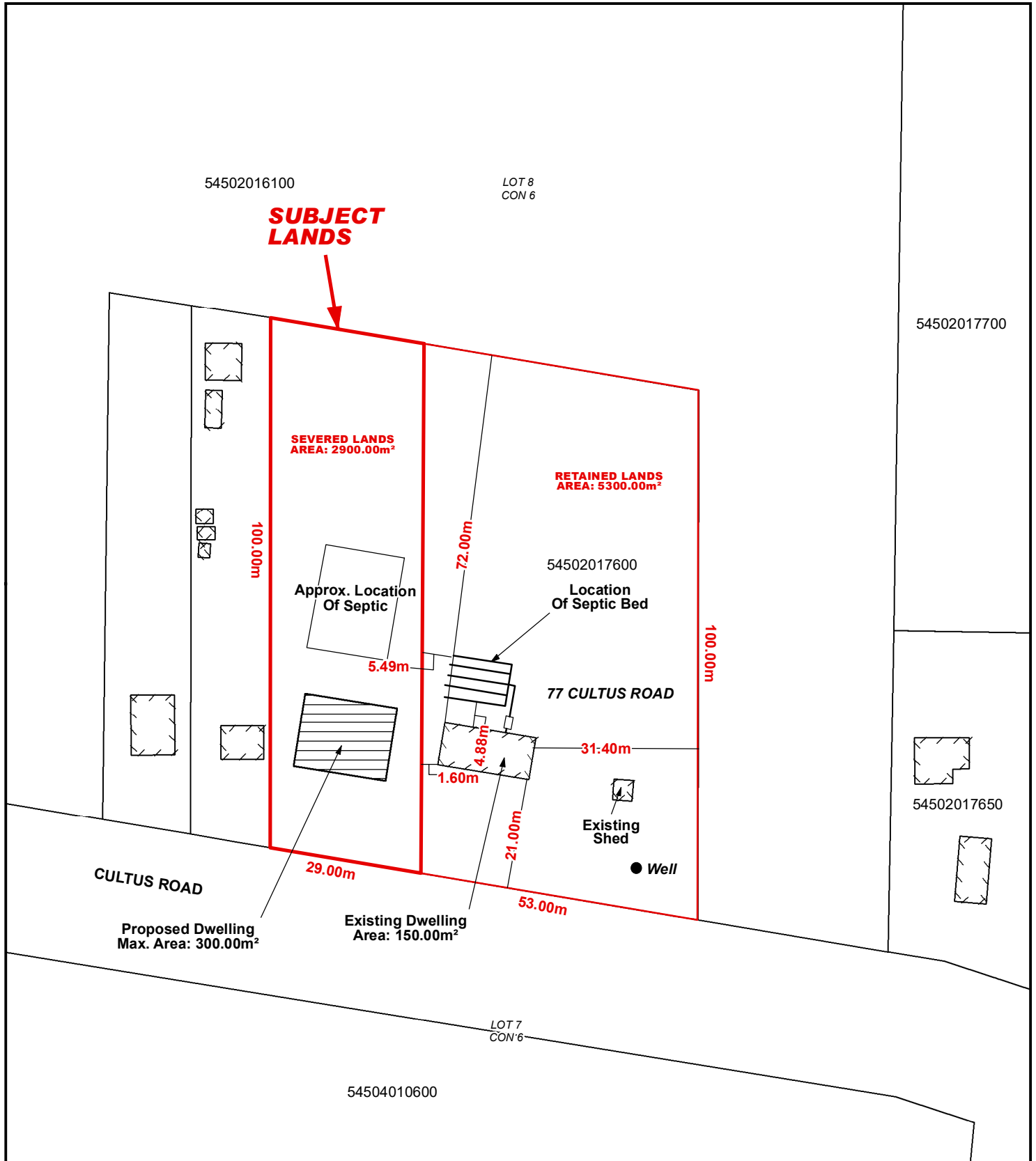
# LOCATION OF LANDS AFFECTED

## CONCEPTUAL PLAN

Geographic Township of HOUGHTON

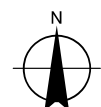
BNPL2021138

ANPL2021333



### Legend

- Subject Lands
- Lands Owned



8.5 4.25 0 8.5 17 25.5 34 Meters