



# ***Romney Wind Energy Centre*** **Natural Heritage Environmental** **Impact Study Report**

Prepared for:  
DNV-GL  
Suite 100, 4100 Rue Molson  
Montreal, Canada  
H1Y 3N1

Project No. 1736C | June 2017



**NATURAL RESOURCE SOLUTIONS INC.**

Aquatic, Terrestrial and Wetland Biologists

***Romney Wind Energy Centre***  
**Natural Heritage Environmental Impact Study Report**

**Project Team:**

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Report submitted on June 30, 2017

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## **Abbreviations**

**EEMP** - Environmental Effects Monitoring Plan

**EIS** - Environmental Impact Study

**EOS** – Evaluation of Significance

**LTVCA** - Lower Thames Valley Conservation Authority

**MNRF** – Ministry of Natural Resources and Forestry

**MOECC** - Ministry of the Environment and Climate Change

**NHA** - Natural Heritage Assessment

**NRSI** - Natural Resource Solutions Inc.

**O.Reg.** - Ontario Regulation

**O&M** - Operations and Maintenance

**OMNR** – Ontario Ministry of Natural Resources

**PCC** - Point of Common Coupling

**REA** - Renewable Energy Approval

**REA Regulation** - Ontario Regulation 359/09 – Renewable Energy Approvals under  
Part V.0.1 of the Act

**SWH** - Significant Wildlife Habitat

**The Proponent** - Romney Energy Centre Limited Partnership

**The Project** - Romney Wind Energy Centre

**UTM** - Universal Transverse Mercator

## 1.0 Project Description

Natural Resource Solutions Inc. (NRSI) was retained in April 2016 by DNV-GL, on behalf of Romney Energy Centre Limited Partnership (the “Proponent”), to conduct a Natural Heritage Assessment (NHA) in accordance with the Renewable Energy Approval (REA) Regulation, Ontario Regulation (O. Reg.) 359/09. This assessment includes a records review, site investigation, evaluation of significance, and environmental impact study of any potentially significant natural features or wildlife habitats at a proposed wind energy generating facility.

The Proponent is proposing to develop the Romney Wind Energy Centre (the “Project”). This Project, with a total nameplate capacity of up to 60 megawatts (MW), is considered to be a Class 4 wind facility. A total of 18 wind turbine locations are being permitted.

The Romney Wind Energy Centre is located in southwestern Ontario, Town of Lakeshore and the Municipality of Chatham Kent, Ontario. More specifically, the Project is located south of Highway 401, and extends along Richardson Side Road and Wheatley Road near the community of Wheatley, ON. The Project is located entirely within Ecoregion 7E (MNRF 2016).

Project components will be installed primarily on privately-owned agricultural lots within this area. It is anticipated that the electrical collector lines will be partially located within public road allowances. It is planned to connect to the existing Hydro One Networks Inc. (HONI) 230 kV transmission line located within the Town of Lakeshore, close to Richardson Side Road. A small section of transmission line (less than 1km) is proposed for the Project, to be built by HONI from the Point of Common Coupling (PCC) to the Point of Interconnect (POI).

According to O. Reg. 359/09, as amended, and as per the Natural Heritage Assessment Guide for Renewable Energy Projects (OMNR 2012), the Project Location is defined as “...a part of land and all or part of any building or structure in, on or over which a person is engaging in or proposes to engage in the project and any air space in which a person is engaging in or proposes to engage in the project”. As described therein, the Project Location boundary is the outer limit of where site preparation and construction activities

will occur (i.e., disturbance areas described below) and where permanent infrastructure will be located, including the air space occupied by turbine blades.

In accordance with Section 38 of the REA Regulation, O.Reg. 359/09, NRSI has prepared an Environmental Impact Study (EIS) that identifies and assesses negative environmental effects on significant natural features located in and within 120m of the Project Location. This includes areas within 120m of proposed wind turbines, measured from blade tip, as well as within 120m of any areas that may be used as temporary lay-down areas, crane pads, access roads, PCC, Operations and Maintenance (O&M) building, meteorological tower, substation and electrical collector lines. Junction boxes may also be installed below or above ground where more than one circuit must be connected together. See Map 1 for an illustration of the Project Location and natural features.

## 2.0 REA Requirements

Ontario Regulation 359/09 – *Renewable Energy Approvals* under *Part V.0.1 of the Act* (herein referred to as the REA Regulation), made under the *Environmental Protection Act*, identifies the requirements for the development of renewable energy projects in Ontario. In accordance with the REA Regulation, the Project is classified as a Class 4 wind facility and is required to obtain a REA.

Section 38 of the REA Regulation specifies that no development activities shall be permitted in or within 120m of a significant natural feature unless an EIS report is prepared in accordance with any procedures established by the Ministry of Natural Resources and Forestry (MNRF). As per Subsection 2, this report should:

1. *Identify and assess any negative environmental effects of the project on a natural feature, provincial park or conservation reserve,*
2. *Identify mitigation measures in respect of any negative environmental effects mentioned in the subclause above,*
3. *Describe how the environmental effects monitoring plan...addresses any negative environmental effects mentioned in subclause 1, and*
4. *Describe how the construction plan report...addresses any negative environmental effects mentioned in subclause 1.*

This NHA report has been organized and prepared to satisfy the requirements of the EIS as outlined in the REA Regulation.

Additional information relating to the development of this Project, including detailed descriptions of the construction activities, has been provided in the *Construction Plan Report* (DNV-GL 2017a). This document provides construction details and potential environmental impacts associated with the construction of the Project. Additional information relating to the operation and decommissioning of this Project has been provided in the *Design and Operations Report* (DNV-GL 2017b) and *Decommissioning Plan Report* (DNV-GL 2017c). A summary of the potential environmental effects, proposed mitigation measures, and monitoring programs that will be implemented during the construction and operational phases of the Project is also provided in Table 5-2 of the *Construction Plan Report* (DNV-GL 2017a) and Table 6-2 of the *Design and Operations Report* (DNV-GL 2017b) to satisfy the requirements as outlined in the REA Regulation.



Section 23.1 of the REA Regulation states that “a person who proposes to engage in a renewable energy project in respect of a Class 3, 4 or 5 wind facility shall prepare an environmental effects monitoring plan in respect of birds and bats. O. Reg. 521/10, s. 14.” As per Subsection 2, this Environmental Effects Monitoring Plan (EEMP) should be prepared in accordance with the following MNRF publications:

1. “*Birds and Bird Habitats: Guidelines for Wind Power Projects*” dated October 2010, as amended from time to time and available from the Ministry of Natural Resources.
2. “*Bats and Bat Habitats: Guidelines for Wind Power Projects*” dated March 2010, as amended from time to time and available from the Ministry of Natural Resources.

Updates to the above MNRF publications were made in December 2011, and July 2011 respectively.

A separate Bird and Bat EEMP report will be prepared to satisfy the requirements as outlined in the REA Regulation. The Bird and Bat EEMP will be completed in a manner that fully implements monitoring, methodologies, thresholds and proposed mitigation measures as outlined in the most current guidelines released by the MNRF with respect to Birds and Bats as outlined in Section 23.1 of O. Reg. 359/09 or uses best practices approved by the MNRF for other similar sites. The Bird and Bat EEMP for the Project will be provided to the MNRF for review prior to the submission of an application to the Ministry of the Environment and Climate Change (MOECC) for a REA, and will require approval from the MNRF before a full Project approval is issued.

### 3.0 Summary of Evaluation of Significance

In accordance with the REA Regulation, NRSI biologists have completed a detailed evaluation of significance of all potentially significant natural features or wildlife habitats in or within 120m of the Project Location. The results of these determinations have been discussed in detail within the *Romney Wind Energy Centre: Natural Heritage Evaluation of Significance Report* (NRSI 2017a), and are summarized in Table 1. This table summary includes the results of the evaluation of significance for the woodlands, wetlands, and significant wildlife habitats (SWHs), including species of conservation concern, and whether each of these features or wildlife habitats require detailed consideration as part of this EIS. All significant natural features (woodlands and wetlands) are shown on Maps 3-1 to 3-5. The location of SWHs are shown on Maps 4-1 to 4-5 through 6-1 to 6-6. Generalized SWHs are shown on Maps 7-1 to 7-5.

**Table 1. Summary of Candidate Significant Natural Features and Wildlife Habitats within the Romney Wind Energy Centre**

| Feature ID       | Feature Within Project Location (Y/N) | Feature Within 120m of Project Location (Y/N) | Feature Individually Delineated* (Y/N) | Significant/EIS Required (Y/N)  |
|------------------|---------------------------------------|---|--|---------------------------------|
| <b>Woodlands</b> |                                       |   |  |                                 |
| WOD-001          | No                                    | Yes   | Yes                                    | Yes                             |
| WOD-002          | No                                    | Yes   | Yes                                    | Yes                             |
| WOD-003          | No                                    | Yes   | Yes                                    | Yes                             |
| WOD-004          | No                                    | Yes   | Yes                                    | Yes                             |
| WOD-005          | No                                    | Yes   | Yes                                    | Yes                             |
| WOD-006          | No                                    | Yes   | Yes                                    | Yes                             |
| WOD-007          | No                                    | Yes   | Yes                                    | Yes                             |
| WOD-008          | No                                    | Yes   | Yes                                    | No                              |
| WOD-009          | No                                    | Yes   | Yes                                    | Yes                             |
| WOD-011          | No                                    | Yes   | Yes                                    | Yes                             |
| WOD-012          | No                                    | Yes   | Yes                                    | No                              |
| WOD-013          | No                                    | Yes   | Yes                                    | Yes                             |
| WOD-014          | No                                    | Yes   | Yes                                    | Yes                             |
| <b>Wetlands</b>  |                                       |   |  |                                 |
| WET-001          | No                                    | Yes   | Yes                                    | Yes<br>(Treated as Significant) |
| WET-002          | No                                    | Yes   | Yes                                    | Yes<br>(Treated as Significant) |
| WET-003          | No                                    | Yes   | Yes                                    | Yes<br>(Treated as Significant) |
| WET-004          | No                                    | Yes   | Yes                                    | Yes<br>(Treated as Significant) |
| WET-005          | No                                    | Yes   | Yes                                    | Yes<br>(Treated as Significant) |

**Table 1. Summary of Candidate Significant Natural Features and Wildlife Habitats within the Romney Wind Energy Centre**

| Feature ID   | Feature Within Project Location (Y/N) | Feature Within 120m of Project Location (Y/N) | Feature Individually Delineated* (Y/N) | Significant/EIS Required (Y/N)  |
|--|---------------------------------------|---|--|---------------------------------|
| WET-006  | No                                    | Yes   | Yes                                    | Yes<br>(Treated as Significant) |
| WET-008  | No                                    | Yes   | Yes                                    | Yes<br>(Treated as Significant) |
| WET-009  | No                                    | Yes   | Yes                                    | Yes<br>(Treated as Significant) |
| <b>Individually Delineated Candidate Significant Wildlife Habitats</b> |                                       |   |  |                                 |
| WST-001  | Yes                                   | Yes   | Yes                                    | No                              |
| WST-002  | Yes                                   | Yes   | Yes                                    | No                              |
| WST-003  | Yes                                   | Yes   | Yes                                    | No                              |
| WST-004  | Yes                                   | Yes   | Yes                                    | No                              |
| WST-005  | Yes                                   | Yes   | Yes                                    | No                              |
| WST-006  | Yes                                   | Yes   | Yes                                    | No                              |
| WST-007  | Yes                                   | Yes   | Yes                                    | No                              |
| WST-008  | Yes                                   | Yes   | Yes                                    | No                              |
| WST-009  | Yes                                   | Yes   | Yes                                    | No                              |
| WST-010  | Yes                                   | Yes   | Yes                                    | No                              |
| WST-011  | Yes                                   | Yes   | Yes                                    | No                              |
| WST-012  | Yes                                   | Yes   | Yes                                    | No                              |
| WST-013  | Yes                                   | Yes   | Yes                                    | No                              |
| WST-014  | Yes                                   | Yes   | Yes                                    | No                              |
| WST-015  | Yes                                   | Yes   | Yes                                    | No                              |
| WST-016  | Yes                                   | Yes   | Yes                                    | No                              |
| WST-017  | Yes                                   | Yes   | Yes                                    | No                              |
| WST-018  | Yes                                   | Yes   | Yes                                    | No                              |
| WST-019  | Yes                                   | Yes   | Yes                                    | No                              |
| WST-020  | Yes                                   | Yes   | Yes                                    | No                              |
| WST-021  | Yes                                   | Yes   | Yes                                    | No                              |
| WST-022  | Yes                                   | Yes   | Yes                                    | No                              |
| WST-023  | Yes                                   | Yes   | Yes                                    | No                              |
| WST-024  | Yes                                   | Yes   | Yes                                    | No                              |
| WST-025  | Yes                                   | Yes   | Yes                                    | No                              |
| WST-026  | Yes                                   | Yes   | Yes                                    | No                              |
| WST-027  | Yes                                   | Yes   | Yes                                    | No                              |
| WST-028  | Yes                                   | Yes   | Yes                                    | No                              |
| WST-029  | Yes                                   | Yes   | Yes                                    | No                              |
| BMA-001  | No                                    | Yes   | Yes                                    | Yes<br>(Treated as Significant) |
| BMA-002  | No                                    | Yes   | Yes                                    | Yes<br>(Treated as Significant) |
| BMA-003  | No                                    | Yes   | Yes                                    | Yes<br>(Treated as Significant) |
| CBT-001  | No                                    | Yes   | Yes                                    | Yes<br>(Treated as Significant) |
| CBT-002  | No                                    | Yes   | Yes                                    | Yes<br>(Treated as Significant) |
| CBT-003  | No                                    | Yes   | Yes                                    | Yes<br>(Treated as Significant) |
| LMS-001  | No                                    | Yes   | Yes                                    | Yes<br>(Treated as Significant) |

**Table 1. Summary of Candidate Significant Natural Features and Wildlife Habitats within the Romney Wind Energy Centre**

| Feature ID | Feature Within Project Location (Y/N) | Feature Within 120m of Project Location (Y/N) | Feature Individually Delineated* (Y/N) | Significant/EIS Required (Y/N)    |
|------------|---------------------------------------|---|--|-----------------------------------|
| LMS-002    | No                                    | Yes   | Yes                                    | Yes<br>(Treated as Significant)   |
| ORV-001    | No                                    | Yes   | Yes                                    | Yes                               |
| AWO-001    | No                                    | Yes   | Yes                                    | Yes<br>(Treated as Significant)   |
| EWP-001    | No                                    | Yes   | Yes                                    | Yes**<br>(Treated as Significant) |
| EWP-002    | No                                    | Yes   | Yes                                    | Yes<br>(Treated as Significant)   |
| EWP-003    | No                                    | Yes   | Yes                                    | Yes**<br>(Treated as Significant) |
| EWP-004    | No                                    | Yes   | Yes                                    | Yes**<br>(Treated as Significant) |
| EWP-005    | No                                    | Yes   | Yes                                    | Yes**<br>(Treated as Significant) |
| BAL-001    | Yes                                   | Yes   | Yes                                    | Yes                               |
| BAL-002    | Possible <sup>1</sup>                 | Possible <sup>1</sup>                         | Yes                                    | Yes**<br>(Treated as Significant) |
| WTH-001    | No                                    | Yes   | Yes                                    | Yes<br>(Treated as Significant)   |
| SHS-001    | No                                    | Yes   | Yes                                    | No                                |
| SHS-002    | No                                    | Yes   | Yes                                    | Yes<br>(Treated as Significant)   |
| SHS-003    | No                                    | Yes   | Yes                                    | No                                |
| SHS-004    | No                                    | Yes   | Yes                                    | Yes<br>(Treated as Significant)   |
| SHS-005    | No                                    | Yes   | Yes                                    | Yes<br>(Treated as Significant)   |
| SHS-006    | No                                    | Yes   | Yes                                    | Yes<br>(Treated as Significant)   |
| SHS-007    | No                                    | Yes   | Yes                                    | No                                |
| SQS-001    | No                                    | Yes   | Yes                                    | No                                |
| SQS-002    | No                                    | Yes   | Yes                                    | Yes<br>(Treated as Significant)   |
| SQS-003    | No                                    | Yes   | Yes                                    | No                                |
| SQS-004    | No                                    | Yes   | Yes                                    | Yes<br>(Treated as Significant)   |
| SQS-005    | No                                    | Yes   | Yes                                    | Yes<br>(Treated as Significant)   |
| SQS-006    | No                                    | Yes   | Yes                                    | Yes<br>(Treated as Significant)   |
| SQS-007    | No                                    | Yes   | Yes                                    | No                                |
| CSE-001    | No                                    | Yes   | Yes                                    | Yes**<br>(Treated as Significant) |
| CSE-002    | No                                    | Yes   | Yes                                    | Yes<br>(Treated as Significant)   |
| CSE-003    | No                                    | Yes   | Yes                                    | Yes**<br>(Treated as Significant) |
| CSE-004    | No                                    | Yes   | Yes                                    | Yes<br>(Treated as Significant)   |

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| Feature ID | Feature Within Project Location (Y/N) | Feature Within 120m of Project Location (Y/N) | Feature Individually Delineated* (Y/N) | Significant/EIS Required (Y/N)    |
|------------|---------------------------------------|---|--|-----------------------------------|
| CSE-005    | No                                    | Yes   | Yes                                    | Yes<br>(Treated as Significant)   |
| CSE-006    | No                                    | Yes   | Yes                                    | Yes<br>(Treated as Significant)   |
| CSE-007    | No                                    | Yes   | Yes                                    | Yes**<br>(Treated as Significant) |
| SHH-001    | No                                    | Yes   | Yes                                    | No                                |
| SHH-002    | No                                    | Yes   | Yes                                    | Yes<br>(Treated as Significant)   |
| SHH-003    | No                                    | Yes   | Yes                                    | No                                |
| SHH-004    | No                                    | Yes   | Yes                                    | Yes                               |
| SHH-005    | No                                    | Yes   | Yes                                    | Yes<br>(Treated as Significant)   |
| SHH-006    | No                                    | Yes   | Yes                                    | Yes<br>(Treated as Significant)   |
| SHH-007    | No                                    | Yes   | Yes                                    | No                                |
| PAS-001    | No                                    | Yes   | Yes                                    | Yes**<br>(Treated as Significant) |
| PAS-002    | No                                    | Yes   | Yes                                    | Yes<br>(Treated as Significant)   |
| PAS-003    | No                                    | Yes   | Yes                                    | Yes**<br>(Treated as Significant) |
| PAS-004    | No                                    | Yes   | Yes                                    | Yes<br>(Treated as Significant)   |
| PAS-005    | No                                    | Yes   | Yes                                    | Yes<br>(Treated as Significant)   |
| PAS-006    | No                                    | Yes   | Yes                                    | Yes<br>(Treated as Significant)   |
| PAS-007    | No                                    | Yes   | Yes                                    | Yes**<br>(Treated as Significant) |
| BGU-001    | No                                    | Yes   | Yes                                    | No                                |
| BGU-002    | No                                    | Yes   | Yes                                    | Yes<br>(Treated as Significant)   |
| BGU-003    | No                                    | Yes   | Yes                                    | No                                |
| BGU-004    | No                                    | Yes   | Yes                                    | Yes<br>(Treated as Significant)   |
| BGU-005    | No                                    | Yes   | Yes                                    | Yes<br>(Treated as Significant)   |
| BGU-006    | No                                    | Yes   | Yes                                    | Yes<br>(Treated as Significant)   |
| BGU-007    | No                                    | Yes   | Yes                                    | No                                |
| HLS-001    | No                                    | Yes   | Yes                                    | Yes**<br>(Treated as Significant) |
| HLS-002    | No                                    | Yes   | Yes                                    | Yes<br>(Treated as Significant)   |
| HLS-003    | No                                    | Yes   | Yes                                    | Yes**<br>(Treated as Significant) |
| HLS-004    | No                                    | Yes   | Yes                                    | Yes<br>(Treated as Significant)   |
| HLS-005    | No                                    | Yes   | Yes                                    | Yes<br>(Treated as Significant)   |

**Table 1. Summary of Candidate Significant Natural Features and Wildlife Habitats within the Romney Wind Energy Centre**

| Feature ID   | Feature Within Project Location (Y/N) | Feature Within 120m of Project Location (Y/N) | Feature Individually Delineated* (Y/N) | Significant/EIS Required (Y/N)    |
|--|---------------------------------------|---|--|-----------------------------------|
| HLS-006  | No                                    | Yes   | Yes                                    | Yes<br>(Treated as Significant)   |
| SHO-001  | No                                    | Yes   | Yes                                    | Yes**<br>(Treated as Significant) |
| SHO-002  | No                                    | Yes   | Yes                                    | Yes<br>(Treated as Significant)   |
| SHO-003  | No                                    | Yes   | Yes                                    | Yes**<br>(Treated as Significant) |
| SHO-004  | No                                    | Yes   | Yes                                    | Yes<br>(Treated as Significant)   |
| SHO-005  | No                                    | Yes   | Yes                                    | Yes<br>(Treated as Significant)   |
| SHO-006  | No                                    | Yes   | Yes                                    | Yes<br>(Treated as Significant)   |
| SHO-007  | No                                    | Yes   | Yes                                    | No                                |
| CPR-001  | No                                    | Yes   | Yes                                    | Yes<br>(Treated as Significant)   |
| <b>Generalized Candidate Significant Wildlife Habitats</b> |                                       |   |  |                                   |
| Raptor Wintering Areas                                     | No                                    | Yes   | No                                     | Yes                               |
| Bat Maternity Colonies                                     | No                                    | Yes   | No                                     | Yes                               |
| Turtle Wintering Areas                                     | No                                    | Yes   | No                                     | Yes                               |
| Colonially – Nesting Bird Breeding Habitat (Tree/Shrub)    | No                                    | Yes   | No                                     | Yes                               |
| Colonially – Nesting Bird Breeding Habitat (Ground)        | No                                    | Yes   | No                                     | Yes                               |
| Migratory Butterfly Stopover Area                          | No                                    | Yes   | No                                     | Yes                               |
| Landbird Migratory Stopover Areas                          | No                                    | Yes   | No                                     | Yes                               |
| Deer Winter Congregation Area                              | No                                    | Yes   | No                                     | Yes                               |
| Other Rare Vegetation Communities                          | No                                    | Yes   | No                                     | Yes                               |
| Waterfowl Nesting Area                                     | No                                    | Yes   | No                                     | Yes                               |
| Amphibian Breeding Habitat (Woodland)                      | No                                    | Yes   | No                                     | Yes                               |
| Open Country Bird Breeding Habitat                         | No                                    | Yes   | No                                     | Yes                               |
| Terrestrial Crayfish                                       | No                                    | Yes   | No                                     | Yes                               |
| Eastern Wood-Pewee   | No                                    | Yes   | No                                     | Yes                               |
| Wood Thrush  | No                                    | Yes   | No                                     | Yes                               |
| Red-headed Woodpecker                                      | No                                    | Yes   | No                                     | Yes                               |
| Slightly Hirsute Sedge                                     | No                                    | Yes   | No                                     | Yes                               |
| Squarrose Sedge  | No                                    | Yes   | No                                     | Yes                               |
| Cattail Sedge  | No                                    | Yes   | No                                     | Yes                               |
| Shellbark Hickory  | No                                    | Yes   | No                                     | Yes                               |
| Pumpkin Ash  | No                                    | Yes   | No                                     | Yes                               |
| Black Gum  | No                                    | Yes   | No                                     | Yes                               |
| Halberd-leaved Smartweed                                   | No                                    | Yes   | No                                     | Yes                               |
| Shumard Oak  | No                                    | Yes   | No                                     | Yes                               |
| Climbing Prairie Rose                                      | No                                    | Yes   | No                                     | Yes                               |

**Table 1. Summary of Candidate Significant Natural Features and Wildlife Habitats within the Romney Wind Energy Centre**

| <b>Feature ID</b> | <b>Feature Within Project Location (Y/N)</b> | <b>Feature Within 120m of Project Location (Y/N)</b> | <b>Feature Individually Delineated* (Y/N)</b> | <b>Significant/EIS Required (Y/N)</b> |
|-------------------|--|--|---|---------------------------------------|
| Hackberry Emperor | No   | Yes  | No  | <b>Yes</b>                            |
| Monarch           | No   | Yes  | No  | <b>Yes</b>                            |
| Common Sootywing  | No   | Yes  | No  | <b>Yes</b>                            |

\*All woodlands and wetlands were individually delineated. Candidate SWH was individually delineated as per Table 19 of the NHA Guide (OMNR 2012).

\*\*Pre-construction survey commitment has been made to determine if the candidate significant wildlife habitat is significant or non-significant.

<sup>†</sup>The possible bald eagle nest record is located greater than 120m from the Project Location, but has the potential to overlap with Project Infrastructure if an up to 800m buffer is applied to the habitat, which will be determined by the site investigation and/or evaluation of significance surveys completed as part of pre-construction commitments for this feature.

#### **4.0 Description of the Proposed Undertaking**

In accordance with the REA Regulation, the presence of significant natural features in and within 120m of the Project Location has been reviewed by NRSI biologists. Based on natural features, vegetation communities, and wildlife species present in and within 120m of the Project Location and summarized in the previous section, NRSI biologists have examined the potential for this Project, and associated activities, to impact the surrounding features. NRSI biologists have completed a detailed records review, site investigation, and evaluation of significance of all potentially significant natural features and wildlife habitats in and within 120m of the Project Location in accordance with the NHA Guide for Renewable Energy Projects (OMNR 2012), SWH Technical Guide (OMNR 2000), and the SWH Criteria Schedules for Ecoregion 7E (MNR 2015). NRSI biologists have identified several significant, or treated as significant, natural features and wildlife habitats in and within 120m of the Project Location which require detailed consideration in this EIS. All impacts and associated mitigation measures, monitoring and contingency measures relating to water bodies have been included under separate cover in the *Romney Wind Energy Centre Water Body Report* (NRSI 2017b).

The specific environmental impacts relating to the natural features and wildlife habitats are discussed in detail within the following sections. All identified impacts are discussed in this section assuming no mitigation measures are applied, and therefore are described as a “worst case scenario” for impacts to natural features and wildlife habitats. Recommendations to mitigate identified impacts as well as monitoring of effectiveness of these proposed mitigation measures are discussed in Sections 5.0 and 6.0.

A total of 18 proposed wind turbine locations will be permitted for the Project. The construction phase of the Project will involve the installation of up to 18 of the permitted wind turbine locations, as well as all supporting infrastructure.

The Project will be made up of the following main components:

- Wind turbines;
- Permanent meteorological tower;
- Access roads and crane pads; and
- Electrical collector lines and substation;
- O&M building; and



- Laydown and storage areas (including temporary staging areas).

Junction boxes may also be installed below or above ground where more than one circuit must be connected together. The details of these construction activities and potential negative effects that may be associated with each activity are outlined in Table 2.

The operational phase of the Project will include the operation of up to 18 wind turbines, as well as all associated regular maintenance activities. The potential negative effects of this facility during the operational phase of the Project are summarized in Table 2.

The decommissioning phase of the Project will include the disassembly and removal of the Project infrastructure associated with this Project. The details of this project phase, along with potential negative effects, are provided in Table 2.

**Table 2. Summary of Construction, Operation, and Decommissioning Activities and Potential Negative Environmental Effects Associated With the Project**

| Project Activity                        | Extent of Effect  | Significant Feature(s) Overlapping Project Activity | Significant Feature(s) within 120m of Project Activity  | Potential Negative Effects to Significant Feature or Habitat   |
|---|---|---|---|--|
| <b>Construction</b>                     |   |   |   |  |
| Ancillary Facility Construction         | Three types of supporting facilities may be associated with the Project. These include a substation, meteorological tower, and an O&M building.   | N/A   | N/A   | • N/A  |
| Turbine Foundation and Turbine Erection | <p>A total of 18 proposed turbine locations will be permitted for the Project. The total number of turbines will depend on the nominal turbine power rating of each turbine.</p> <p>As part of the turbine erection, laydown areas and crane pads will be placed around the base of the turbine.</p> <p>The crane pads, measuring approximately 0.5ha, will require the removal of topsoil and subsoil, and crane pad locations will be filled with a varying mixture of granular base material and crushed gravel depending on site-specific conditions. Specialized crane matting solution could also be used.</p> <p>Following the erection of wind turbines, the portions of the crane pad areas not required during the operations phase will be restored to a state similar to pre-existing conditions.</p> <p>It is possible that during excavation for turbine foundations, groundwater or precipitation entering the excavation will</p> | Bird Species of Conservation Concern Habitat        | <ul style="list-style-type: none"> <li>• Woodlands</li> <li>• Wetlands</li> <li>• Bat Maternity Colonies</li> <li>• Colonially-Nesting Bird Breeding Habitats (Tree/Shrubs)</li> <li>• Landbird Migratory Stopover Areas</li> <li>• Other Rare Vegetation Communities</li> <li>• Amphibian Breeding Habitats (Woodland)</li> <li>• Bird Species of Conservation Concern Habitats</li> </ul> | <ul style="list-style-type: none"> <li>• Accidental vegetation removal</li> <li>• Increased erosion, sedimentation, and turbidity</li> <li>• Fugitive dust emission</li> <li>• Changes in soil moisture and compaction</li> <li>• Spills and leaks (oil, gas, etc.), and contamination of nearby natural features</li> <li>• Increase in impervious surfaces</li> <li>• Changes in surface water drainage</li> <li>• Temporary noise, and potential avoidance or disturbance of wildlife species</li> <li>• Increased vegetation species competition through introduction of invasive vegetation species</li> </ul> <p>If dewatering of excavated wind turbine foundations is required:</p> <ul style="list-style-type: none"> <li>• Reduced groundwater discharge</li> <li>• Reduced stream baseflows and upwelling</li> <li>• Increased water temperatures</li> <li>• Reduced water quality (i.e. increased turbidity)</li> <li>• Increased water quantity to receiving</li> </ul> |

**Table 2. Summary of Construction, Operation, and Decommissioning Activities and Potential Negative Environmental Effects Associated With the Project**

| Project Activity         | Extent of Effect  | Significant Feature(s) Overlapping Project Activity | Significant Feature(s) within 120m of Project Activity   | Potential Negative Effects to Significant Feature or Habitat  |
|--------------------------|---|---|--|---|
|                          | <p>require pumping. A measurable change in local groundwater flow levels within the zone of influence (ZOI) has the potential to extend a duration of seven months, with four months of drawdown from dewatering and an additional three months where the groundwater table levels will be recovering to pre-dewatering levels.</p> <p>Relatively minor grading activities are expected to occur throughout the Project Location. Grading is important to ensure crane pads, staging areas, and other construction areas are level.</p>   |   | <ul style="list-style-type: none"> <li>• Plant Species of Conservation Concern Habitats</li> <li>• Generalized Significant Wildlife Habitats</li> </ul>  | <p>area or water body</p>   |
| Access Road Construction | <p>Access roads will be constructed to be up to 12m wide, including side clearance. Areas adjacent to the access road within the larger 20m construction disturbance area may be utilized during the construction phase in order to accommodate cranes, transportation equipment and other construction activities. After construction, these roads may be reduced in size to approximately 5-6m in width, to allow access to turbines and associated infrastructure for maintenance and repairs.</p> <p>Relatively minor grading activities are expected to occur throughout the Project Location. Grading is important to ensure crane pads, staging areas, and other construction areas are level.</p> | Bird Species of Conservation Concern Habitat        | <ul style="list-style-type: none"> <li>• Woodlands</li> <li>• Wetlands</li> <li>• Bat Maternity Colonies</li> <li>• Colonially-Nesting Bird Breeding Habitats (Tree/Shrubs)</li> <li>• Landbird Migratory Stopover Areas</li> <li>• Other Rare Vegetation Communities</li> <li>• Amphibian Breeding</li> </ul> | <ul style="list-style-type: none"> <li>• Accidental vegetation removal</li> <li>• Reduced infiltration</li> <li>• Increased erosion, sedimentation, and turbidity</li> <li>• Fugitive dust emission</li> <li>• Spills and leaks (oil, gas, etc.), and contamination of nearby natural features</li> <li>• Changes in surface water drainage</li> <li>• Changes in soil moisture and compaction</li> <li>• Increase in impervious surfaces and increased surface run-off</li> <li>• Loss of wildlife habitat</li> <li>• Barriers to wildlife movement</li> <li>• Increased wildlife mortality due to vehicle collisions</li> <li>• Disturbance of wildlife species</li> <li>• Increased vegetation species competition through introduction of invasive</li> </ul> |

**Table 2. Summary of Construction, Operation, and Decommissioning Activities and Potential Negative Environmental Effects Associated With the Project**

| Project Activity   | Extent of Effect  | Significant Feature(s) Overlapping Project Activity | Significant Feature(s) within 120m of Project Activity   | Potential Negative Effects to Significant Feature or Habitat  |
|--|---|---|--|---|
|  |   |   | Habitats (Woodland) <ul style="list-style-type: none"> <li>• Bird Species of Conservation Concern Habitats</li> <li>• Plant Species of Conservation Concern Habitats</li> <li>• Generalized Significant Wildlife Habitats</li> </ul>   | vegetation species  |
| Electrical Collector Line Installation (Overhead or Underground) | <p>Underground and overhead electrical collector lines are proposed for this Project.</p> <p>Most of the electrical collector lines within the Project Location will be underground and installed by way of open cut trenches or plowing.</p> <p>Horizontal directional drilling will also be required within the Project. Directional drilling will be used in some locations to extend electrical collector lines beneath natural features, wildlife habitats, or water bodies without direct impact. Although the exact locations of directional drilling are currently unknown, impacts associated with</p> | Bird Species of Conservation Concern Habitat        | <ul style="list-style-type: none"> <li>• Woodlands</li> <li>• Wetlands</li> <li>• Bat Maternity Colonies</li> <li>• Colonially-Nesting Bird Breeding Habitats (Tree/Shrubs)</li> <li>• Landbird Migratory Stopover Areas</li> <li>• Other Rare Vegetation Communities</li> </ul> | <ul style="list-style-type: none"> <li>• Accidental vegetation removal</li> <li>• Increased erosion, sedimentation, and turbidity</li> <li>• Fugitive dust emission</li> <li>• Changes in soil moisture and compaction</li> <li>• Disturbance of wildlife species</li> <li>• Spills and leaks (oil, gas, etc.), and contamination of nearby natural features</li> <li>• ‘Frac-out’ (the escape of drilling mud and/or fluids into the environment as a result of a spill, drilling tunnel collapse or rupture of mud to the surface due to excessive pressure from an obstruction within the borehole) into significant natural features and/or wildlife habitats where directional drilling is proposed</li> </ul> |

**Table 2. Summary of Construction, Operation, and Decommissioning Activities and Potential Negative Environmental Effects Associated With the Project**

| Project Activity                    | Extent of Effect  | Significant Feature(s) Overlapping Project Activity | Significant Feature(s) within 120m of Project Activity   | Potential Negative Effects to Significant Feature or Habitat  |
|-------------------------------------|---|---|--|---|
|                                     | <p>this construction activity have been considered as part of this EIS.</p> <p>Overhead electrical collector lines may also be required within the Project. Overhead electrical collector lines will be used in some locations to extend electrical collector lines above natural features, wildlife habitats, or water bodies without direct impact. Although the exact locations of overhead electrical collector lines are currently unknown, the potential impacts associated with both underground and overhead electrical collector lines have been considered throughout this EIS.</p> <p>Where possible, underground and overhead electrical collector lines will be installed within the access road construction disturbance area and/or will follow municipal road allowances in order to minimize the area of disturbed land.</p> |   | <ul style="list-style-type: none"> <li>• Amphibian Breeding Habitats (Woodland)</li> <li>• Bird Species of Conservation Concern Habitats</li> <li>• Plant Species of Conservation Concern Habitats</li> <li>• Generalized Significant Wildlife Habitats</li> </ul> | <ul style="list-style-type: none"> <li>• Reduced water quality (i.e. increased turbidity)</li> <li>• Reduced infiltration</li> <li>• Reduced groundwater discharge</li> <li>• Increased vegetation species competition through introduction of invasive vegetation species</li> <li>• Removal of vegetation within the existing municipal road right-of-way</li> </ul> <p>If dewatering of excavated trenches for underground electrical collector lines is required:</p> <ul style="list-style-type: none"> <li>• Reduced groundwater discharge</li> <li>• Reduced stream baseflows and upwelling</li> <li>• Increased water temperatures</li> <li>• Reduced water quality (i.e. increased turbidity)</li> <li>• Increased water quantity to receiving area or water body</li> </ul> |
| Temporary Construction Staging Area | <p>A temporary construction staging area will be located within the Project Location and will be approximately 8ha in size.</p> <p>Topsoil and subsoil will be stripped and stockpiled on site and the construction staging areas will be constructed of compacted surface material suitable for vehicular traffic and equipment/component storage. The depth of the graveled areas will</p>  | N/A   | N/A  | N/A   |

**Table 2. Summary of Construction, Operation, and Decommissioning Activities and Potential Negative Environmental Effects Associated With the Project**

| Project Activity            | Extent of Effect   | Significant Feature(s) Overlapping Project Activity | Significant Feature(s) within 120m of Project Activity  | Potential Negative Effects to Significant Feature or Habitat   |
|-----------------------------|--|---|---|--|
|                             | <p>vary and will be dependent on conditions encountered during the time of construction.</p> <p>Following construction, the temporary construction laydown area will be restored to pre-existing conditions to allow agricultural or prior activities to resume, at the discretion of landowners.</p>  |   |   |  |
| <b>Operation</b>            |  |   |   |  |
| Water Taking (Ground Water) | <p>During the operation of the Project, it is expected that approximately 6 full time employees will regularly use the O&amp;M building. Potable water will be supplied by a well or through the municipal water system. Non-potable water taking during operation will be limited to regular personnel requirements, such as washroom facilities, sinks, etc.</p> | N/A   | N/A   | N/A  |
| Turbine Operation           | <p>A total of 18 proposed turbine locations will be permitted for the Project. The total number of turbines will depend on the nominal turbine power rating of each turbine.</p>   | Bird Species of Conservation Concern Habitat        | <ul style="list-style-type: none"> <li>• Woodlands</li> <li>• Wetlands</li> <li>• Bat Maternity Colonies</li> <li>• Colonially-Nesting Bird Breeding Habitats (Tree/Shrubs)</li> <li>• Landbird Migratory Stopover Areas</li> <li>• Other Rare</li> </ul> | <ul style="list-style-type: none"> <li>• Disturbance to wildlife species</li> <li>• Direct wildlife (avian and bat) mortality due to collisions with turbines</li> </ul> |

**Table 2. Summary of Construction, Operation, and Decommissioning Activities and Potential Negative Environmental Effects Associated With the Project**

| Project Activity    | Extent of Effect   | Significant Feature(s) Overlapping Project Activity | Significant Feature(s) within 120m of Project Activity   | Potential Negative Effects to Significant Feature or Habitat   |
|---------------------|--|---|--|--|
|                     |  |   | Vegetation Communities<br>• Amphibian Breeding Habitats (Woodland)<br>• Bird Species of Conservation Concern Habitats<br>• Plant Species of Conservation Concern Habitats<br>• Generalized Significant Wildlife Habitats |  |
| Turbine Maintenance | Regular maintenance activities will occur at all of the operational turbines at the Project.<br><br>In addition to regularly scheduled maintenance, occasional unscheduled maintenance activities may be required. | N/A   | • Woodlands<br>• Wetlands<br>• Bat Maternity Colonies<br>• Colonially-Nesting Bird Breeding Habitats (Tree/Shrubs)<br>• Landbird Migratory Stopover  | • Spills and leaks (oil, gas, etc.), and contamination of nearby natural features<br>• Disturbance to wildlife species<br>• Increased wildlife mortality due to vehicle collisions |

**Table 2. Summary of Construction, Operation, and Decommissioning Activities and Potential Negative Environmental Effects Associated With the Project**

| Project Activity   | Extent of Effect  | Significant Feature(s) Overlapping Project Activity | Significant Feature(s) within 120m of Project Activity  | Potential Negative Effects to Significant Feature or Habitat |
|--|---|---|---|--|
|  |   |   | Areas <ul style="list-style-type: none"> <li>• Other Rare Vegetation Communities</li> <li>• Amphibian Breeding Habitats (Woodland)</li> <li>• Bird Species of Conservation Concern Habitats</li> <li>• Plant Species of Conservation Concern Habitats</li> <li>• Generalized Significant Wildlife Habitats</li> </ul> |  |
| Vegetation Maintenance Along Overhead Electrical Collector Lines | Routine vegetation removal, including tree removal or pruning, may be required for clearance of the electrical collector lines during operations. | N/A   | N/A   | N/A  |
| <b>Decommissioning</b>   |   |   |   |  |
| Pre-Dismantling Activities                                       | At the end of the Project's life, it will first be de-energized and isolated from all external electrical lines.                                  | N/A   | N/A   | N/A  |
| Removal of Ancillary Facilities                                  | Three types of supporting facilities may be associated with the Project. These include a  | N/A   | N/A   | N/A  |



**Table 2. Summary of Construction, Operation, and Decommissioning Activities and Potential Negative Environmental Effects Associated With the Project**

| Project Activity                  | Extent of Effect  | Significant Feature(s) Overlapping Project Activity | Significant Feature(s) within 120m of Project Activity   | Potential Negative Effects to Significant Feature or Habitat   |
|-----------------------------------|---|---|--|--|
|                                   | <p>substation, meteorological tower, and an O&amp;M building.</p> <p>The substation and O&amp;M building, as well as all associated above-ground infrastructure, will be dismantled and removed from the Project Location. Any concrete foundations will be removed to at least 1m below original grade or to the depth originally installed if less than 1m below original grade. The area will be graded, contoured, and restored to land use similar to what was present prior to foundation installation, to allow for prior activities to resume.</p> <p>One meteorological tower will be permitted for construction and will be removed unless otherwise requested by the Municipality of Chatham-Kent or local aviation groups (and agreed to by the Proponent and the property owner) for it to remain in place. Any concrete foundations would be removed to at least 1m below original grade or to the depth originally installed if less than 1m below original grade. The area will be graded, contoured, and restored to land use similar to what was present prior to foundation installation, to allow for prior activities to resume.</p> |   |  |  |
| Removal of Turbine Infrastructure | Up to 18 wind turbines will be constructed for the Project. All constructed turbines will be removed as per the decommissioning plan.   | Bird Species of Conservation Concern Habitat        | <ul style="list-style-type: none"> <li>• Woodlands</li> <li>• Wetlands</li> <li>• Bat Maternity</li> </ul> | <ul style="list-style-type: none"> <li>• Accidental vegetation removal</li> <li>• Increased erosion, sedimentation, and turbidity</li> </ul> |

**Table 2. Summary of Construction, Operation, and Decommissioning Activities and Potential Negative Environmental Effects Associated With the Project**

| Project Activity        | Extent of Effect  | Significant Feature(s) Overlapping Project Activity | Significant Feature(s) within 120m of Project Activity  | Potential Negative Effects to Significant Feature or Habitat   |
|-------------------------|---|---|---|--|
|                         | <p>A crane pad and wind turbine laydown area will be constructed at each turbine location to accommodate the dismantling of the wind turbines.</p> <p>Following the removal of turbines, crane pads will be removed and the land will be restored to land use similar to what was present prior to turbine installation, to allow for agricultural activities or prior activities to resume.</p> <p>Removal of turbine components will also include the removal of 1m of the underground foundation below the original elevation (prior to construction). Excavated foundation areas will be backfilled with clean fill and stockpiled topsoil to match the original elevation, and the area will be graded, contoured, and restored to land use similar to what was present prior to foundation installation, to allow for prior activities to resume.</p> |   | <ul style="list-style-type: none"> <li>• Colonies</li> <li>• Colonially-Nesting Bird Breeding Habitats (Tree/Shrubs)</li> <li>• Landbird Migratory Stopover Areas</li> <li>• Other Rare Vegetation Communities</li> <li>• Amphibian Breeding Habitats (Woodland)</li> <li>• Bird Species of Conservation Concern Habitats</li> <li>• Plant Species of Conservation Concern Habitats</li> <li>• Generalized Significant Wildlife Habitats</li> </ul> | <ul style="list-style-type: none"> <li>• Fugitive dust emission</li> <li>• Changes in soil moisture and compaction</li> <li>• Spills and leaks (oil, gas, etc.), and contamination of nearby natural features</li> <li>• Changes in surface water drainage</li> <li>• Disturbance of wildlife species</li> <li>• Increased vegetation species competition through introduction of invasive vegetation species</li> </ul> <p>If dewatering of excavated wind turbine foundations is required:</p> <ul style="list-style-type: none"> <li>• Reduced groundwater discharge</li> <li>• Reduced stream baseflows and upwelling</li> <li>• Increased water temperatures</li> <li>• Reduced water quality (i.e. increased turbidity)</li> <li>• Increased water quantity to receiving area or water body</li> </ul> |
| Removal of Access Roads | Access road removal will be dependent on  | Bird Species of                                     | • Woodlands   | • Accidental vegetation removal  |

**Table 2. Summary of Construction, Operation, and Decommissioning Activities and Potential Negative Environmental Effects Associated With the Project**

| Project Activity | Extent of Effect  | Significant Feature(s) Overlapping Project Activity | Significant Feature(s) within 120m of Project Activity   | Potential Negative Effects to Significant Feature or Habitat  |
|------------------|---|---|--|---|
|                  | <p>the requirements and agreements in place with the individual landowner.</p> <p>Impacted lands will be restored to land use prior to access road construction, at the discretion of landowners.</p> | <p>Conservation Concern Habitat</p>                 | <ul style="list-style-type: none"> <li>• Wetlands</li> <li>• Bat Maternity Colonies</li> <li>• Colonially-Nesting Bird Breeding Habitats (Tree/Shrubs)</li> <li>• Landbird Migratory Stopover Areas</li> <li>• Other Rare Vegetation Communities</li> <li>• Amphibian Breeding Habitats (Woodland)</li> <li>• Bird Species of Conservation Concern Habitats</li> <li>• Plant Species of Conservation Concern Habitats</li> <li>• Generalized Significant Wildlife</li> </ul> | <ul style="list-style-type: none"> <li>• Increased erosion, sedimentation, and turbidity</li> <li>• Fugitive dust emission</li> <li>• Changes in soil moisture and compaction</li> <li>• Changes in surface water drainage</li> <li>• Spills and leaks (oil, gas, etc.), and contamination of nearby natural features</li> <li>• Disturbance of wildlife species</li> <li>• Increased vegetation species competition through introduction of invasive vegetation species</li> </ul> |

**Table 2. Summary of Construction, Operation, and Decommissioning Activities and Potential Negative Environmental Effects Associated With the Project**

| Project Activity   | Extent of Effect   | Significant Feature(s) Overlapping Project Activity | Significant Feature(s) within 120m of Project Activity   | Potential Negative Effects to Significant Feature or Habitat   |
|--|--|---|--|--|
| <p>Removal of Electrical Collector Lines (Overhead or Underground)</p> | <p>Underground and overhead electrical collector lines are proposed for this Project.</p> <p>Underground electrical collector lines are expected to remain in place at the end of the Project life; however, at their connection points in the substation or in junction boxes, where the underground electrical collector lines come to the surface, the electrical collector lines will be cut to a depth of approximately 1m below original grade.</p> <p>Overhead electrical collector lines are expected to be removed at the end of the Project life; however, the poles on which the collector lines will be installed that are not shared with HONI will be cut to a depth of approximately 1m below original grade or may be completely removed from the ground, where feasible.</p> <p>Any electrical collector lines located at directionally drilled watercourse crossings or underneath significant natural features and wildlife habitats will also remain in place; however, the connection point will be severed at a point located outside of the Lower Thames Valley Conservation Authority (LTVCA) Regulation Area, where possible, and outside of significant natural features and/or wildlife habitats.</p> | <p>Bird Species of Conservation Concern Habitat</p> | <p>Habitats</p> <ul style="list-style-type: none"> <li>• Woodlands</li> <li>• Wetlands</li> <li>• Bat Maternity Colonies</li> <li>• Colonially-Nesting Bird Breeding Habitats (Tree/Shrubs)</li> <li>• Landbird Migratory Stopover Areas</li> <li>• Other Rare Vegetation Communities</li> <li>• Amphibian Breeding Habitats (Woodland)</li> <li>• Bird Species of Conservation Concern Habitats</li> <li>• Plant Species of Conservation Concern Habitats</li> <li>• Generalized</li> </ul> | <ul style="list-style-type: none"> <li>• Accidental vegetation removal</li> <li>• Increased erosion, sedimentation, and turbidity</li> <li>• Fugitive dust emission</li> <li>• Changes in soil moisture and compaction</li> <li>• Spills and leaks (oil, gas, etc.), and contamination of nearby natural features</li> <li>• Disturbance of wildlife species</li> <li>• Increased vegetation species competition through introduction of invasive vegetation species</li> <li>• Removal of vegetation within the existing municipal road right-of-way</li> </ul> |

**Table 2. Summary of Construction, Operation, and Decommissioning Activities and Potential Negative Environmental Effects Associated With the Project**

| Project Activity        | Extent of Effect   | Significant Feature(s) Overlapping Project Activity | Significant Feature(s) within 120m of Project Activity | Potential Negative Effects to Significant Feature or Habitat |
|-------------------------|--|---|--|--|
|                         | The Proponent is responsible for decommissioning of the electrical line from the substation up to the PCC, after which point the infrastructure is owned by HONI.  |   | Significant Wildlife Habitats                          |  |
| Removal of Staging Area | <p>Upon decommissioning of the Project, temporary staging and laydown areas will be constructed and appropriate decommissioning activities will be carried out within these designated areas.</p> <p>After completion of the decommissioning, temporary staging areas and any associated temporary decommissioning improvements (e.g., temporary construction trailer) used during the decommissioning phase will be removed. Any foundations associated with these facilities will be removed to a depth of at least 1m below original grade or to the depth originally installed if less than 1m below original grade. The area will be graded, contoured, and restored to land use similar to what was present prior to foundation installation, to allow for prior activities to resume.</p> | N/A   | N/A  | N/A  |

#### 4.1 Approach to Impact Assessment

For the purposes of this report, the analysis of potential impacts has been divided into the different classifications of significant natural features, consistent with the summary of evaluation of significance section of this report, with SWH further subdivided based on the distance to Project Location, type of wildlife habitat, and methods of determining significance, as follows:

- Significant Woodlands and Wetlands
- SWH
  - Project Location in or within 120m of Confirmed SWH
  - Project Location in or within 120m of SWH Treated as Significant
  - Generalized Impacts to Wildlife Habitat

Potential impacts to each of the significant features or wildlife habitats in or within 120m of the Project Location are discussed collectively based on their respective distance to the closest Project Location. Although grouped by closest distance to Project Location, all potential impacts of the proposed development in or within 120m of each feature are encompassed within the tables. Given the potential impacts at various distances to the Project Location, NRSI has grouped the natural features or wildlife habitats that are in or within 120m of the Project Location into 3 more specific distance categories from the Project Location, as follows:

- Overlapping the Project Location
- 0.1m to 30m from the Project Location
- >30m to 120m from the Project Location

These distance categories have been chosen as they each have the potential for different types of impacts on wildlife habitats and natural features. Although there is an expected gradual increase in potential impacts as development occurs closer to natural features or wildlife habitats, a distance of 30m has been chosen as a conservative division where the potential for impact substantially decreases with certain types of potential impacts. For example, areas where the Project Location is within 30m of a natural feature or SWH, there is increased potential for erosion and sedimentation, visual and noise disturbance to wildlife, impacts from accidental spills, and other localized impacts, if not properly mitigated. The impacts within each of these distance categories are expected to be relatively consistent within the given distance.

## 5.0 Environmental Impact Study

In accordance with the REA Regulation, NHA Guide for Renewable Energy Projects (OMNR 2012) and the SWH Criteria Schedules for Ecoregion 7E (MNR 2015), NRSI biologists have identified several significant, or treated as significant, natural features and wildlife habitats in and within 120m of the Project Location. Each of these significant natural features are discussed in more detail below, including potential impacts and recommended mitigation measures.

This report identifies potential environmental effects of the Project, proposed mitigation measures, and details the monitoring programs that will be implemented during the various phases of the Project. A summary of the potential environmental effects, proposed mitigation measures, and monitoring programs that will be implemented during the construction and operational phases of the Project is also provided in Table 5-2 of the *Construction Plan Report* (DNV-GL 2017a) and Table 6-2 of the *Design and Operations Report* (DNV-GL 2017b).

All potential environmental effects described in this report are the potential effects prior to the implementation of mitigation measures, and therefore do not reflect the actual impact of the Project once those mitigation measures are in place.

Additional consideration will be given to mitigation measures and monitoring programs for this Project in the Bird and Bat EEMP, which will be prepared under a separate cover.

### 5.1 Significant Woodlands and Wetlands

NRSI biologists have identified several significant woodlands and wetlands within 120m of the Project Location. Each of these natural features is addressed in Table 3, including the identification of potential negative impacts and recommended mitigation measures based on the general distances that they are found from the Project Location. As described above, for the purposes of the impact assessment and recommended mitigation measures, the general distance categories have been established as overlapping, 0.1m to 30m, and greater than 30m to 120m from the Project Location.

Many of the recommended mitigation measures, performance objectives, monitoring commitments, and contingency plans are consistent between natural features, SWH, and generalized SWH. As such, recommended mitigation measures have been listed in Table 3 below (e.g. Minimization of Erosion and Sedimentation, Posting of On-site Speed Limits, etc.), while the details of each listed mitigation measure, including performance objectives, monitoring commitments, and contingency plans, are provided in Table 8 (applicable to the construction and decommissioning phases of the Project) and/or Table 9 (applicable to the operational phase of the Project). Table 8 and Table 9 also identify the location(s) where the mitigation measure(s) and associated performance objectives, monitoring commitments, and contingency plans apply, depending on the natural feature type and distance to the Project Location.

**Table 3. Potential Negative Effects and Mitigation Measures for Significant Woodlands and Wetlands within 120m of the Project Location**

| Closest Distance to Project Location | Feature ID   | Potential Negative Effects  | Mitigation Measures   |
|--------------------------------------|--|---|---|
| <b>Woodlands</b>                     |  |   |   |
| Overlapping                          | N/A  | N/A   | N/A   |
| 0.1m - 30m                           | WOD-001<br>WOD-002<br>WOD-004<br>WOD-005<br>WOD-006<br>WOD-007<br>WOD-011<br>WOD-013 | <ul style="list-style-type: none"> <li>Accidental damage or removal of vegetation (the Project Location is sited outside of woodlands - vegetation damage or removal is not anticipated)</li> <li>Erosion and sedimentation</li> <li>Fugitive dust emission</li> <li>Spills (i.e. oil, gasoline, grease, etc.) during the construction, operation, and decommissioning phases</li> <li>Changes in soil moisture</li> </ul>        | <ul style="list-style-type: none"> <li>Delineation of Work Area<sup>1</sup></li> <li>Herbicide Avoidance<sup>1,2</sup></li> <li>Posting of On-site Speed Limits<sup>1,2</sup></li> <li>Minimization of Erosion and Sedimentation<sup>1</sup></li> <li>Minimization of Fugitive Dust Emission<sup>1</sup></li> <li>Minimization of Spills<sup>1,2</sup></li> <li>Minimization of Impacts to Soil Moisture<sup>1</sup></li> </ul> |
| >30m - 120m                          | WOD-003<br>WOD-009<br>WOD-014  | N/A   | N/A   |
| <b>Wetlands</b>                      |  |   |   |
| Overlapping                          | N/A  | N/A   | N/A   |
| 0.1m - 30m                           | WET-001<br>WET-003<br>WET-004<br>WET-005<br>WET-006<br>WET-008                       | <ul style="list-style-type: none"> <li>Reduced flood attenuation</li> <li>Reduced water quality (i.e. increased turbidity)</li> <li>Reduced infiltration</li> <li>Reduced groundwater discharge</li> <li>Erosion and sedimentation</li> <li>Fugitive dust emission</li> <li>Spills (i.e. oil, gasoline, grease, etc.) during the construction, operation, and decommissioning phases</li> <li>Changes in soil moisture</li> </ul> | <ul style="list-style-type: none"> <li>Minimization of Impacts to Flood Attenuation<sup>1</sup></li> <li>Minimization of Impacts to Water Quality<sup>1</sup></li> <li>Minimization of Impacts to Infiltration<sup>1</sup></li> <li>Minimization of Impacts to</li> </ul>   |



**Table 3. Potential Negative Effects and Mitigation Measures for Significant Woodlands and Wetlands within 120m of the Project Location**

| Closest Distance to Project Location | Feature ID         | Potential Negative Effects | Mitigation Measures  |
|--------------------------------------|--------------------|----------------------------|--|
|                                      |                    |                            | <ul style="list-style-type: none"> <li>Groundwater Discharge<sup>1</sup></li> <li>• Herbicide Avoidance<sup>1,2</sup></li> <li>• Posting of On-site Speed Limits<sup>1,2</sup></li> <li>• Minimization of Erosion and Sedimentation<sup>1</sup></li> <li>• Minimization of Fugitive Dust Emission<sup>1</sup></li> <li>• Minimization of Spills<sup>1,2</sup></li> <li>• Minimization of Impacts to Soil Moisture<sup>1</sup></li> </ul> |
| >30m - 120m                          | WET-002<br>WET-009 | N/A                        | N/A  |

<sup>1</sup> Mitigation measure is applicable during the construction and decommissioning phases of the Project; please refer to Table 8 for more details.

<sup>2</sup> Mitigation measure is applicable during the operational phase of the Project; please refer to Table 9 for more details.

## 5.2 Significant Wildlife Habitat

The evaluation of significance completed by NRSI biologists has determined the presence of 61 SWHs in and within 120m of the Project Location. Three (3) of these wildlife habitats have been confirmed as SWH, and the remaining 58 have been treated as significant. Fifteen (15) of the 58 SWHs have been treated as significant with a commitment to conduct seasonal surveys to update the significant designation prior to the construction phase of the Project. In accordance with the REA Regulation, any feature that is determined to be overlapping a Project component or within 120m of a Project component that contains an “X” or “Y” in Table 19 of Appendix D of the NHA Guide (OMNR 2012), has been specifically addressed below. Other wildlife habitats, treated as significant, that are present within 120m of (but not overlapping) Project components that do not contain an “X” or “Y” in Table 19 of Appendix D of the NHA Guide (OMNR 2012), have been collectively addressed as part of the generalized mitigation measures. As described above, for the purposes of impact assessment and recommended mitigation measures, the general distance categories have been established as overlapping, 0.1m to 30m, and greater than 30m to 120m from the Project

Location. These measurements coincide with the distance from a SWH to the closest Project component.

#### 5.2.1 Project Location within 120m of Confirmed Significant Wildlife Habitat

NRSI biologists have identified 3 confirmed SWHs, representing 3 habitat types, within 120m of, or overlapping, project components, which may incur impacts. These wildlife habitats, potential negative effects, and mitigation measures to be implemented, are discussed in Table 4 below.

Many of the recommended mitigation measures, performance objectives, monitoring commitments, and contingency plans are consistent between natural features, SWH, and generalized SWH. As such, recommended mitigation measures have been listed in Table 4 below (e.g. Minimization of Erosion and Sedimentation, Posting of On-site Speed Limits, etc.), while the details of each listed mitigation measure, including performance objectives, monitoring commitments, and contingency plans, are provided in Table 8 (applicable to the construction and decommissioning phases of the Project) and/or Table 9 (applicable to the operational phase of the Project). Table 8 and Table 9 also identify the location(s) where the mitigation measure(s) and associated performance objectives, monitoring commitments, and contingency plans apply, depending on the natural feature type and distance to the Project Location.

**Table 4. Potential Negative Effects and Mitigation Measures for Confirmed Significant Wildlife Habitats In and Within 120m of the Project Location**

| Closest Distance to Project Location             | Feature ID | Potential Negative Effects  | Mitigation Measures   |
|--|------------|---|---|
| <b>Other Rare Vegetation Communities Habitat</b> |            |   |   |
| Overlapping                                      | N/A        | N/A   | N/A   |
| 0.1m - 30m                                       | N/A        | N/A   | N/A   |
| >30m - 120m                                      | ORV-001    | N/A   | N/A   |
| <b>Bald Eagle Habitat</b>                        |            |   |   |
| Overlapping                                      | BAL-001    | <ul style="list-style-type: none"> <li>• Loss of habitat (hedgerow removal)</li> <li>• Accidental damage to habitat, including tree limbs (hedgerows)</li> <li>• Noise disturbance/avoidance</li> <li>• Avoidance of habitat</li> <li>• Direct mortality of individuals resulting from collisions with operational turbines</li> <li>• Spills (i.e. oil, gasoline, grease, and/or drilling frac-out, etc.)</li> </ul> | <ul style="list-style-type: none"> <li>• Microsite Project Location (Bald Eagle Habitat)<sup>1</sup></li> <li>• Delineation of Work Area<sup>1</sup></li> <li>• Herbicide Avoidance<sup>1,2</sup></li> <li>• Adherence of Wildlife Timing Windows (Bald Eagle Habitat)<sup>1,2</sup></li> <li>• Disturbance/Avoidance Behaviour (Bald Eagle Habitat)<sup>1,2</sup></li> <li>• Develop a Bird and Bat EEMP<sup>2</sup></li> <li>• Posting of On-site Speed Limits<sup>1,2</sup></li> <li>• Minimization of Spills<sup>1,2</sup></li> </ul> |

**Table 4. Potential Negative Effects and Mitigation Measures for Confirmed Significant Wildlife Habitats In and Within 120m of the Project Location**

| Closest Distance to Project Location | Feature ID | Potential Negative Effects   | Mitigation Measures   |
|--------------------------------------|------------|--|---|
|                                      |            | during the construction, operation, and decommissioning phases   |   |
| 0.1m - 30m                           | N/A        | N/A  | N/A   |
| >30m - 120m                          | N/A        | N/A  | N/A   |
| <b>Shellbark Hickory Habitat</b>     |            |  |   |
| Overlapping                          | N/A        | N/A  | N/A   |
| 0.1m - 30m                           | SHH-004    | <ul style="list-style-type: none"> <li>• Accidental damage to habitat, including tree limbs</li> <li>• Erosion and sedimentation</li> <li>• Fugitive dust emission</li> <li>• Spills (i.e. oil, gasoline, grease, and/or drilling frac-out, etc.) during the construction, operation, and decommissioning phases</li> <li>• Increased vegetation species competition through introduction of invasive vegetation species during the construction, operation, and decommissioning phases</li> <li>• Changes in soil moisture</li> </ul> | <ul style="list-style-type: none"> <li>• Delineation of Work Area<sup>1</sup></li> <li>• Herbicide Avoidance<sup>1,2</sup></li> <li>• Posting of On-site Speed Limits<sup>1,2</sup></li> <li>• Minimization of Erosion and Sedimentation<sup>1</sup></li> <li>• Minimization of Fugitive Dust Emission<sup>1</sup></li> <li>• Minimization of Spills<sup>1,2</sup></li> <li>• Minimization of Invasive Seed Transfer<sup>1</sup></li> <li>• Minimization of Impacts to Soil Moisture<sup>1</sup></li> </ul> |
| >30m - 120m                          | N/A        | N/A  | N/A   |

<sup>1</sup> Mitigation measure is applicable during the construction and decommissioning phases of the Project; please refer to Table 8 for more details.

<sup>2</sup> Mitigation measure is applicable during the operational phase of the Project; please refer to Table 9 for more details.

### 5.2.2 Project Location within 120m of Wildlife Habitat Treated as Significant

NRSI biologists have identified a total of 58 individually delineated treated as significant wildlife habitats, representing 5 habitat types, that are overlapping Project components or within 120m of (but not overlapping) Project components. For the purpose of this report, 15 of these wildlife habitats have been conservatively treated as significant with a commitment to complete detailed surveys to confirm significance prior to the construction phase of the Project.

The remaining 43 wildlife habitats that have been treated as significant is a result of a conservative approach to habitats where site-specific property access was denied and therefore detailed significance studies could not be completed.

Each of these 58 wildlife habitats that have been treated as significant are addressed in Table 5, including potential negative effects of the Project and recommended mitigation measures if pre-construction surveys (where applicable) confirm significance of the habitat. The details of the surveys required for each of the 15 wildlife habitats that have been treated as significant with a commitment to conduct pre-construction surveys, are provided in Table 7.

Many of the recommended mitigation measures, performance objectives, monitoring commitments, and contingency plans are consistent between natural features, SWH, and generalized SWH. As such, recommended mitigation measures have been listed in Table 5 below (e.g. Minimization of Erosion and Sedimentation, Posting of On-site Speed Limits, etc.), while the details of each listed mitigation measure, including performance objectives, monitoring commitments, and contingency plans, are provided in Table 8 (applicable to the construction and decommissioning phases of the Project) and/or Table 9 (applicable to the operations phase of the Project). Table 8 and Table 9 also identify the location(s) where the mitigation measure(s) and associated performance objectives, monitoring commitments, and contingency plans apply, depending on the natural feature type and distance to the Project Location.

**Table 5. Potential Negative Effects and Mitigation Measures for Treated as Significant Wildlife Habitats Within 120m of the Project Location**

| Closest Distance to Project Location                           | Feature ID         | Potential Negative Effects   | Mitigation Measures   |
|--|--------------------|--|---|
| <b>Bat Maternity Colony</b>                                    |                    |  |   |
| Overlapping  | N/A                | N/A  | N/A   |
| 0.1m - 30m   | BMA-002<br>BMA-003 | <ul style="list-style-type: none"> <li>• Accidental damage to habitat, including tree limbs</li> <li>• Noise disturbance/ avoidance behaviour</li> <li>• Avoidance of habitat during operation phase</li> <li>• Direct mortality of individuals resulting from collisions with operational turbines</li> <li>• Fugitive dust emission</li> </ul>   | <ul style="list-style-type: none"> <li>• Delineation of Work Area<sup>1</sup></li> <li>• Herbicide Avoidance<sup>1,2</sup></li> <li>• Adherence of Wildlife Timing Windows (Bat Maternity Colony)<sup>1,2</sup></li> <li>• Develop a Bird and Bat EEMP<sup>2</sup></li> <li>• Posting of On-site Speed Limits<sup>1,2</sup></li> <li>• Minimization of Fugitive Dust Emission<sup>1</sup></li> </ul>  |
| >30m - 120m  | BMA-001            | <ul style="list-style-type: none"> <li>• Direct mortality through collisions with operational turbines</li> </ul>  | <ul style="list-style-type: none"> <li>• Develop a Bird and Bat EEMP<sup>2</sup></li> </ul>   |
| <b>Colonially-Nesting Breeding Bird Habitat (Trees/Shrubs)</b> |                    |  |   |
| Overlapping  | N/A                | N/A  | N/A   |
| 0.1m - 30m   | CBT-002<br>CBT-003 | <ul style="list-style-type: none"> <li>• Accidental damage to habitat, including tree limbs</li> <li>• Noise disturbance/ avoidance behaviour</li> <li>• Avoidance of habitat during operation phase</li> <li>• Direct mortality of individuals resulting from collisions with operational turbines</li> <li>• Fugitive dust emission</li> <li>• Spills (i.e. oil, gasoline, grease, and/or drilling frac-out, etc.) during the construction, operation, and decommissioning phases</li> </ul> | <ul style="list-style-type: none"> <li>• Delineation of Work Area<sup>1</sup></li> <li>• Herbicide Avoidance<sup>1,2</sup></li> <li>• Adherence of Wildlife Timing Windows (Colonially-Nesting Breeding Bird Habitat [Trees/Shrubs])<sup>1,2</sup></li> <li>• Develop a Bird and Bat EEMP<sup>2</sup></li> <li>• Posting of On-site Speed Limits<sup>1,2</sup></li> <li>• Minimization of Fugitive Dust Emission<sup>1</sup></li> <li>• Minimization of Spills<sup>1,2</sup></li> </ul> |
| >30m - 120m  | CBT-001            | <ul style="list-style-type: none"> <li>• Direct mortality through collisions with operational turbines</li> </ul>  | <ul style="list-style-type: none"> <li>• Develop a Bird and Bat EEMP<sup>2</sup></li> </ul>   |
| <b>Landbird Migratory Stopover Area</b>                        |                    |  |   |
| Overlapping  | N/A                | N/A  | N/A   |
| 0.1m - 30m   | LMS-001<br>LMS-002 | <ul style="list-style-type: none"> <li>• Accidental damage to habitat, including tree limbs</li> <li>• Noise disturbance/ avoidance behaviour</li> <li>• Avoidance of habitat during operation phase</li> <li>• Direct mortality of individuals resulting from collisions with operational turbines</li> <li>• Fugitive dust emission</li> </ul>   | <ul style="list-style-type: none"> <li>• Delineation of Work Area<sup>1</sup></li> <li>• Herbicide Avoidance<sup>1,2</sup></li> <li>• Adherence of Wildlife Timing Windows (Landbird Migratory Stopover Area)<sup>1,2</sup></li> <li>• Develop a Bird and Bat EEMP<sup>2</sup></li> <li>• Posting of On-site Speed Limits<sup>1,2</sup></li> <li>• Minimization of Fugitive Dust Emission<sup>1</sup></li> </ul>  |
| >30m - 120m  | N/A                | N/A  | N/A   |
| <b>Amphibian Breeding Habitat (Woodland)</b>                   |                    |  |   |
| Overlapping  | N/A                | N/A  | N/A   |
| 0.1m - 30m   |                    |  |   |
| >30m - 120m  | AWO-001            | N/A  | N/A   |
| <b>Habitats for Species of Conservation Concern – Birds**</b>  |                    |  |   |
| Overlapping  | BAL-002¥           | <ul style="list-style-type: none"> <li>• Noise disturbance/avoidance</li> <li>• Avoidance of habitat</li> <li>• Direct mortality of individuals resulting from collisions with operational turbines</li> </ul>   | <ul style="list-style-type: none"> <li>• Microsite Project Location (Bald Eagle Habitat)<sup>1</sup></li> <li>• Delineation of Work Area<sup>1</sup></li> <li>• Herbicide Avoidance<sup>1,2</sup></li> <li>• Adherence of Wildlife Timing Windows (Bald Eagle</li> </ul>  |

**Table 5. Potential Negative Effects and Mitigation Measures for Treated as Significant Wildlife Habitats Within 120m of the Project Location**

| Closest Distance to Project Location                             | Feature ID   | Potential Negative Effects   | Mitigation Measures   |
|--|--|--|---|
|  |  | <ul style="list-style-type: none"> <li>Spills (i.e. oil, gasoline, grease, and/or drilling frac-out, etc.) during the construction, operation, and decommissioning phases</li> </ul>   | <ul style="list-style-type: none"> <li>Habitat<sup>1,2</sup></li> <li>Disturbance/Avoidance Behaviour (Bald Eagle Habitat)<sup>1,2</sup></li> <li>Develop a Bird and Bat EEMP<sup>2</sup></li> <li>Posting of On-site Speed Limits<sup>1,2</sup></li> <li>Minimization of Spills<sup>1,2</sup></li> </ul>   |
| 0.1m - 30m   | EWP-001* (SCC-A)<br>EWP-003* (SCC-D)<br>EWP-004* (SCC-G)<br>EWP-005* (SCC-H)<br>Eastern Wood-Pewee Habitat   | <ul style="list-style-type: none"> <li>Accidental damage to habitat, including g tree limbs</li> <li>Noise disturbance/ avoidance behaviour</li> <li>Avoidance of habitat during operation phase</li> <li>Direct mortality of individuals resulting from collisions with operational turbines</li> <li>Fugitive dust emission</li> <li>Spills (i.e. oil, gasoline, grease, and/or drilling frac-out, etc.) during the construction, operation, and decommissioning phases</li> </ul>                                       | <ul style="list-style-type: none"> <li>Delineation of Work Area<sup>1</sup></li> <li>Herbicide Avoidance<sup>1,2</sup></li> <li>Adherence of Wildlife Timing Windows (Eastern Wood-Pewee Habitats)<sup>1,2</sup></li> <li>Develop a Bird and Bat EEMP<sup>2</sup></li> <li>Posting of On-site Speed Limits<sup>1,2</sup></li> <li>Minimization of Fugitive Dust Emission<sup>1</sup></li> <li>Minimization of Spills<sup>1,2</sup></li> </ul>   |
| >30m - 120m  | EWP-002 (SCC-B)<br>Eastern Wood-Pewee Habitat<br>WTH-001 (SCC-B)<br>Wood Thrush Habitat  | <ul style="list-style-type: none"> <li>Direct mortality of individuals resulting from collisions with operational turbines</li> </ul>  | <ul style="list-style-type: none"> <li>Develop a Bird and Bat EEMP<sup>2</sup></li> </ul>   |
| <b>Habitats for Species of Conservation Concern – Vegetation</b> |  |  |   |
| Overlapping  | N/A  | N/A  | N/A   |
| 0.1m - 30m   | SHS-004 (SCC-D)<br>SHS-005 (SCC-G)<br>SHS-006 (SCC-J)<br>Slightly Hirsute Sedge Habitat<br>SQS-004 (SCC-D)<br>SQS-005 (SCC-G)<br>SQS-006 (SCC-J)<br>Squarrose Sedge Habitat<br>CSE-001* (SCC-A)<br>CSE-003* (SCC-C)<br>CSE-004 (SCC-D)<br>CSE-005 (SCC-G)<br>CSE-006 (SCC-J)<br>Cattail Sedge Habitat<br>SHH-005 (SCC-G)<br>SHH-006 (SCC-J)<br>Shellbark Hickory Habitat | <ul style="list-style-type: none"> <li>Accidental damage to habitat, including tree limbs</li> <li>Erosion and sedimentation</li> <li>Fugitive dust emission</li> <li>Spills (i.e. oil, gasoline, grease, and/or drilling frac-out, etc.) during the construction, operation, and decommissioning phases</li> <li>Increased vegetation species competition through introduction of invasive vegetation species during the construction, operation, and decommissioning phases</li> <li>Changes in soil moisture</li> </ul> | <ul style="list-style-type: none"> <li>Delineation of Work Area<sup>1</sup></li> <li>Herbicide Avoidance<sup>1,2</sup></li> <li>Posting of On-site Speed Limits<sup>1,2</sup></li> <li>Minimization of Erosion and Sedimentation<sup>1</sup></li> <li>Minimization of Fugitive Dust Emission<sup>1</sup></li> <li>Minimization of Spills<sup>1,2</sup></li> <li>Minimization of Invasive Seed Transfer<sup>1</sup></li> <li>Minimization of Impacts to Soil Moisture<sup>1</sup></li> </ul> |

**Table 5. Potential Negative Effects and Mitigation Measures for Treated as Significant Wildlife Habitats Within 120m of the Project Location**

| Closest Distance to Project Location | Feature ID  | Potential Negative Effects | Mitigation Measures |
|--------------------------------------|---|----------------------------|---------------------|
|                                      | PAS-001* (SCC-A)<br>PAS-003* (SCC-C)<br>PAS-004 (SCC-D)<br>PAS-005 (SCC-G)<br>PAS-006 (SCC-J)<br>Pumpkin Ash Habitat<br>BGU-004 (SCC-D)<br>BGU-005 (SCC-G)<br>BGU-006 (SCC-J)<br>Black Gum Habitat<br>HLS-001* (SCC-A)<br>HLS-003* (SCC-C)<br>HSL-004 (SCC-D)<br>HSL-005 (SCC-G)<br>HLS-006 (SCC-J)<br>Halberd-leaved Smartweed Habitat<br>SHO-001* (SCC-A)<br>SHO-003* (SCC-C)<br>SHO-004 (SCC-D)<br>SHO-005 (SCC-G)<br>SHO-006 (SCC-J)<br>Shumard Oak Habitat<br>CPR-001 (SCC-L)<br>Climbing Prairie Rose Habitat |                            |                     |
| >30m - 120m                          | SHS-002 (SCC-B)<br>Slightly Hirsute Sedge Habitat<br>SQS-002 (SCC-B)<br>Squarrose Sedge Habitat<br>CSE-002 (SCC-B)<br>CSE-007* (SCC-E)<br>Cattail Sedge Habitat<br>SHH-002 (SCC-B)<br>Shellbark Hickory Habitat<br>PAS-002 (SCC-B)  | N/A                        | N/A                 |

**Table 5. Potential Negative Effects and Mitigation Measures for Treated as Significant Wildlife Habitats Within 120m of the Project Location**

| Closest Distance to Project Location | Feature ID  | Potential Negative Effects | Mitigation Measures |
|--------------------------------------|---|----------------------------|---------------------|
|                                      | PAS-007* (SCC-E)<br>Pumpkin Ash Habitat             |                            |                     |
|                                      | BGU-002 (SCC-B)<br>Black Gum Habitat                |                            |                     |
|                                      | HLS-002 (SCC-B)<br>Halberd-leaved Smartweed Habitat |                            |                     |
|                                      | SHO-002 (SCC-B)<br>Shumard Oak Habitat              |                            |                     |

<sup>1</sup> Mitigation measure is applicable during the construction and decommissioning phases of the Project; please refer to Table 8 for more details.

<sup>2</sup> Mitigation measure is applicable during the operational phase of the Project; please refer to Table 9 for more details.

\*Mitigation measures are only applicable if the habitats described in this table are determined to be significant through pre-construction surveys (if applicable), as described in Section 6.1

\*\* Does not include Bald Eagle Habitat, BAL-001, which has been included in Table 4 above.

¥ The possible bald eagle nest record is located greater than 120m from the Project Location, but has the potential to overlap with Project Infrastructure if an up to 800m buffer is applied to the habitat, which will be determined by the site investigation and/or evaluation of significance surveys completed as part of pre-construction commitments for this feature.



### 5.2.3 Generalized Impacts to Wildlife Habitat

In addition to the SWHs identified above, NRSI biologists have identified a number of wildlife habitat types that are, or may be, present within 120m of the Project Location, but are located within 120m of, and not overlapping, Project components that do not require these habitats to be individually delineated, as per Table 19 of Appendix D of the NHA Guide (OMNR 2012). In accordance with the NHA Guide for Renewable Energy Projects (OMNR 2012), potential impacts to these habitats are typically associated with the temporary disturbance caused by construction activity, which can be grouped together as generalized impacts and can be addressed through general construction mitigation measures. By definition, general construction mitigation measures are intended to be tailored to the proposed construction activity(ies) and not required to address any specific habitat(s) which have the potential to occur within a generalized SWH area (OMNR 2012).

NRSI biologists have reviewed the full suite of wildlife habitats that require generalized consideration, and have compiled a comprehensive list of proposed mitigation measures that will be implemented during the construction and decommissioning phases of the Project (Table 6).

Many of the recommended mitigation measures, performance objectives, monitoring commitments, and contingency plans are consistent between natural features, SWH, and generalized SWH. As such, recommended mitigation measures have been listed in Table 6 below (e.g. Minimization of Erosion and Sedimentation, Posting of On-site Speed Limits, etc.), while the details of each listed mitigation measure, including performance objectives, monitoring commitments, and contingency plans, are provided in Table 8 (applicable to the construction and decommissioning phases of the Project) and/or Table 9 (applicable to the operations phase of the Project). Table 8 and Table 9 also identify the location(s) where the mitigation measure(s) and associated performance objectives, monitoring commitments, and contingency plans apply, depending on the natural feature type and distance to the Project Location.

**Table 6. Potential Negative Effects and Mitigation Measures for Generalized Significant Wildlife Habitats During the Construction and Decommissioning Phases of the Project**

| Project Component   | Project Activity  | Potential Negative Effects to Generalized SWHs Located within 120m  | Mitigation Measures <sup>1</sup>  |
|---|---|---|---|
| Structures<br>(Substation, meteorological tower, PCC, and O&M building) | Clearing, grubbing, grading, excavation, and topsoil removal          | N/A   | N/A   |
|   | Noise/human activity  |   |   |
|   | Accidental damage or removal of vegetation                            |   |   |
|   | Spills or accidental fluid release (i.e. oil, gasoline, grease, etc.) |   |   |
|   | Installation of impervious surfaces                                   |   |   |
|   | Dewatering activities (if necessary)                                  |   |   |
| Turbines<br>(Erection/Dismantling)                                      | Clearing, grubbing, grading, excavation, and topsoil removal          | <ul style="list-style-type: none"> <li>• Erosion and sedimentation</li> <li>• Fugitive dust emission</li> <li>• Changes in soil moisture</li> </ul> | <ul style="list-style-type: none"> <li>• Minimization of Erosion and Sedimentation</li> <li>• Minimization of Fugitive Dust Emission</li> <li>• Minimization of Impacts to Soil Moisture</li> </ul> |
|   | Noise/human activity  | <ul style="list-style-type: none"> <li>• Disturbance and/or mortality to local wildlife</li> </ul>  | <ul style="list-style-type: none"> <li>• Adherence to Wildlife Timing Windows (Generalized SWHs)</li> <li>• Post On-site Speed Limits</li> </ul>  |
|   | Accidental damage or removal of vegetation                            | <ul style="list-style-type: none"> <li>• Damage or removal of vegetation adjacent to the Project Location</li> </ul>                                | <ul style="list-style-type: none"> <li>• Delineation of Work Area</li> </ul>  |
|   | Spills or accidental fluid release (i.e. oil, gasoline, grease, etc.) | <ul style="list-style-type: none"> <li>• Soil or water contamination</li> </ul>   | <ul style="list-style-type: none"> <li>• Minimization of Spills</li> </ul>  |
|   | Dewatering activities (if necessary)                                  | <ul style="list-style-type: none"> <li>• Reduced groundwater discharge</li> </ul>   | <ul style="list-style-type: none"> <li>• Minimization of Impacts to Groundwater Discharge</li> </ul>  |
|   | Installation of impervious surfaces                                   | <ul style="list-style-type: none"> <li>• Changes in soil moisture</li> <li>• Reduced infiltration</li> </ul>  | <ul style="list-style-type: none"> <li>• Minimization of Impacts to Soil Moisture</li> <li>• Minimization of Impacts to Infiltration</li> </ul>   |
| Permanent Access Roads  | Clearing, grubbing, grading, and topsoil removal                      | <ul style="list-style-type: none"> <li>• Erosion and sedimentation</li> <li>• Fugitive dust emission</li> <li>• Changes in soil moisture</li> </ul> | <ul style="list-style-type: none"> <li>• Minimization of Erosion and Sedimentation</li> <li>• Minimization of Fugitive Dust Emission</li> <li>• Minimization of Impacts to Soil Moisture</li> </ul> |
|   | Noise/human activity  | <ul style="list-style-type: none"> <li>• Disturbance and/or mortality to local wildlife</li> </ul>  | <ul style="list-style-type: none"> <li>• Adherence to Wildlife Timing Windows (Generalized SWHs)</li> <li>• Post On-site Speed Limits</li> </ul>  |
|   | Accidental damage or removal of vegetation                            | <ul style="list-style-type: none"> <li>• Damage or removal of vegetation adjacent to the Project Location</li> </ul>                                | <ul style="list-style-type: none"> <li>• Delineation of Work Area</li> </ul>  |
|   | Spills or accidental fluid release (i.e. oil, gasoline, grease, etc.) | <ul style="list-style-type: none"> <li>• Soil or water contamination</li> </ul>   | <ul style="list-style-type: none"> <li>• Minimization of Spills</li> </ul>  |
|   | Installation of impervious surfaces                                   | <ul style="list-style-type: none"> <li>• Changes in soil moisture</li> <li>• Reduced infiltration</li> </ul>  | <ul style="list-style-type: none"> <li>• Minimization of Impacts to Soil Moisture</li> <li>• Minimization of Impacts to Infiltration</li> </ul>   |
| Electrical Collector Lines<br>(Overhead or Underground)                 | Clearing, grubbing, grading, excavation, and topsoil removal          | <ul style="list-style-type: none"> <li>• Erosion and sedimentation</li> <li>• Fugitive dust emission</li> <li>• Changes in soil moisture</li> </ul> | <ul style="list-style-type: none"> <li>• Minimization of Erosion and Sedimentation</li> <li>• Minimization of Fugitive Dust Emission</li> <li>• Minimization of Impacts to Soil Moisture</li> </ul> |
|   | Noise/human activity  | <ul style="list-style-type: none"> <li>• Disturbance and/or mortality to local wildlife</li> </ul>  | <ul style="list-style-type: none"> <li>• Adherence to Wildlife Timing Windows</li> </ul>  |

**Table 6. Potential Negative Effects and Mitigation Measures for Generalized Significant Wildlife Habitats During the Construction and Decommissioning Phases of the Project**

| Project Component         | Project Activity  | Potential Negative Effects to Generalized SWHs Located within 120m | Mitigation Measures <sup>1</sup>                   |
|---------------------------|---|--|--|
|                           |   |  | (Generalized SWHs)<br>• Post On-site Speed Limits  |
|                           | Accidental damage or removal of vegetation                            | • Damage or removal of vegetation adjacent to the Project Location | • Delineation of Work Area                         |
|                           | Spills or accidental fluid release (i.e. oil, gasoline, grease, etc.) | • Soil or water contamination                                      | • Minimization of Spills                           |
|                           | Dewatering activities (if necessary)                                  | • Reduced groundwater discharge                                    | • Minimization of Impacts to Groundwater Discharge |
| Construction Staging Area | Clearing, grubbing, grading, and topsoil removal                      | N/A  | N/A  |
|                           | Noise/human activity  |  |  |
|                           | Accidental damage or removal of vegetation                            |  |  |
|                           | Spills or accidental fluid release (i.e. oil, gasoline, grease, etc.) |  |  |
|                           | Installation of impervious surfaces                                   |  |  |

<sup>1</sup> Mitigation measures are applicable during the construction and decommissioning phases of the Project; please refer to Table 8 for more details.

## 6.0 Summary of Commitments

For each natural feature or wildlife habitat that has been determined to be significant, including treated as significant, NRSI biologists have identified potential negative effects, proposed mitigation measures, performance objectives, monitoring commitments, and contingency plans associated with the construction, operation, and decommissioning phases of the Project.

NRSI has summarized the full extent of commitments for the Project in the sections below, including:

- Pre-Construction Monitoring Commitments
- Construction and Decommissioning Phase Commitments
  - Detailed Mitigation Measures
  - Performance Objectives
  - Monitoring Commitments
  - Contingency Plans
- Operational Phase Commitments
  - Detailed Mitigation Measures
  - Performance Objectives
  - Monitoring Commitments
  - Contingency Plans
- Post-Construction Monitoring Commitments

### 6.1 Pre-Construction Monitoring Commitments

In accordance with the NHA process, NRSI biologists have identified 15 natural features that have been treated as significant until additional pre-construction surveys can be completed to confirm (or deny) the significance based on provincially accepted evaluation criteria as outlined in the SWH Criteria Schedules for Ecoregion 7E (MNRF 2015). The pre-construction surveys that will be conducted as part of the commitments made in the EOS, and reiterated in this EIS, are summarized in Table 7.

Another 43 candidate significant habitats have been treated as significant with no commitment to conduct pre-construction surveys, as site access to these habitats was denied during the site investigation and evaluation of significance phases.

**Table 7. Summary of Pre-Construction Monitoring Commitments for the Project**

| Wildlife Habitat Type | Generalized Methods*                                   | Applicable Feature(s) |
|-----------------------|--|-----------------------|
| Eastern Wood-         | The following evaluation methods (shown below) will be | EWP-001 (SCC-A)       |

**Table 7. Summary of Pre-Construction Monitoring Commitments for the Project**

| Wildlife Habitat Type                                   | Generalized Methods*  | Applicable Feature(s)  |
|---|---|--|
| <p>Pewee<br/>(<i>Contopus virens</i>)</p>               | <p>implemented for EWP-001 and the accessible portions of EWP-005. They will also be implemented along the property line for EWP-003 and EWP-004 where specific site access was denied in 2016.</p> <p>NRSI will conduct 10-minute point count surveys within (or adjacent to) each candidate SWH for eastern wood-pewee. Each point count station will be surveyed 3 times during the period of June to early July, 2017, with no less than 10 days between visits.</p> <p>The number of point counts required will be based on the size and habitat diversity at each site. Following the <i>Birds and Bird Habitats Guidelines for Wind Power Projects</i> (OMNR 2011a), point counts will be spaced at least 250m apart in forests, ideally with the centre point at least 100m from the habitat edge. Where more than one point count will be conducted within each candidate habitat, a standardized transect will also be conducted between point count sites.</p> <p>Surveys will be conducted between dawn (one half hour before sunrise) and 3 hours after sunrise, a time period when males are expected to be actively singing and defending territories.</p> <p>Days with high wind speeds and rain will be avoided. During each visit, the highest observed breeding evidence will be recorded for each species.</p> <p>The monitoring locations within these candidate significant habitats have been determined based on conditions of the site. The locations of each of the candidate significant habitats and proposed monitoring stations can be seen on Maps 6-1 to 6-5.</p> | <p>EWP-003 (SCC-D)<br/>EWP-004 (SCC-G)<br/>EWP-005 (SCC-H)</p> |
| <p>Bald Eagle<br/>(<i>Haliaeetus leucocephalus</i>)</p> | <p>If the possible bald eagle nest record, BAL-002, is determined to be present and active during the pre-construction site investigation survey, the following methods will be conducted at this location before construction of the Project begins.</p> <p>Following the completion of a site investigation survey in the month of March to confirm the current use and activity of the nest, NRSI will conduct additional surveys in accordance with the <i>Significant Wildlife Habitat Criteria Schedules for Ecoregion 7E</i> (MNRF 2015), the <i>Bald Eagle Habitat Management Guidelines</i> (OMNR 1987) and the <i>Birds and Bird Habitats: Guidelines for Wind Power Projects</i> (OMNR 2011a). The monitoring program will consist of twice-weekly surveys near the active bald eagle nest, from March until mid-August, or whenever the chick(s) leaves the nest. Twice-weekly surveys during this time period will allow for the collection of all appropriate information regarding the behaviour and habitat use of the bald eagles, including any successful juveniles, to support the delineation of habitat zones surrounding the nest in accordance with the Bald Eagle Habitat Management Guidelines (OMNR 1987).</p> <p>The behavioural study will focus on the flight patterns, sight lines, perching habitat, and foraging habitat of the nesting eagles and any juveniles in order to refine the habitat zones around the</p>   | <p>BAL-002</p>   |

**Table 7. Summary of Pre-Construction Monitoring Commitments for the Project**

| Wildlife Habitat Type  | Generalized Methods*  | Applicable Feature(s)  |
|--|---|--|
|  | <p style="text-align: center;">nest.</p> <p>On each survey date, a biologist, using binoculars or a spotting scope, will document and map all activity of the eagle(s) for at least 4 hours of combined monitoring from at least one suitable vantage point on each visit. All bald eagle behaviour will be recorded during the survey, with the approximate location, age, and behaviour (e.g. courtship, nest building, incubation), including mapping all flight corridors and habitats used. All bald eagle movements within an 800m radius from the nest will be recorded. Surveys will be completed during calm, clear weather conditions, when possible.</p> <p>The location of the potentially significant nest can be seen on Maps 5-1 to 5-5.</p> |  |
| <p>Cattail Sedge<br/>(<i>Carex typhina</i>)</p>                  | <p>One standardized area search will be conducted within each of the 2 candidate significant cattail sedge habitats (CSE-001 and CSE-003) within 120m of the Project Location. The UTM location of any individuals or clusters will be recorded and a stem count will be conducted. Surveys will be conducted during a time period when this species exhibits characteristics that allow for confident identification, which is during the fruiting period of June to August.</p> <p>The locations of each of the candidate significant habitats can be seen on Maps 6-1 to 6-5.</p>  | <p>CSE-001 (SCC-A)<br/>CSE-003 (SCC-C)<br/>CSE-007 (SCC-E)</p> |
| <p>Pumpkin Ash<br/>(<i>Fraxinus profunda</i>)</p>                | <p>One standardized area search will be conducted within each of the 2 candidate significant pumpkin ash habitats (PAS-001 and PAS-003) within 120m of the Project Location. The UTM location of any individuals or clusters will be recorded and a stem count will be conducted. Surveys will be conducted during a time period when this species exhibits characteristics that allow for confident identification, which is when fruit and leaves are present between August and mid-October.</p> <p>The locations of each of the candidate significant habitats can be seen on Maps 6-1 to 6-5.</p>  | <p>PAS-001 (SCC-A)<br/>PAS-003 (SCC-C)<br/>PAS-007 (SCC-E)</p> |
| <p>Halberd-leaved Smartweed<br/>(<i>Persicaria arifolia</i>)</p> | <p>One standardized area search will be conducted within each of the candidate halberd-leaved smartweed habitats (HLS-001 and HLS-003). The UTM location of any individuals or clusters will be recorded and a stem count will be conducted. Surveys will be conducted during a time period when this species exhibits characteristics that allow for confident identification, which is when flowers are present between June and July.</p> <p>The locations of each of the candidate significant habitats can be seen on Maps 6-1 to 6-5.</p>   | <p>HLS-001 (SCC-A)<br/>HLS-003 (SCC-C)</p>                     |
| <p>Shumard Oak<br/>(<i>Quercus shumardii</i>)</p>                | <p>One standardized area search will be conducted within each of the 2 candidate significant Shumard oak habitats (SHO-001 and SHO-003) within 120m of the Project Location. The UTM location of any individuals or clusters will be recorded and a stem count will be conducted. Surveys will be conducted during a time period when this species exhibits characteristics that allow for confident identification, preferably during the period of October to December when leaves and fully-developed acorns are available. The absence of the species can also be confirmed year-round if no other similar oak species are present</p>  | <p>SHO-001 (SCC-A)<br/>SHO-003 (SCC-C)</p>                     |

**Table 7. Summary of Pre-Construction Monitoring Commitments for the Project**

| Wildlife Habitat Type | Generalized Methods*  | Applicable Feature(s) |
|-----------------------|---|-----------------------|
|                       | <p style="text-align: center;">in a given habitat.</p> <p>The locations of each of the candidate significant habitats can be seen on Maps 6-1 to 6-5.</p> |                       |

\* *The survey methods described have assumed that site access will be granted. In the event that specific site access is not available for all, or part, of a specific feature, a potential alternative survey method will be conducted and/or the habitat will continue to be treated as significant.*

## 6.2 Construction and Decommissioning Phase Commitments

The sections above list several mitigation measures that are recommended to limit potential impacts to the identified significant natural features and wildlife habitats during the construction and decommissioning of the Project. The specific details of these proposed mitigation measures, as well as the associated performance objectives, monitoring commitments, and contingency plans are provided in Table 8, along with the location(s) where each of the mitigation measure(s) and associated performance objectives, monitoring commitments, and contingency plans apply (dependent on the SWH type and distance to the Project Location).

The table below consolidates the construction and decommissioning mitigation measures that are applicable to the natural heritage features and wildlife habitats that have been identified through the NHA process. These proposed mitigation measures, along with other proposed mitigation measures not associated with natural heritage, have been included in the *Construction Plan Report* (DNV-GL 2017a) and *Decommissioning Plan Report* (DNV-GL 2017c).

**Table 8. Detailed Mitigation Measures, Performance Objectives, Monitoring Commitments, and Contingency Plans Recommended During the Construction and Decommissioning Phases of the Project**

| Mitigation Measure   | Details of Proposed Mitigation Measure   | Performance Objective(s)   | Monitoring Commitment(s)   | Contingency Plan(s)   | Applicable Features(s)   |
|--|--|--|--|---|--|
| Adherence to Wildlife Timing Windows (Bald Eagle Habitat)          | <ul style="list-style-type: none"> <li>No construction and decommissioning activities permitted within the tertiary zone (as determined by site-specific surveys) between March 1<sup>st</sup> – May 15<sup>th</sup>.</li> <li>Construction and decommissioning activities that are consistent with, or similar to, agricultural and municipal activities that are already occurring within the tertiary zone will be permitted from May 16<sup>th</sup> – February 28<sup>th</sup> within the tertiary zone, including: <ul style="list-style-type: none"> <li>Vehicle traffic,</li> <li>Delivery of equipment, including turbines,</li> <li>Site clearing and grading,</li> <li>Access road construction,</li> <li>Culvert installation,</li> <li>Underground line installation,</li> <li>Turbine foundation installation.</li> </ul> </li> <li>Construction activities that will not be permitted within the tertiary zone between February 1<sup>st</sup> – August 15<sup>th</sup> include: <ul style="list-style-type: none"> <li>Turbine erection</li> </ul> </li> </ul> | To minimize disturbance and displacement to nesting bald eagles.   | <ul style="list-style-type: none"> <li>During construction and decommissioning, monitoring of the eagle nest will follow the methods implemented during the evaluation of significance phase of the Project and will occur for the duration that construction and decommissioning activities occur within the tertiary zone (as determined by site-specific surveys) of the nest within the period of February 1<sup>st</sup> - August 15<sup>th</sup>, exclusive of March 1<sup>st</sup> - May 15<sup>th</sup>, when no construction will be permitted within the tertiary zone of the active nest.</li> <li>Surveys will be conducted in the year construction is occurring to determine if the nest is active. If surveys are conducted from February 1<sup>st</sup> to April 15<sup>th</sup> and no eagle activity has been documented, the nest will be considered inactive that year and no construction timing window will apply to the habitat.</li> </ul> | <ul style="list-style-type: none"> <li>No contingency plan required.</li> </ul>   | Overlapping the following SWH: <b>BAL-001, 002*</b>                |
| Adherence to Wildlife Timing Windows (Bat Maternity Colony)        | <ul style="list-style-type: none"> <li>No construction and decommissioning activities during the critical roosting period (June 1<sup>st</sup> – June 30<sup>th</sup>).</li> </ul>   | To minimize disturbance, displacement, and mortality to roosting bats.                                       | <ul style="list-style-type: none"> <li>Regular environmental monitoring will occur during the construction and decommissioning phase.</li> </ul>   | <ul style="list-style-type: none"> <li>No contingency plan required.</li> </ul>   | Within 30m of the following SWH: <b>BMA-002, 003</b>               |
| Adherence to Wildlife Timing Windows (Eastern Wood-Pewee Habitats) | <ul style="list-style-type: none"> <li>No construction and decommissioning activities during the breeding bird period (May 1<sup>st</sup> – July 31<sup>st</sup>) to minimize potential disturbance to</li> </ul>  | To minimize the potential disturbance, displacement, and/or mortality to birds that might be breeding within | <ul style="list-style-type: none"> <li>Regular environmental monitoring will occur during the construction and decommissioning phase.</li> <li>Regular biological</li> </ul>   | <ul style="list-style-type: none"> <li>If construction or decommissioning activities must occur during the breeding bird period (May 1<sup>st</sup> – July 31<sup>st</sup>), a biologist</li> </ul> | Within 30m of the following SWH: <b>EWP-001*, 003*, 004*, 005*</b> |



**Table 8. Detailed Mitigation Measures, Performance Objectives, Monitoring Commitments, and Contingency Plans Recommended During the Construction and Decommissioning Phases of the Project**

| Mitigation Measure  | Details of Proposed Mitigation Measure   | Performance Objective(s)   | Monitoring Commitment(s)  | Contingency Plan(s)   | Applicable Features(s)  |
|---|--|--|---|---|---|
|   | <p>breeding birds.</p> <ul style="list-style-type: none"> <li>Schedule construction and decommissioning activities to occur during daylight hours to avoid excessive noise and/or light disturbances to wildlife, wherever practicable.</li> </ul> | <p>these habitats.</p> <p>To minimize impacts on species that are relatively inactive at night and not accustomed to nighttime disturbances.</p> | <p>monitoring of breeding birds is required if construction and/or decommissioning activities will occur during the peak breeding season.</p>   | <p>will conduct nest searches in areas where natural vegetation will be removed. If an active bird nest is identified in the location where natural vegetation clearing is proposed, the area will be protected and no construction activities will occur until the young have fledged or until the nest is no longer active, as confirmed by a qualified biologist.</p> <ul style="list-style-type: none"> <li>If construction or decommissioning activities must occur outside of daylight hours, spotlights will be directed downward and/or away from the features to limit potential light disturbance to breeding birds.</li> </ul> |   |
| <p>Adherence to Wildlife Timing Windows (Colonially-Nesting Breeding Bird Habitat [Trees/Shrubs])</p> | <ul style="list-style-type: none"> <li>No construction and decommissioning activities during the peak breeding season (April 1<sup>st</sup> – August 31<sup>st</sup>).</li> </ul>  | <p>To minimize disturbance, displacement, and mortality to colonially-nesting birds.</p>   | <ul style="list-style-type: none"> <li>Regular environmental monitoring will occur during the construction and decommissioning phase.</li> <li>Regular biological monitoring of breeding birds is required if construction and/or decommissioning activities will occur during the peak breeding season.</li> </ul> | <ul style="list-style-type: none"> <li>If construction or decommissioning activities must occur during peak breeding season, a biologist will be present to confirm nesting birds will not be impacted by construction or decommissioning activities. If an active nest is identified in the location where natural vegetation clearing is proposed, the area will be protected and no construction activities will occur until the young have fledged.</li> </ul>  | <p>Within 30m of the following SWH:<br/><b>CBT-002, 003</b></p> |
| <p>Adherence to Wildlife</p>  | <ul style="list-style-type: none"> <li>No construction and</li> </ul>  | <p>To minimize the potential</p>   | <ul style="list-style-type: none"> <li>Regular environmental</li> </ul>   | <ul style="list-style-type: none"> <li>If construction or</li> </ul>  | <p>Within 30m of the</p>  |

**Table 8. Detailed Mitigation Measures, Performance Objectives, Monitoring Commitments, and Contingency Plans Recommended During the Construction and Decommissioning Phases of the Project**

| Mitigation Measure  | Details of Proposed Mitigation Measure   | Performance Objective(s)   | Monitoring Commitment(s)  | Contingency Plan(s)  | Applicable Features(s)  |
|---|--|--|---|--|---|
| Timing Windows (Generalized SWHs)                                       | <p>decommissioning activities during the breeding bird period (May 1<sup>st</sup> – July 31<sup>st</sup>) to minimize potential disturbance to breeding birds.</p> <ul style="list-style-type: none"> <li>Schedule construction and decommissioning activities to occur during daylight hours to avoid excessive noise and/or light disturbances to wildlife, wherever practicable.</li> </ul> | <p>disturbance, displacement, and/or mortality to species that might be breeding within these habitats.</p> <p>To minimize impacts on species that are not accustomed to nighttime disturbances.</p> | <p>monitoring will occur during the construction and decommissioning phase.</p> <ul style="list-style-type: none"> <li>Regular biological monitoring of breeding birds is required if construction and/or decommissioning activities will occur during the peak breeding season.</li> </ul> | <p>decommissioning activities must occur during the breeding bird period (May 1<sup>st</sup> – July 31<sup>st</sup>), a biologist will conduct nest searches in areas where natural vegetation will be removed. If an active bird nest is identified in the location where natural vegetation clearing is proposed, the area will be protected and no construction activities will occur until the young have fledged or until the nest is no longer active, as confirmed by a qualified biologist.</p> <ul style="list-style-type: none"> <li>If construction or decommissioning activities must occur outside of daylight hours, spotlights will be directed downward and/or away from the features to limit potential light disturbance.</li> </ul> | <p>following SWH:<br/><b>Generalized SWHs</b></p>   |
| Adherence to Wildlife Timing Windows (Landbird Migratory Stopover Area) | <ul style="list-style-type: none"> <li>Schedule construction and decommissioning activities during the spring and fall landbird migratory stopover period (March 1<sup>st</sup> – May 31<sup>st</sup> and August 1<sup>st</sup> – October 31<sup>st</sup>) to occur during daylight hours to avoid disruptions to migratory behaviour.</li> </ul>  | <p>To minimize disturbance, displacement, and mortality to migratory landbirds.</p>  | <ul style="list-style-type: none"> <li>Regular environmental monitoring will occur during the construction and decommissioning phase.</li> </ul>  | <ul style="list-style-type: none"> <li>If construction and decommissioning activities must occur outside of daylight hours, spotlights will be directed downwards and/or away from the woodland to minimize potential impacts to migratory landbirds.</li> </ul>   | <p>Within 30m of the following SWH:<br/><b>LMS-001, 002</b></p>   |
| Delineation of Work Area  | <ul style="list-style-type: none"> <li>Clearly delineate work area using erosion fencing or other suitable barrier to avoid accidental damage or removal of retained species.</li> <li>The on-site environmental</li> </ul>  | <p>To avoid accidental damage or removal of vegetation within significant woodlands, SWHs, and Generalized SWHs.</p>   | <ul style="list-style-type: none"> <li>Undertake regular monitoring of the dripline within 10m of construction activities for the duration of the construction and decommissioning phases</li> </ul>  | <ul style="list-style-type: none"> <li>Prune any tree limbs or roots that are accidentally damaged by construction activities using proper arboricultural techniques.</li> <li>Accidental damage to</li> </ul>   | <p>Within 30m of or overlapping any of the following:<br/><b>WOD-001, 002, 004, 005, 006, 007, 011, 013, BAL-001, 002*</b>,</p> |

**Table 8. Detailed Mitigation Measures, Performance Objectives, Monitoring Commitments, and Contingency Plans Recommended During the Construction and Decommissioning Phases of the Project**

| Mitigation Measure                                   | Details of Proposed Mitigation Measure   | Performance Objective(s)   | Monitoring Commitment(s)  | Contingency Plan(s)  | Applicable Features(s)  |
|--|--|--|---|--|---|
|  | <p>monitor may also consider substituting other demarcating types for fencing, such as staking and flagging, where it is determined that there is no apparent risk to significant woodlands, SWHs, or Generalized SWHs. This could include instances where the significant features are at a higher elevation than the occurring construction activity.</p> <ul style="list-style-type: none"> <li>• The on-site environmental monitor will be a contractor with experience providing environmental recommendations on a large-scale construction site.</li> <li>• Erect erosion fencing, or other barrier, to correspond to the disturbance area limits.</li> <li>• Place the erosion fencing, or other barrier, as far away as practicable from the feature or SWH, and no closer than the dripline.</li> <li>• Locate all directional drill entry and exit pits a sufficient distance from the edge of significant natural features, SWHs, and Generalized SWHs, to maintain a vertical depth of at least 1.5m at all times below the natural feature to protect the critical root zone.</li> </ul> |  | <p>of this Project. This monitoring will be conducted at a minimum frequency of once per week when construction is anticipated within 10m of a significant woodland, SWH, or Generalized SWH.</p> <ul style="list-style-type: none"> <li>• Undertake regular monitoring of the dripline to ensure the work area is clearly delineated and dripline boundaries are respected when construction is anticipated to occur within 10-30m of significant woodlands, SWHs, or Generalized SWHs, at a minimum frequency of once per month.</li> </ul> | <p>trees, or unexpected vegetation removal, may require re-planting of similar, native species, depending on the extent of damage incurred.</p>  | <p><b>BMA-002, 003, CBT-002, 003, LMS-001, 002, EWP-001*, 003*, 004*, 005*, SHS-004, 005, 006, SQS-004, 005, 006, CSE-001*, 003*, 004, 005, 006, SHH-004, 005, 006, PAS-001*, 003*, 004, 005, 006, BGU-004, 005, 006, HLS-001*, 003*, 004, 005, 006, SHO-001*, 003*, 004, 005, 006, CPR-001, Generalized SWHs</b></p> |
| Disturbance/Avoidance Behaviour (Bald Eagle Habitat) | <ul style="list-style-type: none"> <li>• Conduct disturbance monitoring during construction and decommissioning (refer to monitoring commitments).</li> </ul>  | To minimize disturbance and displacement to nesting bald eagles. | <ul style="list-style-type: none"> <li>• During construction and decommissioning, monitoring of the eagle nest will follow the methods implemented during the evaluation of significance phase of the Project and</li> </ul>  | <ul style="list-style-type: none"> <li>• If disturbance or avoidance behaviour is observed during monitoring, the MNRF will be notified of appropriate contingency measures that will be implemented, which</li> </ul> | Overlapping the following SWH: <b>BAL-001, BAL-002*</b>   |

**Table 8. Detailed Mitigation Measures, Performance Objectives, Monitoring Commitments, and Contingency Plans Recommended During the Construction and Decommissioning Phases of the Project**

| Mitigation Measure  | Details of Proposed Mitigation Measure   | Performance Objective(s)  | Monitoring Commitment(s)  | Contingency Plan(s)   | Applicable Features(s)  |
|---------------------|--|---|---|---|---|
|                     |  |   | <p>will occur for the duration that construction and decommissioning activities occur within the tertiary zone (as determined by site-specific surveys) of the nest within the period of February 1<sup>st</sup> - August 15th, exclusive of March 1st - May 15<sup>th</sup>, when no construction will be permitted within the tertiary zone of the active nest.</p> <ul style="list-style-type: none"> <li>Surveys will be conducted in the year construction is occurring to determine if the nest is active. If surveys are conducted from February 1<sup>st</sup> to April 15<sup>th</sup> and no eagle activity has been documented, the nest will be considered inactive and no further monitoring will be required in that year.</li> </ul> | <p>may include halting construction within the general area of the nest if bald eagles are present.</p> |   |
| Herbicide Avoidance | <ul style="list-style-type: none"> <li>Avoid the use of herbicides (Project related activities only).</li> </ul> | <p>To minimize potential impacts to natural vegetation species in significant woodlands/wetlands, SWHs, and Generalized SWHs.</p> | <ul style="list-style-type: none"> <li>Regular environmental monitoring will occur during the construction and decommissioning phase.</li> </ul>  | <ul style="list-style-type: none"> <li>No contingency plan required.</li> </ul>                         | <p>Within 30m of or overlapping any of the following:<br/> <b>WOD</b>-001, 002, 004, 005, 006, 007, 011, 013, <b>WET</b>-001, 003, 004, 005, 006, 008, <b>BAL</b>-001, 002*, <b>BMA</b>-002, 003, <b>CBT</b>-002, 003, <b>LMS</b>-001, 002, <b>EWP</b>-001*, 003*, 004*, 005*, <b>SHS</b>-004, 005, 006, <b>SQS</b>-004, 005, 006, <b>CSE</b>-001*, 003*, 004, 005, 006, <b>SHH</b>-004, 005, 006, <b>PAS</b>-001*, 003*, 004, 005,</p> |

**Table 8. Detailed Mitigation Measures, Performance Objectives, Monitoring Commitments, and Contingency Plans Recommended During the Construction and Decommissioning Phases of the Project**

| Mitigation Measure                              | Details of Proposed Mitigation Measure  | Performance Objective(s)  | Monitoring Commitment(s)   | Contingency Plan(s)   | Applicable Features(s)  |
|---|---|---|--|---|---|
|   |   |   |  |   | 006, <b>BGU</b> -004, 005, 006, <b>HLS</b> -001*, 003*, 004, 005, 006, <b>SHO</b> -001*, 003*, 004, 005, 006, <b>CPR</b> -001 |
| Microsite Project Location (Bald Eagle Habitat) | <ul style="list-style-type: none"> <li>• Project layout has been developed so that the Project Location occurs at least 400m from the bald eagle nest location, and outside of both the primary and secondary habitat zones.</li> <li>• No overhead electrical collector lines or poles will be located within the tertiary zone (as determined by site-specific surveys).</li> <li>• Project infrastructure will be placed within the Project Location and preferentially located furthest from the eagle nest.</li> </ul> | <p>To minimize disturbance and displacement to nesting bald eagles.</p> <p>To avoid impacts to primary and secondary habitat zones for bald eagles.</p> | <ul style="list-style-type: none"> <li>• During construction and decommissioning, monitoring of the eagle nest will follow the methods implemented during the evaluation of significance phase of the Project and will occur for the duration that construction and decommissioning activities occur within the tertiary zone (as determined by site-specific surveys) of the nest within the period of February 1st - August 15th, exclusive of March 1st - May 15th, when no construction will be permitted within the tertiary zone of the active nest.</li> <li>• Surveys will be conducted in the year construction is occurring to determine if the nest is active. If surveys are conducted from February 1st to April 15th and no eagle activity has been documented, the nest will be considered inactive and no further monitoring will be required in that year.</li> </ul> | <ul style="list-style-type: none"> <li>• If disturbance or avoidance behaviour is observed during monitoring, the MNRF will be notified of appropriate contingency measures that will be implemented, which may include halting construction within the general area of the nest if bald eagles are present.</li> </ul> | Overlapping the following SWH: <b>BAL</b> -001, 002*  |
| Minimization of Erosion and Sedimentation       | <ul style="list-style-type: none"> <li>• Develop and implement an erosion and sediment control (ESC) plan.</li> <li>• Install, monitor, and maintain ESC measures (i.e. erosion</li> </ul>  | To minimize potential impacts associated with erosion and sedimentation in significant  | <ul style="list-style-type: none"> <li>• Monitor sediment and erosion control measures, such as erosion fencing, and check dams daily in areas where work is taking</li> </ul>   | <ul style="list-style-type: none"> <li>• If deficiencies in sediment and erosion control measures are noted, the on-site environmental monitor will notify the</li> </ul>   | Within 30m of the following: <b>WOD</b> -001, 002, 004, 005, 006, 007, 011, 013, <b>WET</b> -001, 003,                        |

**Table 8. Detailed Mitigation Measures, Performance Objectives, Monitoring Commitments, and Contingency Plans Recommended During the Construction and Decommissioning Phases of the Project**

| Mitigation Measure | Details of Proposed Mitigation Measure   | Performance Objective(s)   | Monitoring Commitment(s)   | Contingency Plan(s)  | Applicable Features(s)   |
|--------------------|--|--|--|--|--|
|                    | <p>fencing) around the Project Location for the duration of the construction or decommissioning activities, as identified within the ESC plan.</p> <ul style="list-style-type: none"> <li>• Erect erosion fencing, or other barrier, to correspond to the construction disturbance area limits.</li> <li>• Place the erosion fencing, or other barrier, as far away as practicable from the identified feature(s), and no closer than the dripline.</li> <li>• Depending on site-specific conditions, such as steep topography and the presence of direct, or regular, surface water flow, the on-site environmental monitor may consider substituting other styles of fencing, when appropriate.</li> <li>• Utilize erosion blankets, silt fencing, straw bales, etc. for construction.</li> <li>• Store any stockpiled material more than 30m from significant natural features, SWHs, and Generalized SWHs throughout the construction and decommissioning phases.</li> <li>• Schedule grading to avoid times of high runoff volumes, wherever practicable. Re-vegetate areas adjacent to the feature(s) as soon as practicable after construction activities are complete.</li> <li>• Collect directional drill cuttings as they are generated and placed in a soil bin or bag for off-site disposal.</li> </ul> | <p>woodlands/wetlands, significant plant habitats, and Generalized SWHs.</p> | <p>place and prior to and after any storm events.</p> <ul style="list-style-type: none"> <li>• Monitor sediment and erosion control measures weekly in areas where active construction is not occurring until the construction phase is complete.</li> </ul> | <p>general contractor and the Proponent and recommend remedial actions.</p> <ul style="list-style-type: none"> <li>• Silt fencing, or other applicable sediment and erosion control measures, that is not working properly will be corrected.</li> <li>• If sedimentation and erosion control measures fail or/and degradation of the natural feature occurs, appropriate contingency measures will be implemented, which may include re-establishing mitigation measures, habitat remediation, and/or seeding of permanently damaged areas, depending on the extent of degradation incurred.</li> </ul> | <p>004, 005, 006, 008, <b>SHS</b>-004, 005, 006, <b>SQS</b>-004, 005, 006, <b>CSE</b>-001*, 003*, 004, 005, 006, <b>SHH</b>-004, 005, 006, <b>PAS</b>-001*, 003*, 004, 005, 006, <b>BGU</b>-004, 005, 006, <b>HLS</b>-001*, 003*, 004, 005, 006, <b>SHO</b>-001*, 003*, 004, 005, 006, <b>CPR</b>-001, <b>Generalized SWHs</b></p> |

**Table 8. Detailed Mitigation Measures, Performance Objectives, Monitoring Commitments, and Contingency Plans Recommended During the Construction and Decommissioning Phases of the Project**

| Mitigation Measure                           | Details of Proposed Mitigation Measure   | Performance Objective(s)   | Monitoring Commitment(s)   | Contingency Plan(s)   | Applicable Features(s)  |
|--|--|--|--|---|---|
|  | <ul style="list-style-type: none"> <li>Restore and re-vegetate directional drill entry/exit pits to pre-construction conditions as soon as practicable after construction.</li> </ul>  |  |  |   |   |
| Minimization of Fugitive Dust Emission       | <ul style="list-style-type: none"> <li>On-site speed limits will be clearly posted, applied, and followed by construction staff.</li> <li>Apply dust suppressants to unpaved areas when necessary to suppress dust, as determined by the on-site environmental monitor and the general contractor. Application frequency will vary, but will be determined by site specific weather conditions, including recent precipitation, temperatures, and wind speeds.</li> <li>Re-vegetate cleared areas as soon as reasonably practicable after construction activities are complete. Install wind fences, where determined to be necessary by the on-site environmental monitor. Installation of these fences will depend on site-specific conditions, including wind speeds, topography, land cover, and the extent of surrounding natural wind breaks.</li> </ul> | To minimize fugitive dust within significant natural features, SWHs, and Generalized SWHs.   | <ul style="list-style-type: none"> <li>Monitor dust control measures at a minimum frequency of weekly in areas where work is taking place.</li> <li>Monitor dust control measures at a minimum frequency of monthly in areas where active construction is not occurring until the construction phase is complete.</li> </ul> | <ul style="list-style-type: none"> <li>If fugitive dust is noted, the on-site environmental monitor will notify the general contractor and the Proponent and recommend remedial actions, if necessary.</li> <li>If fugitive dust control measures fail and degradation of the natural feature occurs, appropriate contingency measures will be implemented, which may include re-establishing mitigation measures, habitat remediation, and/or seeding of permanently damaged areas depending on the extent of degradation incurred.</li> </ul> | <p>Within 30m of the following:</p> <p><b>WOD-001, 002, 004, 005, 006, 007, 011, 013, WET-001, 003, 004, 005, 006, 008, BMA-002, 003, CBT-002, 003, LMS-001, 002, EWP-001*, 003*, 004*, 005*, SHS-004, 005, 006, SQS-004, 005, 006, CSE-001*, 003*, 004, 005, 006, SHH-004, 005, 006, PAS-001*, 003*, 004, 005, 006, BGU-004, 005, 006, HLS-001*, 003*, 004, 005, 006, SHO-001*, 003*, 004, 005, 006, CPR-001, Generalized SWHs</b></p> |
| Minimization of Impacts to Flood Attenuation | <ul style="list-style-type: none"> <li>Clearly delineate work area using erosion fencing, or other barrier, to minimize potential impacts to hydrological connectivity from loss of riparian vegetation.</li> <li>Depending on site-specific conditions, such as steep</li> </ul>  | <p>To minimize direct impacts on vegetation communities and protect significant wetlands.</p> <p>To minimize impacts to hydrological connectivity of significant wetlands.</p> | <ul style="list-style-type: none"> <li>Undertake regular monitoring of the identified feature(s) to ensure the work area is clearly delineated for the duration of the construction and decommissioning phases of the Project. This</li> </ul>   | <ul style="list-style-type: none"> <li>No contingency plan required.</li> </ul>   | <p>Within 30m of any of the following:</p> <p><b>WET-001, 003, 004, 005, 006, 008</b></p>   |

**Table 8. Detailed Mitigation Measures, Performance Objectives, Monitoring Commitments, and Contingency Plans Recommended During the Construction and Decommissioning Phases of the Project**

| Mitigation Measure                                      | Details of Proposed Mitigation Measure  | Performance Objective(s)  | Monitoring Commitment(s)   | Contingency Plan(s)   | Applicable Features(s)  |
|---|---|---|--|---|---|
|   | <p>topography and the presence of direct, or regular, surface water flow, the on-site environmental monitor may consider substituting other styles of fencing for erosion fencing, when appropriate.</p> <ul style="list-style-type: none"> <li>Where the temporary construction area is proposed to be within 5m of, but not overlapping by a method other than directional drilling, a wetland (excluding along existing municipal roads), design any permanent infrastructure (i.e., access roads) to be 5m from the wetland edge and plant native vegetation in the 5m buffer between the infrastructure and wetland edge as soon as reasonably practicable after construction.</li> <li>Re-vegetate cleared areas as soon as reasonably practicable after construction activities are complete.</li> </ul> |   | <p>monitoring will be conducted at a minimum frequency of once per week when activities are occurring within 10m of a feature.</p> <ul style="list-style-type: none"> <li>Undertake regular monitoring of the feature to ensure the work area is clearly delineated and respected when construction is anticipated to occur within 10-30m of the features, at a minimum frequency of once per month. Depending on the season and site-specific conditions, such as topography, surface water flow patterns, and the presence or absence of vegetative buffers, monitoring frequency will be increased at the discretion of the on-site environmental monitor.</li> </ul> |   |   |
| <p>Minimization of Impacts to Groundwater Discharge</p> | <ul style="list-style-type: none"> <li>Monitor rate of water pumping and timing to meet requirement of less than 50,000L per foundation site per day. If a volume of 50,000 L/day per foundation site is surpassed but is less than 400,000 L/day, then registration on the MOECC's Environmental Activity and Sector registry (EASR) for Water taking may be required. If the Project encounters extraordinary conditions (i.e. an infrequent storm event) that necessitate additional water</li> </ul>  | <p>To minimize direct impacts on significant wetlands and Generalized SWHs.</p> | <ul style="list-style-type: none"> <li>Undertake regular monitoring of significant wetlands and Generalized SWHs to ensure the work area is clearly delineated within 10m of construction activities for the duration of the construction and decommissioning phases of the Project. This monitoring will be conducted at a minimum frequency of once per week when construction is anticipated within 10m of a</li> </ul>   | <ul style="list-style-type: none"> <li>If impacts to groundwater discharge occur as a result of construction activities, the MNRF will be notified of appropriate contingency measures that will be implemented.</li> </ul> | <p>Within 30m of any of the following:<br/> <b>WET-001, 003, 004, 005, 006, 008, Generalized SWHs</b></p> |



**Table 8. Detailed Mitigation Measures, Performance Objectives, Monitoring Commitments, and Contingency Plans Recommended During the Construction and Decommissioning Phases of the Project**

| Mitigation Measure                       | Details of Proposed Mitigation Measure  | Performance Objective(s)  | Monitoring Commitment(s)   | Contingency Plan(s)   | Applicable Features(s)  |
|--|---|---|--|---|---|
|  | <p>takings (i.e. construction dewatering) beyond 400,000 L/day per foundation site, the local MOECC District Office will be contacted and consulted on direction on how to address the situation to allow the Project to proceed in a timely manner while maintaining environmental protection.</p> <ul style="list-style-type: none"> <li>• Restrict taking of groundwater and surface water during extreme low flow time periods.</li> <li>• Control quantity and quality of stormwater discharge using best management practices, and avoid direct discharge into wetlands, SWHs, and Generalized SWHs.</li> </ul> |   | <p>significant wetland or Generalized SWH.</p> <ul style="list-style-type: none"> <li>• Undertake regular monitoring of significant wetlands and Generalized SWHs to ensure the work area is clearly delineated and respected when construction is anticipated to occur within 10-30m of the features, at a minimum frequency of once per month. Depending on the season and site-specific conditions, such as topography, surface water flow patterns, and the presence or absence of vegetative buffers, monitoring frequency will be increased at the discretion of the on-site environmental monitor.</li> </ul> |   |   |
| Minimization of Impacts to Infiltration  | <ul style="list-style-type: none"> <li>• Minimize the use of impervious surfaces where practicable, such as utilizing and contouring permeable surface material (i.e. gravel) to increase infiltration, and reduce surface water runoff.</li> </ul>   | To minimize impacts to infiltration within significant wetlands and Generalized SWHs.   | <ul style="list-style-type: none"> <li>• Regular environmental monitoring will occur during the construction and decommissioning phase.</li> </ul>   | <ul style="list-style-type: none"> <li>• No contingency plan required.</li> </ul> | <p>Within 30m of any of the following:<br/> <b>WET-001, 003, 004, 005, 006, 008, Generalized SWHs</b></p>   |
| Minimization of Impacts to Soil Moisture | <ul style="list-style-type: none"> <li>• Minimize the use of impervious surfaces where practicable, such as utilizing and contouring permeable surface material (i.e. gravel) to increase infiltration, and reduce surface water runoff.</li> <li>• Minimize paved surfaces and design roads to promote infiltration.</li> </ul>  | To minimize impacts to soil moisture regime and vegetation species composition within significant natural features, SWHs, and Generalized SWHs. | <ul style="list-style-type: none"> <li>• Regular environmental monitoring will occur during the construction and decommissioning phase.</li> </ul>   | <ul style="list-style-type: none"> <li>• No contingency plan required.</li> </ul> | <p>Within 30m of any of the following:<br/> <b>WOD-001, 002, 004, 005, 006, 007, 011, 013, WET-001, 003, 004, 005, 006, 008, SHS-004, 005, 006, SQS-004, 005, 006, CSE-001*, 003*, 004, 005, 006, SHH-004, 005, 006, PAS-001*, 003*, 004, 005, 006,</b></p> |

**Table 8. Detailed Mitigation Measures, Performance Objectives, Monitoring Commitments, and Contingency Plans Recommended During the Construction and Decommissioning Phases of the Project**

| Mitigation Measure                              | Details of Proposed Mitigation Measure   | Performance Objective(s)  | Monitoring Commitment(s)  | Contingency Plan(s)   | Applicable Features(s)   |
|---|--|---|---|---|--|
|   |  |   |   |   | <p><b>BGU-004, 005, 006, HLS-001*, 003*, 004, 005, 006, SHO-001*, 003*, 004, 005, 006, CPR-001, Generalized SWHs</b></p> |
| <p>Minimization of Impacts to Water Quality</p> | <ul style="list-style-type: none"> <li>Clearly delineate work area using erosion fencing, or other barrier, to minimize potential impacts to water quality which may result from loss of riparian vegetation.</li> <li>On site speed limits will be clearly posted, applied, and followed by construction staff.</li> <li>Apply dust suppressants to unpaved areas when necessary to suppress dust, as determined by the on-site environmental monitor and general contractor. Application frequency will vary, but will be determined by site specific weather conditions, including recent precipitation, temperatures, and wind speeds.</li> <li>Re-vegetate areas adjacent to significant wetlands as soon as practicable after construction activities are complete.</li> <li>Install wind fences, where determined to be necessary by the on-site environmental monitor. Installation of these fences will depend on site-specific conditions, including wind speeds, topography, land cover, and the extent of surrounding natural wind breaks.</li> <li>No use of herbicides (Project</li> </ul> | <p>To minimize impacts to water quality (i.e. associated with increased turbidity) within significant wetlands.</p> | <ul style="list-style-type: none"> <li>Undertake regular monitoring of significant wetlands to ensure the work area is clearly delineated within 10m of construction activities for the duration of the construction and decommissioning phases of the Project. This monitoring will be conducted at a minimum frequency of once per week when construction is anticipated within 10m of a significant wetland.</li> <li>Undertake regular monitoring of significant wetlands to ensure the work area is clearly delineated and respected when construction is anticipated to occur within 10-30m of significant wetlands, at a minimum frequency of once per month. Depending on the season and site-specific conditions, such as topography, surface water flow patterns, and the presence or absence of vegetative buffers, monitoring frequency will be increased at the discretion of the on-site</li> </ul> | <ul style="list-style-type: none"> <li>If reduced water quality (i.e. increased turbidity) as a result of construction activities is observed, the MNRF will be notified of appropriate contingency measures that will be implemented.</li> </ul> | <p>Within 30m of any of the following:<br/> <b>WET-001, 003, 004, 005, 006, 008</b></p>                                  |

**Table 8. Detailed Mitigation Measures, Performance Objectives, Monitoring Commitments, and Contingency Plans Recommended During the Construction and Decommissioning Phases of the Project**

| Mitigation Measure                     | Details of Proposed Mitigation Measure  | Performance Objective(s)   | Monitoring Commitment(s)  | Contingency Plan(s)   | Applicable Features(s)  |
|--|---|--|---|---|---|
|  | related activities only) within significant wetlands.   |  | environmental monitor.  |   |   |
| Minimization of Invasive Seed Transfer | <ul style="list-style-type: none"> <li>Clearly delineate work area using erosion fencing, or other barrier, to minimize seed transfer into suitable habitat.</li> <li>Construction vehicles and equipment should be cleaned prior to entering within 30m of the listed SWH and anytime when the equipment is leaving the site to enter another project site.</li> <li>Vehicle use will occur primarily on access roads and in agricultural habitats, where invasive and non-native vegetation species are less likely to be concentrated.</li> </ul>  | <p>To minimize impacts to rare vegetation communities and plant species of conservation concern habitat.</p> <p>To maintain vegetated buffers, including riparian zones.</p> <p>To avoid contamination of rare vegetation communities and plant species of conservation concern habitat.</p> | <ul style="list-style-type: none"> <li>Regular environmental monitoring will occur during the construction and decommissioning phase.</li> </ul>  | <ul style="list-style-type: none"> <li>No contingency plan required.</li> </ul>   | <p>Within 30m of any of the following:</p> <p><b>SHS-004, 005, 006, SQS-004, 005, 006, CSE-001*, 003*, 004, 005, 006, SHH-004, 005, 006, PAS-001*, 003*, 004, 005, 006, BGU-004, 005, 006, HLS-001*, 003*, 004, 005, 006, SHO-001*, 003*, 004, 005, 006, CPR-001</b></p>  |
| Minimization of Spills                 | <ul style="list-style-type: none"> <li>Develop a spill response plan and train staff on appropriate procedures.</li> <li>Develop a 'frac-out' contingency plan and train staff on appropriate procedures during the construction phase.</li> <li>Keep emergency spill kits on site.</li> <li>Keep contact information for the MOECC Spills Action Centre in a designated area on-site.</li> <li>Dispose of waste material by authorized and approved off-site vendors.</li> <li>Store hazardous materials in designated areas.</li> <li>Locate all vehicle refueling or washing, as well as the storage of chemical and construction equipment more than 30m from applicable feature(s).</li> </ul> | <p>To minimize spills within 30m of significant natural features, SWHs, and Generalized SWHs.</p>  | <ul style="list-style-type: none"> <li>Regular environmental monitoring will occur at least once every 2 weeks during the construction and decommissioning phase to ensure vehicle refueling and storage of chemicals is occurring more than 30m from the applicable features.</li> <li>An on-site environmental monitor will be present when active directional drilling is occurring within 30m of significant natural features, SWHs, and Generalized SWHs.</li> </ul> | <ul style="list-style-type: none"> <li>If 'frac-out' occurs, immediately implement 'frac-out' contingency plan.</li> <li>In the event of a spill, notify the MOECC Spills Action Centre, immediately stop work, and ensure all efforts are made to completely remediate affected areas, especially prior to rain events.</li> <li>If a spill occurs within a significant natural feature, SWH, or Generalized SWH, the on-site environmental monitor will be notified and a follow-up site inspection will be conducted to document extent of degradation of the features, if any.</li> <li>If degradation of significant natural features, SWHs, or</li> </ul> | <p>Within 30m of or overlapping the following:</p> <p><b>WOD-001, 002, 004, 005, 006, 007, 011, 013, WET-001, 003, 004, 005, 006, 008, BAL-001, 002*, CBT-002, 003, EWP-001*, 003*, 004*, 005*, SHS-004, 005, 006, SQS-004, 005, 006, CSE-001*, 003*, 004, 005, 006, SHH-004, 005, 006, PAS-001*, 003*, 004, 005, 006, BGU-004, 005, 006, HLS-001*, 003*, 004, 005, 006, SHO-001*, 003*, 004, 005, 006, CPR-001, Generalized SWHs</b></p> |

**Table 8. Detailed Mitigation Measures, Performance Objectives, Monitoring Commitments, and Contingency Plans Recommended During the Construction and Decommissioning Phases of the Project**

| Mitigation Measure              | Details of Proposed Mitigation Measure   | Performance Objective(s)  | Monitoring Commitment(s)  | Contingency Plan(s)  | Applicable Features(s)   |
|---------------------------------|--|---|---|--|--|
|                                 |  |   |   | Generalized SWHs occurs as a result of the spill, appropriate contingency measures will be implemented, which may include re-establishing mitigation measures, habitat remediation, and/or seeding of permanently damaged areas depending on the extent of degradation incurred. |  |
| Posting of On-site Speed Limits | <ul style="list-style-type: none"> <li>On-site speed limits will be clearly posted, applied, and followed by construction staff throughout the construction and decommissioning phases.</li> </ul> | To minimize disturbance, displacement, and mortality to wildlife. | <ul style="list-style-type: none"> <li>No monitoring required.</li> </ul> | <ul style="list-style-type: none"> <li>No contingency plan required.</li> </ul>  | Access roads within 30m of or overlapping any of the following:<br><b>WOD-001, 002, 004, 005, 006, 007, 011, 013, WET-001, 003, 004, 005, 006, 008, BAL-001, 002*, BMA-002, 003, CBT-002, 003, LMS-001, 002, EWP-001*, 003*, 004*, 005*, SHS-004, 005, 006, SQS-004, 005, 006, CSE-001*, 003*, 004, 005, 006, SHH-004, 005, 006, PAS-001*, 003*, 004, 005, 006, BGU-004, 005, 006, HLS-001*, 003*, 004, 005, 006, SHO-001*, 003*, 004, 005, 006, CPR-001, Generalized SWHs</b> |

\* Only if these habitats are determined to be significant through pre-construction surveys described in Section 6.1.

### 6.3 Operational Phase Commitments

The sections above have listed several mitigation measures that are recommended to limit potential impacts to significant natural features or wildlife habitats during the operation of the Project. The specific details of these proposed mitigation measures, as well as the associated performance objectives, monitoring commitments, and contingency plans are provided in Table 9, along with the location(s) where each of the mitigation measure(s) and associated performance objectives, monitoring commitments, and contingency plans apply (dependent on the SWH type and distance to the Project Location).

The table below consolidates the operational mitigation measures that are applicable to the natural heritage features and wildlife habitats that have been identified through the NHA process. These proposed mitigation measures, along with other proposed mitigation measures not associated with natural heritage, have been included in the *Design and Operations Report* (DNV-GL 2017b).

**Table 9. Detailed Mitigation Measures, Performance Objectives, Monitoring Commitments, and Contingency Plans Recommended During the Operational Phase of the Project**

| Mitigation Measure  | Details of Proposed Mitigation Measure   | Performance Objective(s)   | Monitoring Commitment(s)  | Contingency Plan(s)   | Applicable Feature(s)  |
|---|--|--|---|---|--|
| Adherence to Wildlife Timing Windows (Bald Eagle Habitat)   | <ul style="list-style-type: none"> <li>Schedule regular (non-critical) vegetation maintenance activities located within 120m of the tertiary zone (as determined by site-specific surveys), to occur outside of the critical period for bald eagles (March 1st - May 15th), whenever practicable.</li> <li>If regular vegetation maintenance must occur during the period of March 1st to May 15th, consult with a biologist to ensure birds will not be impacted by the proposed maintenance activities.</li> <li>Schedule regular (non-critical) Project maintenance activities within 120m of significant bald eagle habitat to occur during daylight hours to avoid excessive noise and/or light disturbances to wildlife, wherever practicable.</li> <li>If Project maintenance activities within 120m of significant bald eagle habitat occur during the period of March 1st to May 15<sup>th</sup> after daylight hours, spotlights will be directed downward and/or away from the features to limit potential light disturbance to bald eagles.</li> </ul> | To minimize the potential disturbance and displacement of nesting bald eagles. | <ul style="list-style-type: none"> <li>Three years of post-construction disturbance surveys will be conducted at BAL-001 and BAL-002* (if the latter is determined significant based on pre-construction survey commitments for this habitat).</li> </ul> | <ul style="list-style-type: none"> <li>No contingency plan required.</li> </ul> | Within 120m of or overlapping the following SWH:<br><b>BAL-001, 002*</b> |
| Adherence to Wildlife Timing Windows (Bat Maternity Colony) | <ul style="list-style-type: none"> <li>If regular (non-critical) Project maintenance activities occur within 30m of significant bat habitats during</li> </ul>   | To minimize the potential disturbance and displacement of                      | <ul style="list-style-type: none"> <li>No monitoring required.</li> </ul>   | <ul style="list-style-type: none"> <li>No contingency plan required.</li> </ul> | Within 30m of the following SWH:<br><b>BMA-002, 003</b>                  |

**Table 9. Detailed Mitigation Measures, Performance Objectives, Monitoring Commitments, and Contingency Plans Recommended During the Operational Phase of the Project**

| Mitigation Measure  | Details of Proposed Mitigation Measure  | Performance Objective(s)  | Monitoring Commitment(s)  | Contingency Plan(s)   | Applicable Feature(s)  |
|---|---|---|---|---|--|
|   | the critical roosting period (June 1 <sup>st</sup> – June 30 <sup>th</sup> ), schedule these activities to occur during daylight hours to avoid excessive noise and/or light disturbances to wildlife, wherever practicable. If Project maintenance activities within 30m of significant wildlife habitats must occur outside of daylight hours, spotlights will be directed downward and/or away from the features to limit potential light disturbance to bats.   | roosting bats.  |   |   |  |
| Adherence to Wildlife Timing Windows (Eastern Wood-Pewee)                       | <ul style="list-style-type: none"> <li>If regular (non-critical) Project maintenance activities within 30m of significant bird SCC habitats occur during the breeding bird period (May 1<sup>st</sup> – July 31<sup>st</sup>), schedule these activities to occur during daylight hours to avoid excessive noise and/or light disturbances to wildlife, wherever practicable. If Project maintenance activities within 30m of significant wildlife habitats must occur outside of daylight hours, spotlights will be directed downward and/or away from the features to limit potential light disturbance to eastern wood-pewee.</li> </ul> | <p>To minimize the potential disturbance and displacement of breeding birds within significant natural features and significant eastern wood-pewee habitats.</p> <p>Minimize impacts on species that are relatively inactive at night and not accustomed to nighttime disturbances.</p> | <ul style="list-style-type: none"> <li>If the habitats are deemed significant based on pre-construction survey commitments, 3 years of post-construction disturbance surveys will be conducted at the following habitats: EWP-001*, 003*, 004* and 005*.</li> </ul> | <ul style="list-style-type: none"> <li>Annual reports which document the results of disturbance and mortality monitoring, will be prepared following each year that monitoring occurs. The reports will be submitted to the MNRF and the results presented in these annual reports will be used to determine if any additional mitigation measures should be implemented during the operational phase of this Project.</li> </ul> | <p>Within 30m of the following SWH:<br/> <b>EWP-001*, 003*, 004*, 005*</b></p> |
| Adherence to Wildlife Timing Windows (Colonially-Nesting Breeding Bird Habitat) | <ul style="list-style-type: none"> <li>If regular (non-critical) Project maintenance activities within 30m of significant colonially-nesting</li> </ul>   | To minimize the potential disturbance and displacement of   | <ul style="list-style-type: none"> <li>No monitoring required.</li> </ul>   | <ul style="list-style-type: none"> <li>No contingency plan required.</li> </ul>   | <p>Within 30m of the following SWH:<br/> <b>CBT-002, 003</b></p>               |

**Table 9. Detailed Mitigation Measures, Performance Objectives, Monitoring Commitments, and Contingency Plans Recommended During the Operational Phase of the Project**

| Mitigation Measure  | Details of Proposed Mitigation Measure   | Performance Objective(s)   | Monitoring Commitment(s)  | Contingency Plan(s)   | Applicable Feature(s)                                   |
|---|--|--|---|---|---|
| [Trees/Shrubs])   | breeding bird habitats occur during the peak breeding season (April 1 <sup>st</sup> – August 31 <sup>st</sup> ), schedule these activities to occur during daylight hours to avoid excessive noise and/or light disturbances to wildlife, wherever practicable. If Project maintenance activities within 30m of significant wildlife habitats must occur outside of daylight hours, spotlights will be directed downward and/or away from the features to limit potential light disturbance to colonially-nesting breeding birds.  | colonially-nesting birds.  |   |   |   |
| Adherence to Wildlife Timing Windows (Landbird Migratory Stopover Area) | <ul style="list-style-type: none"> <li>If regular (non-critical) Project maintenance activities occur within 30m of significant landbird stopover habitats during the spring and fall landbird migratory stopover period (March 1<sup>st</sup> – May 31<sup>st</sup> and August 1<sup>st</sup> – October 31<sup>st</sup>), schedule these activities to occur during daylight hours to avoid excessive noise and/or light disturbances to wildlife, wherever practicable. If Project maintenance activities within 30m of significant wildlife habitats must occur outside of daylight hours, spotlights will be directed downward and/or away from the features to limit potential light disturbance to migratory landbirds.</li> </ul> | To minimize the potential disturbance and displacement of migratory landbirds. | <ul style="list-style-type: none"> <li>No monitoring required.</li> </ul> | <ul style="list-style-type: none"> <li>No contingency plan required.</li> </ul> | Within 30m of the following SWH:<br><b>LMS-001, 002</b> |



**Table 9. Detailed Mitigation Measures, Performance Objectives, Monitoring Commitments, and Contingency Plans Recommended During the Operational Phase of the Project**

| Mitigation Measure                           | Details of Proposed Mitigation Measure   | Performance Objective(s)   | Monitoring Commitment(s)  | Contingency Plan(s)   | Applicable Feature(s)  |
|--|--|--|---|---|--|
| Develop a Bird and Bat EEMP                  | <ul style="list-style-type: none"> <li>Develop a Bird and Bat EEMP in accordance with MNRF's Birds and Bird Habitats (OMNR 2011a) and Bat and Bat Habitats (OMNR 2011b).</li> <li>Post-construction monitoring will be conducted following the Birds and Bird Habitats (OMNR 2011a) and Bats and Bat Habitats (OMNR 2011b) provincial guidelines for a minimum of 3 years after the Project has become operational.</li> </ul> | To minimize the potential disturbance, displacement, and/or mortality of bird and bat species as a result of the operation of the Project. | <ul style="list-style-type: none"> <li>The bird and bat EEMP will outline detailed methodology for conducting post-construction mortality monitoring and disturbance surveys in significant bird and bat habitats.</li> </ul> | <ul style="list-style-type: none"> <li>Annual reports which document the results of disturbance and mortality monitoring, will be prepared following each year that monitoring occurs. The reports will be submitted to the MNRF and the results presented in these annual reports will be used to determine if any additional mitigation measures should be implemented during the operational phase of this Project.</li> </ul> | <p>Applicable to the following: <b>BMA-001, 002, 003, CBT-001, 002, 003, LMS-001, 002, BAL-001, 002*, EWP-001*, 002, 003*, 004*, 005*, WTH-001</b></p> <p>The following turbines will be monitored post-construction because of their proximity to features treated as SWH where no access was available to survey the habitat:</p> <ul style="list-style-type: none"> <li>T1 (due to proximity to BMA-001, CBT-001, EWP-002, WTH-001)</li> <li>T8 (due to proximity to BMA-002, CBT-002, LMS-001)</li> <li>T9 (due to proximity to BMA-003, CBT-003, LMS-002)</li> <li>T10 (due to proximity to BAL-001)</li> </ul> <p>The following turbines will be monitored post-construction if the pre-construction surveys determine the feature to be SWH:</p> <ul style="list-style-type: none"> <li>T8 (due to proximity to EWP-003*)</li> <li>T9 (due to proximity to EWP-004*)</li> <li>T13 (due to proximity to EWP-005*)</li> <li>T16 (due to proximity to BAL-002*)</li> <li>T17 (due to proximity to EWP-00*1)</li> </ul> |
| Disturbance/Avoidance Behaviour (Bald Eagle) | <ul style="list-style-type: none"> <li>Develop a Bird and Bat EEMP in accordance with</li> </ul>   | To minimize the potential  | <ul style="list-style-type: none"> <li>Post-construction monitoring will be</li> </ul>  | <ul style="list-style-type: none"> <li>Annual reports which document the results of</li> </ul>  | Within 120m of or overlapping the following SWH:   |

**Table 9. Detailed Mitigation Measures, Performance Objectives, Monitoring Commitments, and Contingency Plans Recommended During the Operational Phase of the Project**

| Mitigation Measure     | Details of Proposed Mitigation Measure   | Performance Objective(s)   | Monitoring Commitment(s)  | Contingency Plan(s)   | Applicable Feature(s)  |
|------------------------|--|--|---|---|--|
| Habitat)               | <p>MNRF's Birds and Bird Habitats (OMNR 2011a).</p> <ul style="list-style-type: none"> <li>Post-construction monitoring will be conducted as outlined in the EEMP at the bald eagle habitat (BAL-001) for 3 years after the Project has become operational.</li> </ul> | disturbance and displacement of nesting bald eagles.                                   | conducted at the bald eagle habitats, BAL-001 and BAL-002* (if the latter is determined significant based on pre-construction survey commitments) for 3 years after the Project has become operational. | disturbance monitoring will be prepared following each year that monitoring occurs. The reports will be submitted to the MNRF and the results presented in these annual reports will be used to determine if any additional mitigation measures should be implemented during the operational phase of this Project (e.g. operational mitigation of the closest turbine (T10 or T16) to the habitat, including turbine shut down during the critical nesting period, specifically during the time of year fledglings are learning to fly). | <b>BAL-001, 002*</b>   |
| Herbicide Avoidance    | <ul style="list-style-type: none"> <li>Avoid the use of herbicides (Project related activities only) within 30m of significant natural features and SWHs.</li> </ul>   | To avoid impacts to natural vegetation species, significant natural features and SWHs. | <ul style="list-style-type: none"> <li>No monitoring required.</li> </ul>   | <ul style="list-style-type: none"> <li>No contingency plan required.</li> </ul>   | <p>Within 30m of or overlapping any of the following:<br/> <b>WOD-001, 002, 004, 005, 006, 007, 011, 013, WET-001, 003, 004, 005, 006, 008, BAL-001, 002*, BMA-002, 003, CBT-002, 003, LMS-001, 002, EWP-001*, 003*, 004*, 005*, SHS-004, 005, 006, SQS-004, 005, 006, CSE-001*, 003*, 004, 005, 006, SHH-004, 005, 006, PAS-001*, 003*, 004, 005, 006, BGU-004, 005, 006, HLS-001*, 003*, 004, 005, 006, SHO-001*, 003*, 004, 005, 006, CPR-001</b></p> |
| Minimization of Spills | <ul style="list-style-type: none"> <li>Develop a spill response plan and train staff on appropriate procedures.</li> <li>Keep emergency spill kits on site.</li> <li>Keep contact information for the MOECC Spills Action</li> </ul>                                   | To minimize spills within 30m of significant natural features and SWHs.                | <ul style="list-style-type: none"> <li>No monitoring plan required.</li> </ul>  | <ul style="list-style-type: none"> <li>In the event of a spill, notify the MOECC Spills Action Centre, immediately stop work, and ensure all efforts are made to completely remediate affected areas, especially prior to rain events.</li> </ul>   | <p>Within 30m of or overlapping the following:<br/> <b>WOD-001, 002, 004, 005, 006, 007, 011, 013, WET-001, 003, 004, 005, 006, 008, BAL-001, 002*, CBT-002, 003, EWP-001*, 003*, 004*, 005*, SHS-</b></p>   |

**Table 9. Detailed Mitigation Measures, Performance Objectives, Monitoring Commitments, and Contingency Plans Recommended During the Operational Phase of the Project**

| Mitigation Measure                     | Details of Proposed Mitigation Measure   | Performance Objective(s)  | Monitoring Commitment(s)   | Contingency Plan(s)  | Applicable Feature(s)  |
|--|--|---|--|--|--|
|  | <p>Centre in a designated area on-site.</p> <ul style="list-style-type: none"> <li>Dispose of waste material by authorized and approved off-site vendors.</li> <li>Store hazardous materials in designated areas.</li> <li>Locate all maintenance activities, vehicle refueling or washing, as well as the storage of chemicals and heavy equipment more than 30m from significant natural features and SWHs.</li> </ul> |   |  | <ul style="list-style-type: none"> <li>If degradation of a significant natural feature or SWH occurs as a result of the spill, appropriate contingency measures will be implemented, which may include re-establishing mitigation measures, habitat remediation, and/or seeding of permanently damaged areas depending on the extent of degradation incurred.</li> </ul> | <p>004, 005, 006, <b>SQS</b>-004, 005, 006, <b>CSE</b>-001*, 003*, 004, 005, 006, <b>SHH</b>-004, 005, 006, <b>PAS</b>-001*, 003*, 004, 005, 006, <b>BGU</b>-004, 005, 006, <b>HLS</b>-001*, 003*, 004, 005, 006, <b>SHO</b>-001*, 003*, 004, 005, 006, <b>CPR</b>-001</p>   |
| <p>Posting of On-site Speed Limits</p> | <ul style="list-style-type: none"> <li>On-site speed limits will be clearly posted, applied, and followed by all staff throughout the operational phase.</li> </ul>  | <p>To minimize the potential disturbance, displacement, and/or mortality of wildlife.</p> | <ul style="list-style-type: none"> <li>No monitoring plan required.</li> </ul> | <ul style="list-style-type: none"> <li>No contingency plan required.</li> </ul>  | <p>Access roads within 30m of or overlapping any of the following:<br/> <b>WOD</b>-001, 002, 004, 005, 006, 007, 011, 013, <b>WET</b>-001, 003, 004, 005, 006, 008, <b>BAL</b>-001, 002*, <b>BMA</b>-002, 003, <b>CBT</b>-002, 003, <b>LMS</b>-001, 002, <b>EWP</b>-001*, 003*, 004*, 005*, <b>SHS</b>-004, 005, 006, <b>SQS</b>-004, 005, 006, <b>CSE</b>-001*, 003*, 004, 005, 006, <b>SHH</b>-004, 005, 006, <b>PAS</b>-001*, 003*, 004, 005, 006, <b>BGU</b>-004, 005, 006, <b>HLS</b>-001*, 003*, 004, 005, 006, <b>SHO</b>-001*, 003*, 004, 005, 006, <b>CPR</b>-001</p> |

\* Only if these habitats are determined to be significant through pre-construction surveys described in Section 6.1.

## 6.4 Post-Construction Monitoring Commitments

In accordance with appropriate provincial guidance and the commitments made as part of this report, several post-construction surveys are required at the Project. These post-construction monitoring commitments are outlined in Table 10 below.

**Table 10. Summary of Post-Construction Monitoring Commitments for the Project**

| Survey Type          | Location(s)    | Generalized Methods <sup>‡</sup>   | Purpose   |
|----------------------|----------------|--|---|
| Mortality Monitoring | Entire Project | <p>Post-construction mortality monitoring will be conducted following both the <i>Birds and Bird Habitats</i> (OMNR 2011a) and <i>Bats and Bat Habitats</i> (OMNR 2011b) provincial guidelines for 3 years after the Project has become operational.</p> <p>A total of 10 turbines will be selected in accordance with the <i>Birds and Bird Habitats</i> (OMNR 2011a) and <i>Bats and Bat Habitats</i> (OMNR 2011b) provincial guidelines (30% subsample, minimum 10 turbines). Each of the 10 turbines will be searched approximately every 3-4 days (twice weekly) for bird and bat mortalities from May 1<sup>st</sup> to October 31<sup>st</sup>, and approximately every 7 days (weekly) throughout November for raptors.</p> <p>Site-specific surveys could not be completed in the following bird and bat habitats:</p> <ul style="list-style-type: none"> <li>• Bat Maternity Colony (BMA-001, 002, 003)</li> <li>• Colonially-nesting Breeding Bird Habitat (Trees/Shrubs) (CBT-001, 002, 003)</li> <li>• Landbird Migratory Stopover Area (LMS-001, 002)</li> <li>• Bird Species of Conservation Concern Habitat (EWP-002 and WTH-001)</li> </ul> <p>As such, turbines within 120m of the above habitats will be included in the subset of turbines to be monitored as part of the post-construction mortality monitoring. Furthermore, turbines within 120m of the bird habitats identified above will be searched once monthly in April, in addition to the monitoring frequency and duration identified above.</p> <p>The following turbines will be monitored post-construction because of their proximity to features treated as SWH where no access was available to survey the habitat:</p> <ul style="list-style-type: none"> <li>• T1 (due to proximity to BMA-001, CBT-001, EWP-002, WTH-001)</li> <li>• T8 (due to proximity to BMA-002, CBT-002, LMS-001)</li> <li>• T9 (due to proximity to BMA-003, CBT-</li> </ul> | <p>To assess the direct impact of this facility on birds and bats.</p> <p>If mortality rates surpass provincially determined thresholds, mitigation measures will be discussed with the MNRF.</p> |

**Table 10. Summary of Post-Construction Monitoring Commitments for the Project**

| Survey Type   | Location(s)  | Generalized Methods*   | Purpose  |
|---|--|--|--|
|   |  | <p>003, LMS-002)</p> <ul style="list-style-type: none"> <li>• T10 (due to proximity to BAL-001)</li> </ul> <p>The following turbines will be monitored post-construction if the pre-construction surveys determine the feature to be SWH:</p> <ul style="list-style-type: none"> <li>• T8 (due to proximity to EWP-003*)</li> <li>• T9 (due to proximity to EWP-004*)</li> <li>• T13 (due to proximity to EWP-005*)</li> <li>• T16 (due to proximity to BAL-002*)</li> <li>• T17 (due to proximity to EWP-00*1)</li> </ul> <p>All turbines not part of the chosen sub-set will be searched once during each month from May to November, specifically targeting raptors.</p> <p>Searcher efficiency and carcass removal trials will be conducted in accordance with provincial guidelines.</p> <p>Bird and Bat mortality methods will be addressed in detail in the Bird and Bat EEMP, which will be prepared under separate cover and submitted to MNR for approval.</p> |  |
| <p>Bird Species of Conservation Concern: Bald Eagle</p>         | <p>BAL-001<br/>BAL-002*</p>                            | <p>Post-construction bald eagle monitoring will be repeated at the confirmed significant habitat (BAL-001) and at BAL-002* (if surveys determine the habitat to be candidate and significant wildlife habitat) for 3 years following the same methods utilized during pre-construction surveys. For detailed survey methods, see Table 7.</p> <p>Any constructed turbine in or within 120m of BAL-001 or BAL-002* (if the latter is determined to be significant based on pre-construction survey commitments for this feature), measured from blade tip to tertiary habitat, must be included in the post-construction mortality monitoring subset of turbines to be searched twice weekly.</p>   | <p>To assess the potential disturbance impact of wind turbines on nesting bald eagles.</p>                         |
| <p>Bird Species of Conservation Concern: Eastern Wood-Pewee</p> | <p>EWP-001*<br/>EWP-003*<br/>EWP-004*<br/>EWP-005*</p> | <p>Post-construction bird monitoring for eastern wood-pewee will be repeated at all significant habitats within 120m of wind turbines for 3 years following the same methods utilized during pre-construction surveys. For detailed survey methods, see Table 7.</p> <p>If habitats are determined to be significant, any constructed turbine in or within 120m of the significant habitat (measured from blade tip to habitat) must be included in the post-construction mortality monitoring subset of turbines to be searched twice weekly.</p>   | <p>To assess the potential disturbance impact of wind turbines on significant habitats for eastern wood-pewee.</p> |
| <p>Plant Species of Conservation</p>                            | <p>CSE-001*<br/>CSE-003*</p>                           | <p>Post-construction monitoring for plant species of conservation concern will be repeated at all</p>  | <p>To assess the potential disturbance</p>   |

**Table 10. Summary of Post-Construction Monitoring Commitments for the Project**

| Survey Type   | Location(s)  | Generalized Methods*  | Purpose   |
|---|--|---|---|
| Concern Surveys:<br><ul style="list-style-type: none"> <li>• Cattail Sedge Habitat</li> <li>• Pumpkin Ash Habitat</li> <li>• Halberd-leaved Smartweed Habitat</li> <li>• Shumard Oak Habitat</li> </ul> | CSE-007*<br>PAS-001*<br>PAS-003*<br>PAS-007*<br>HLS-001*<br>HLS-003*<br>SHO-001*<br>SHO-003* | significant habitats where access is granted in years 1, 3, and 5 of operation. These surveys will be conducted at a time of year when the species can be identified (refer to Table 7 for specific methods and survey timing) and following pre-construction survey methods.<br><br>Specific locations of plant species of conservation identified during pre-construction surveys will also be monitored post-construction. | impact of access roads on significant habitats for plant species of conservation concern. |

\* If site access is denied to conduct post-construction surveys, and an alternative survey method will not provide enough information to re-evaluate the significance of the wildlife habitat, post-construction monitoring will not be conducted as potential negative effects can be mitigated through site specific construction mitigation measures. This is applicable to all survey types, excluding post-construction mortality monitoring.

\* These surveys are only required if the habitat is determined to be significant through pre-construction surveys described in Section 6.1.

## 7.0 Environmental Impact Summary

A total of 18 proposed turbine locations will be permitted for the Project, including the installation of supporting infrastructure, such as temporary lay-down areas, crane pads, access roads, PCC, O&M building, meteorological tower, substation, and electrical collector lines. Through a comprehensive review of background material in conjunction with site-specific investigations and evaluation of significance surveys, NRSI biologists have identified several significant, or treated as significant, natural features and wildlife habitats in and within 120m of the Project Location.

As part of this EIS, NRSI biologists have recommended a series of mitigation measures, monitoring commitments, and contingency plans to be implemented as part of the development of this Project. These recommendations have been developed in association with the specific natural features and wildlife habitats that have been identified in and within 120m of the Project Location. The proposed mitigation measures, monitoring commitments, and contingency plans outlined in Section 5 and Section 6 will also be provided in the *Construction Plan Report* (DNV-GL 2017a), *Design and Operations Report* (DNV-GL 2017b), and *Decommissioning Plan Report* (DNV-GL 2017c) to address potential negative environmental effects of the Project on natural features, as well as in the Bird and Bat EEMP, with respect to birds and bats.

Assuming the implementation of the proposed mitigation measures, monitoring programs, and contingency plans (if necessary), there is not expected to be any significant impacts to natural heritage features, including woodlands, wetlands, and SWH.

## 8.0 References

### *Publications*

- DNV-GL. 2017a. Romney Wind Energy Centre: Construction Plan Report. July 2017.
- DNV-GL. 2017b. Romney Wind Energy Centre: Design and Operations Report. July 2017.
- DNV-GL. 2017c. Romney Wind Energy Centre: Decommissioning Plan Report. July 2017.
- Ministry of Natural Resources and Forestry (MNRF). 2015. Significant Wildlife Habitat Criteria Schedules for Ecoregion 7E. January 2015.
- Natural Resource Solutions Inc. (NRSI). 2017a. Romney Wind Energy Centre: Natural Heritage Evaluation of Significance Report. June 2017.
- Natural Resource Solutions Inc. (NRSI). 2017b. Romney Wind Energy Centre: Water Body Report. June 2017.
- Ontario Ministry of Natural Resources (OMNR). 2012. Natural Heritage Assessment Guide for Renewable Energy Projects. November 2012.
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- Ontario Ministry of Natural Resources (OMNR). 2011b. Bats and Bat Habitats: Guidelines for Wind Power Projects. July 2011.
- Ontario Ministry of Natural Resources (OMNR). 2000. Significant Wildlife Habitat Technical Guide. October 2000.
- Ontario Ministry of Natural Resources (OMNR). 1987. Bald Eagle Habitat Management Guidelines. June 1987.

### *Internet Sources*

- Ministry of Natural Resources and Forestry (MNRF). 2016. Land Information Ontario (LIO). Available at: <https://www.ontario.ca/page/land-information-ontario> (Accessed September 15, 2016).



**Map 1**  
Project Location and Natural Features

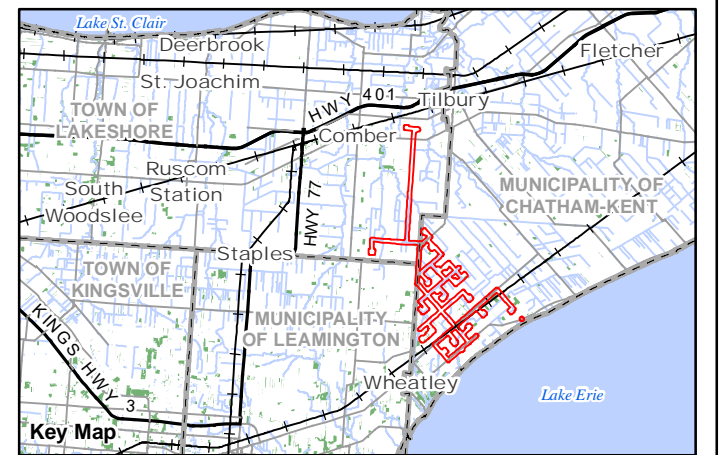
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# Romney WEC

## Project Location and Natural Features

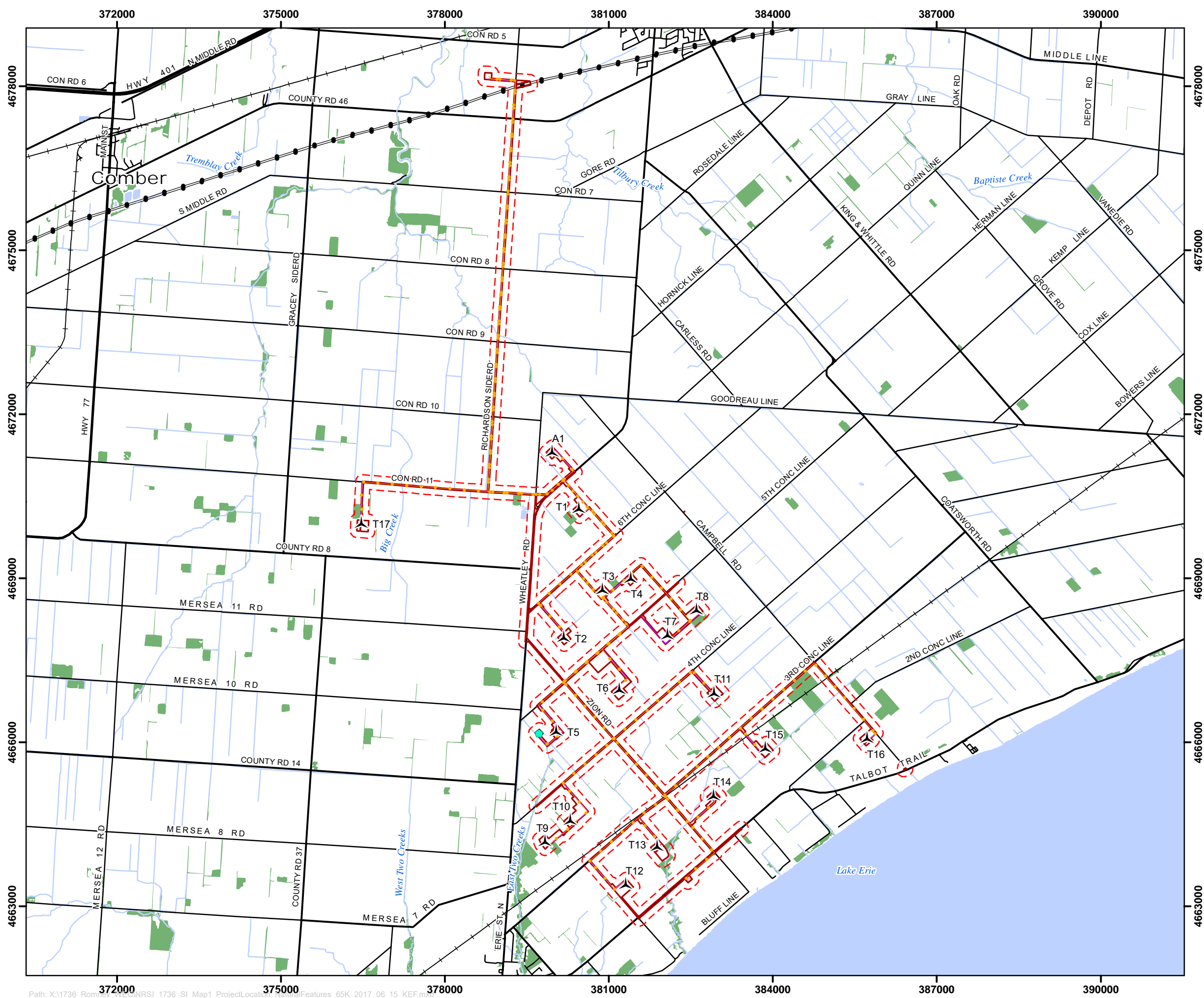
### Legend

- Utility Line
- + Railway
- Highway
- Primary Road
- Secondary Road
- Project Components**
- ▭ 120m Setback
- ▭ Project Location
- ▲ Proposed Turbine
- ▲ Proposed Meteorological Tower
- Proposed Collection Line
- Proposed Access Road
- ▭ Proposed O&M Building
- Natural Features**
- Permanent Watercourse
- Intermittent Watercourse
- Open Water
- Wooded Area



Map Produced by Natural Resource Solutions Inc. This map is proprietary and confidential and must not be duplicated or distributed by any means without express written permission of NRSI. Data provided by MNRF © Copyright: Queen's Printer Ontario.

|                                       |   |
|---------------------------------------|---|
| Project: 1736C<br>Date: June 15, 2017 | NAD83 - UTM Zone 17<br>Size: 11x17"<br>1:68,000 |
|---------------------------------------|---|



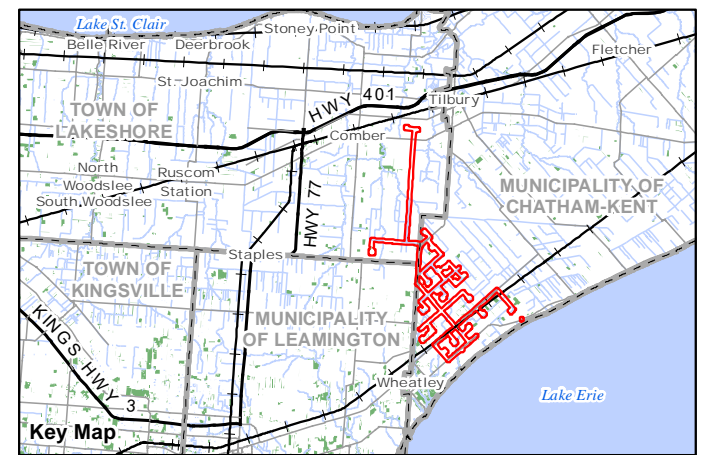
**Map 2**  
**Key Map**

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# Romney WEC Key Map

### Legend

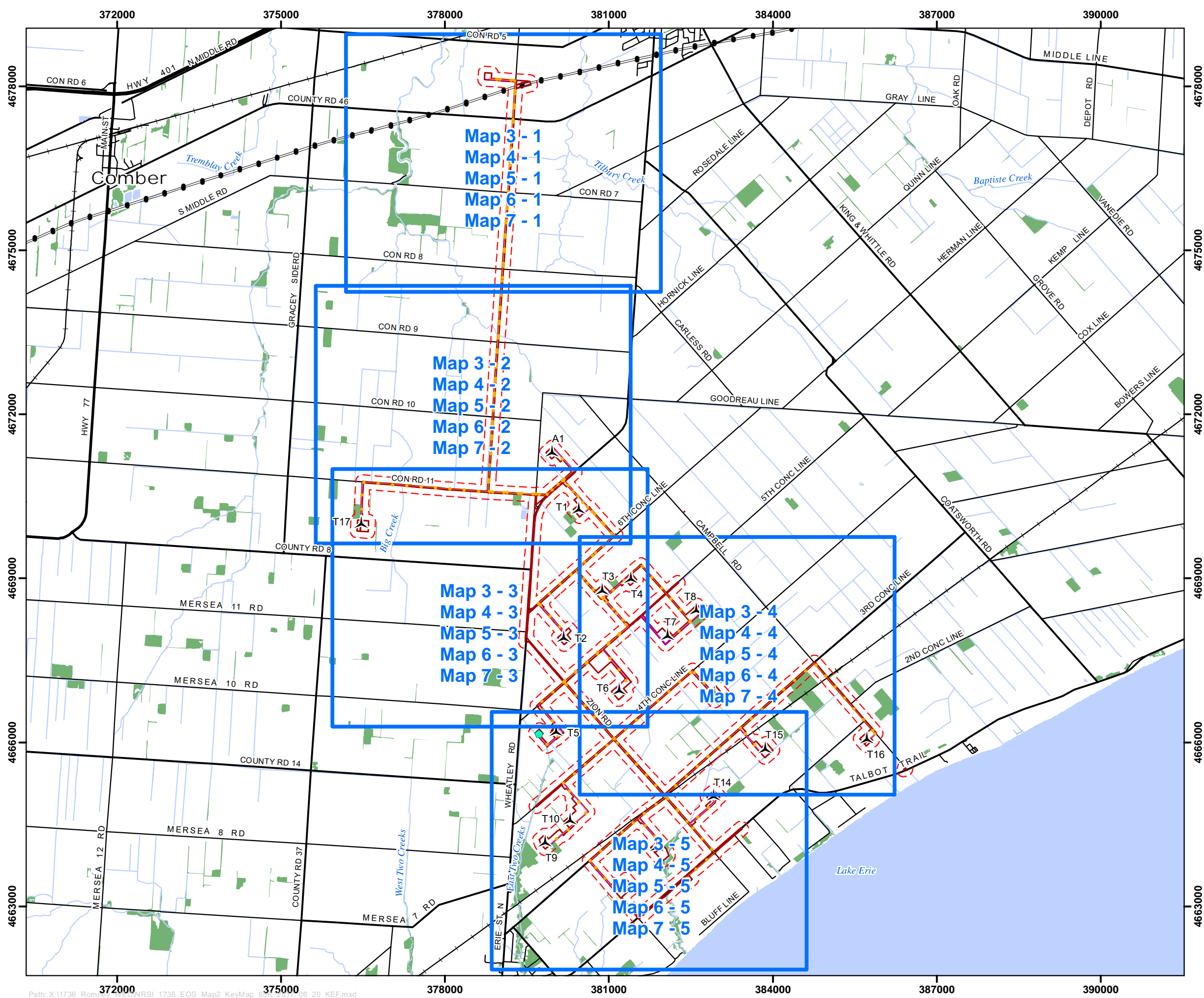
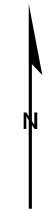
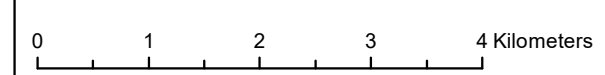
- Map Extent
- Utility Line
- Railway
- Highway
- Primary Road
- Secondary Road
- 120m Setback
- Project Location
- Proposed Turbine
- Proposed Meteorological Tower
- Proposed Collection Line
- Proposed Access Road
- Proposed O&M Building
- Natural Features**
- Permanent Watercourse
- Intermittent Watercourse
- Open Water
- Wooded Area



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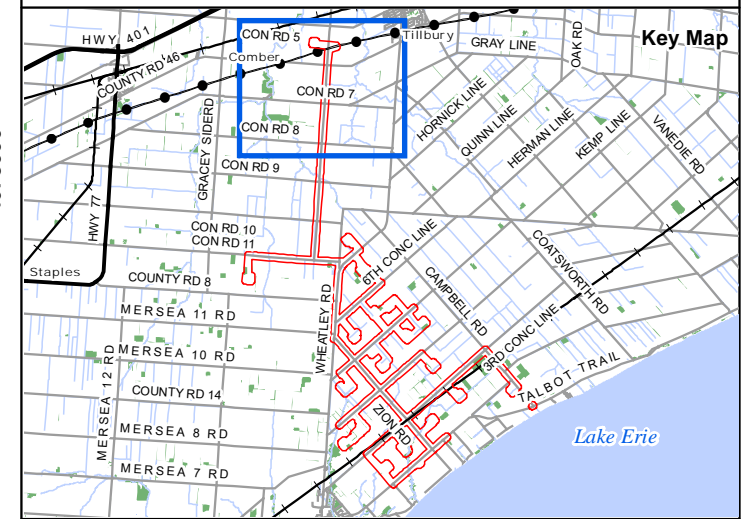
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| Project: 1736C<br>Date: June 22, 2017 | NAD83 - UTM Zone 17<br>Size: 11x17"<br>1:68,000 |
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**Maps 3-1 to 3-5**  
Significant Woodlands and Wetlands

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# Romney WEC Significant Woodlands and Wetlands

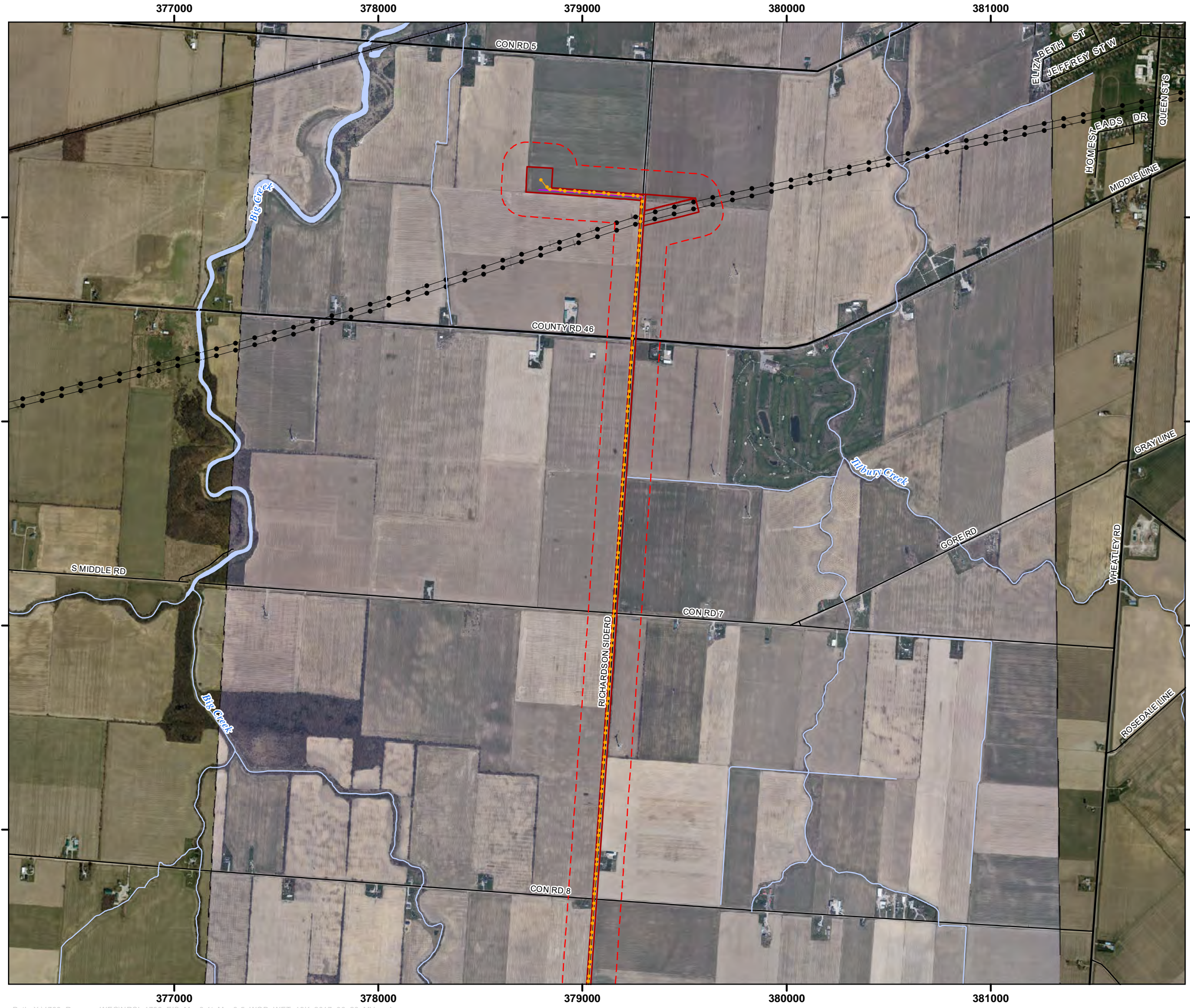
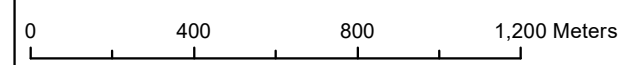


- Legend**
- Utility Line
  - Railway
  - Primary Road
  - Secondary Road
  - ~ Permanent Watercourse
  - ~ Open Water
- Project Components**
- 120m Setback
  - Project Location
  - Proposed Collection Line
  - Proposed Access Road

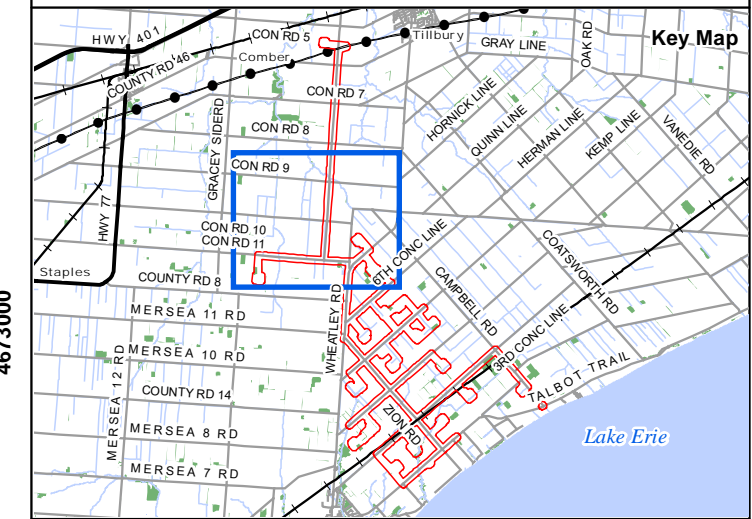


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| Project 1736<br>Date: June 23, 2017 | NAD83 - UTM Zone 17<br>Size: 11x17"<br>1:18,500 |
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# Romney WEC Significant Woodlands and Wetlands



**Legend**

- Primary Road
- Secondary Road
- Permanent Watercourse
- Open Water

**Project Components**

- 120m Setback
- Project Location
- Proposed Turbine
- Proposed Collection Line
- Proposed Access Road

**Natural Features**

- Significant Woodland (WOD)
- Significant Wetland (WET)



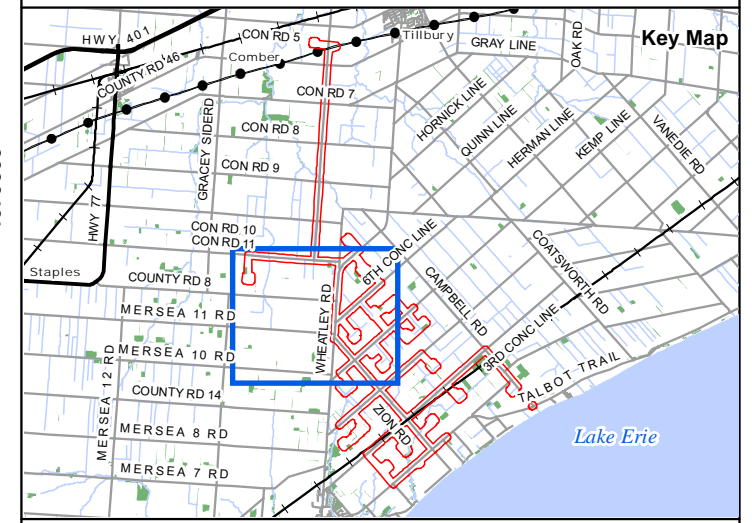
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| Project 1736<br>Date: June 23, 2017 | NAD83 - UTM Zone 17<br>Size: 11x17"<br>1:18,500 |
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0 400 800 1,200 Meters



# Romney WEC Significant Woodlands and Wetlands



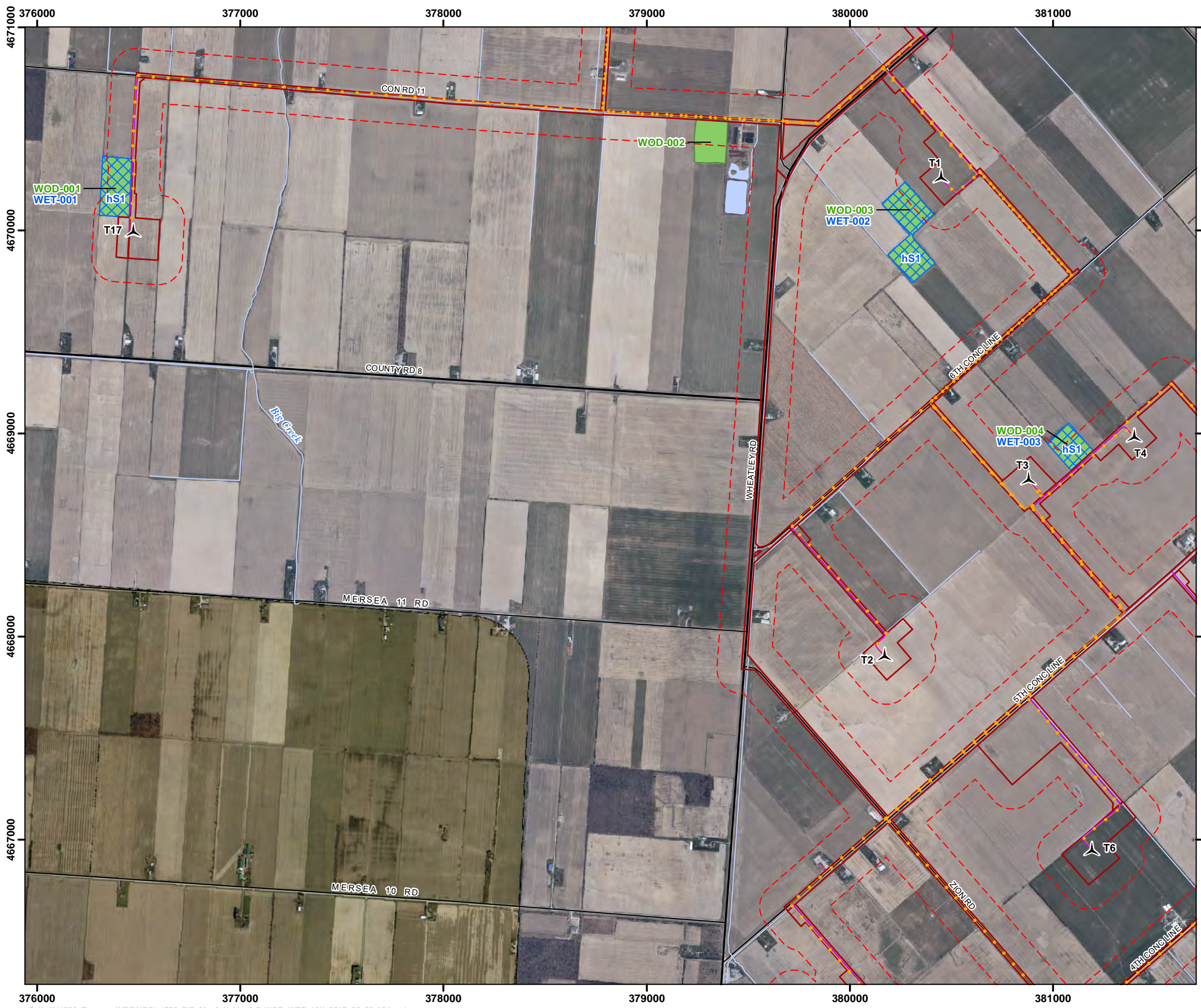
- Legend**
- Primary Road
  - Secondary Road
  - Permanent Watercourse
  - Open Water
  - Project Components**
    - 120m Setback
    - Project Location
    - Proposed Turbine
    - Proposed Collection Line
    - Proposed Access Road
  - Natural Features**
    - Significant Woodland (WOD)
    - Significant Wetland (WET)



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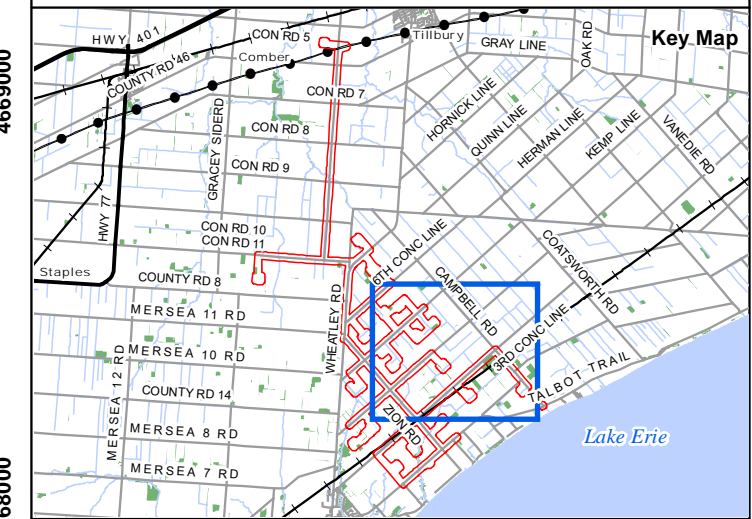
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| Project 1736<br>Date: June 23, 2017 | NAD83 - UTM Zone 17<br>Size: 11x17"<br>1:18,500 |
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0 400 800 1,200 Meters





# Romney WEC Significant Woodlands and Wetlands

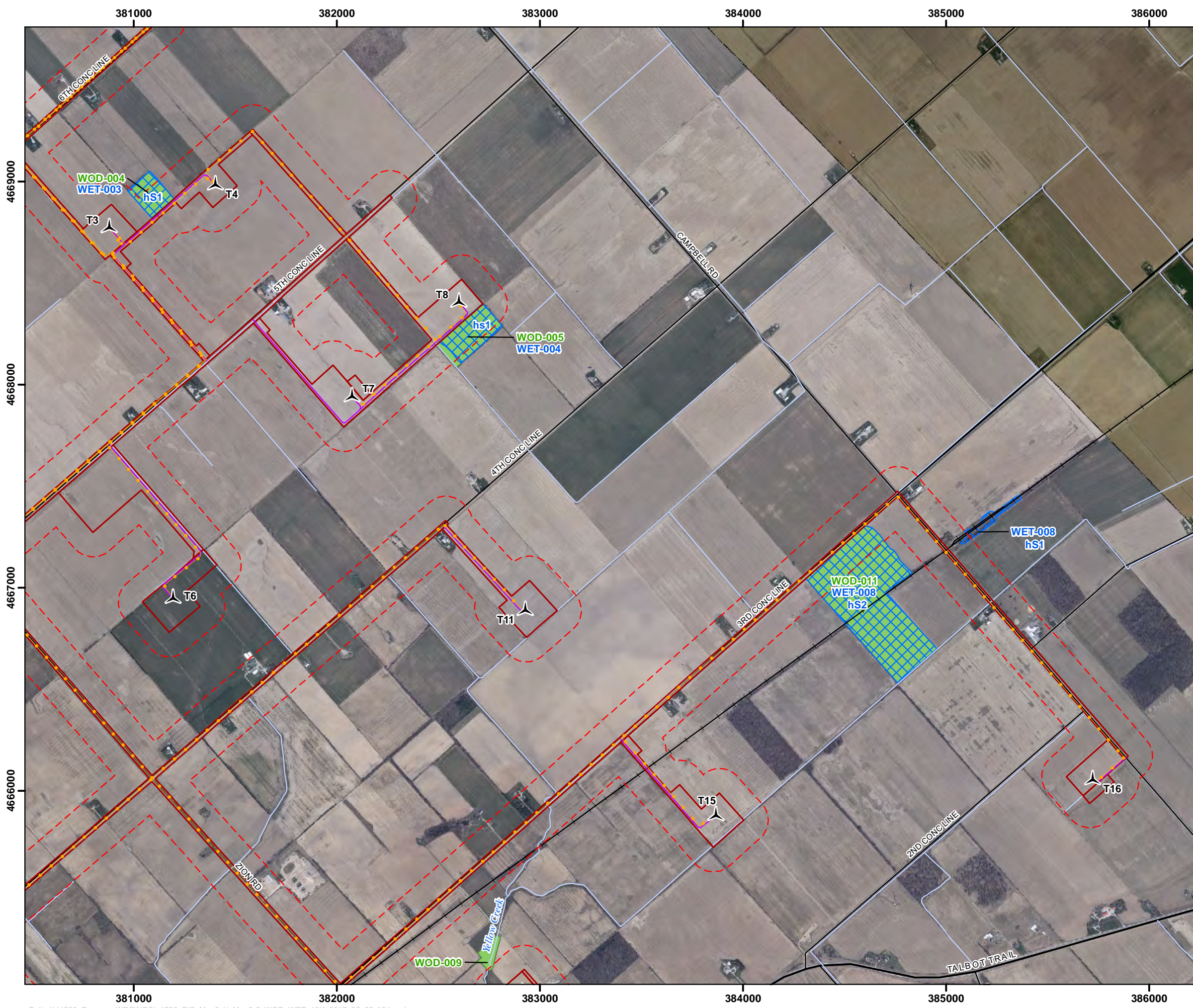
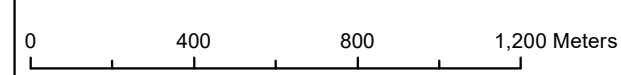


- Legend**
- Railway
  - Primary Road
  - Secondary Road
  - Permanent Watercourse
  - Project Components**
  - 120m Setback
  - Project Location
  - Proposed Turbine
  - Proposed Collection Line
  - Proposed Access Road
  - Natural Features**
  - Significant Woodland (WOD)
  - Significant Wetland (WET)

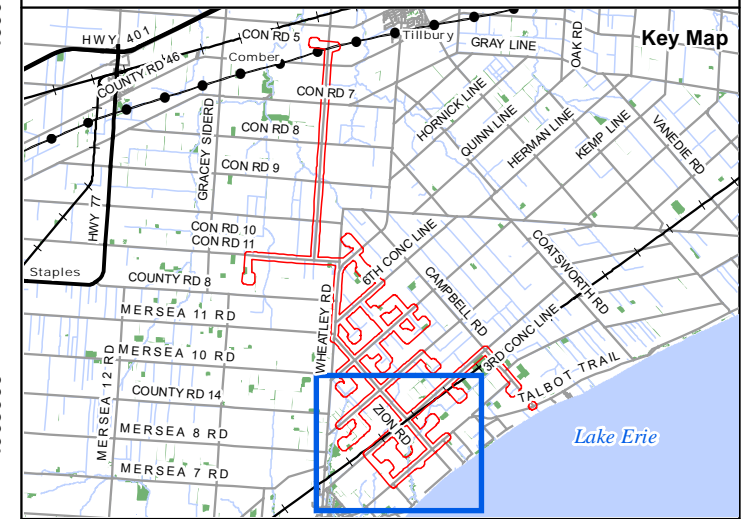


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| Project 1736<br>Date: June 23, 2017 | NAD83 - UTM Zone 17<br>Size: 11x17"<br>1:18,500 |
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# Romney WEC Significant Woodlands and Wetlands



**Legend**

- Railway
- Primary Road
- Secondary Road
- Permanent Watercourse
- Open Water

**Project Components**

- 120m Setback
- Project Location
- Proposed Turbine
- Proposed Meteorological Tower
- Proposed Collection Line
- Proposed Access Road
- Proposed O&M Building

**Natural Features**

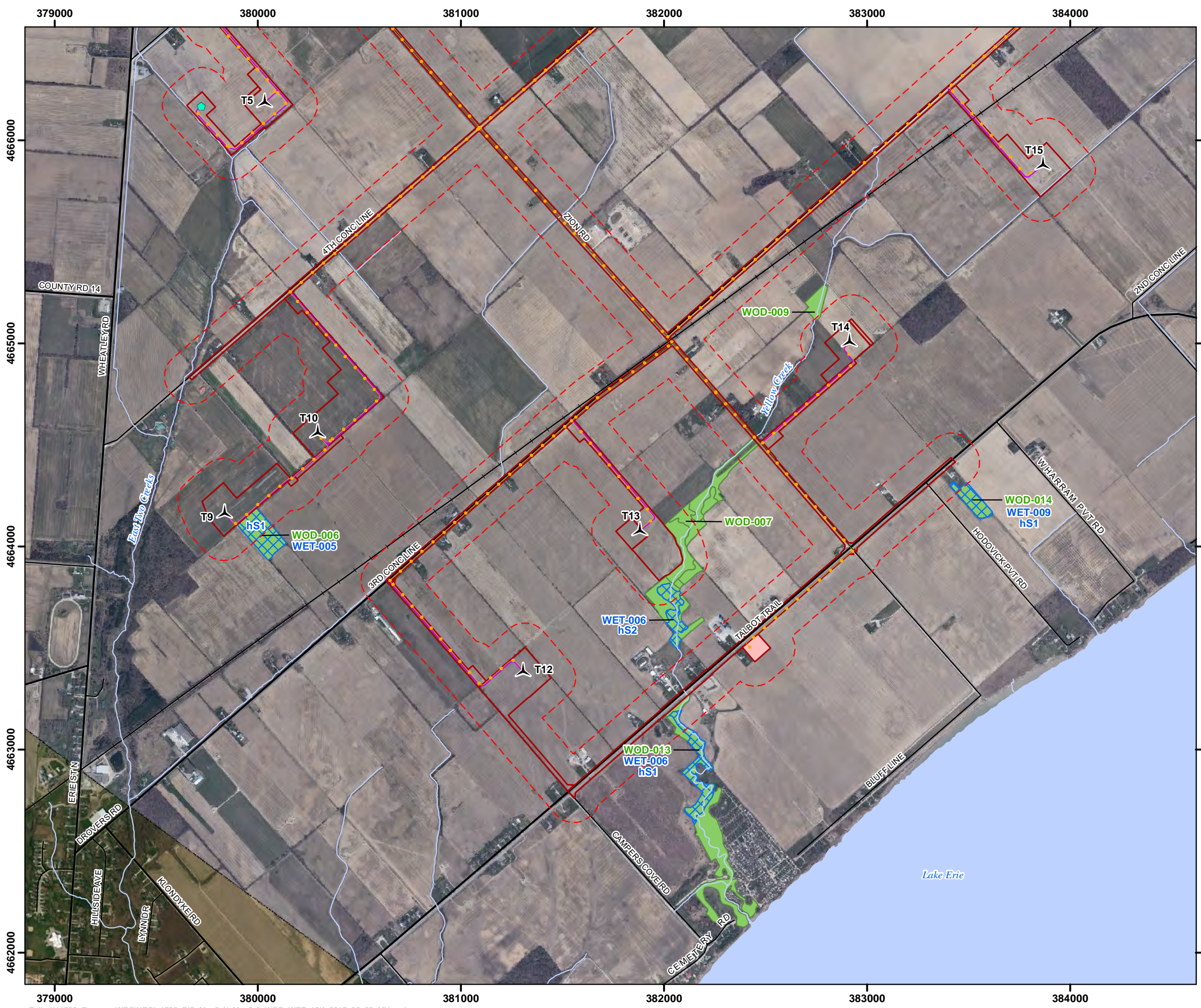
- Significant Woodland (WOD)
- Significant Wetland (WET)



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|-------------------------------------|---|
| Project 1736<br>Date: June 23, 2017 | NAD83 - UTM Zone 17<br>Size: 11x17"<br>1:18,500 |
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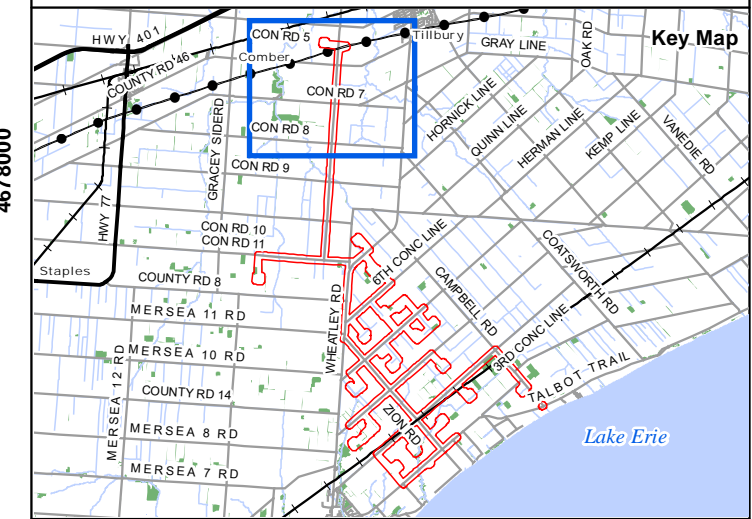
0 400 800 1,200 Meters



**Maps 4-1 to 4-5**  
Significant Seasonal Concentration Areas

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# Romney WEC Significant Seasonal Concentration Areas

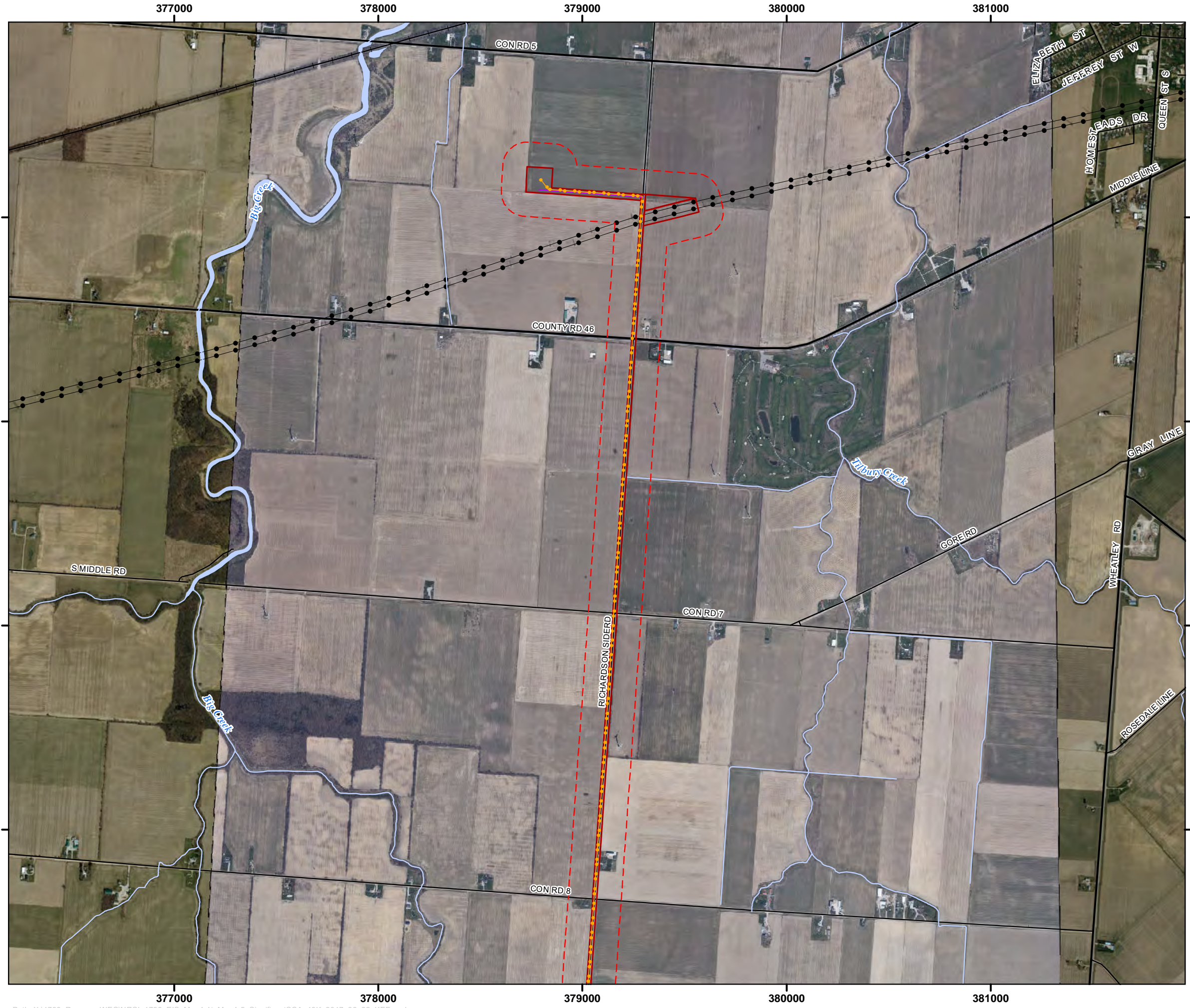
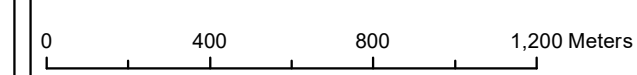


- Legend**
- Utility Line
  - Railway
  - Primary Road
  - Secondary Road
  - ~ Permanent Watercourse
  - Open Water
- Project Components**
- 120m Setback
  - Project Location
  - Proposed Collection Line
  - Proposed Access Road

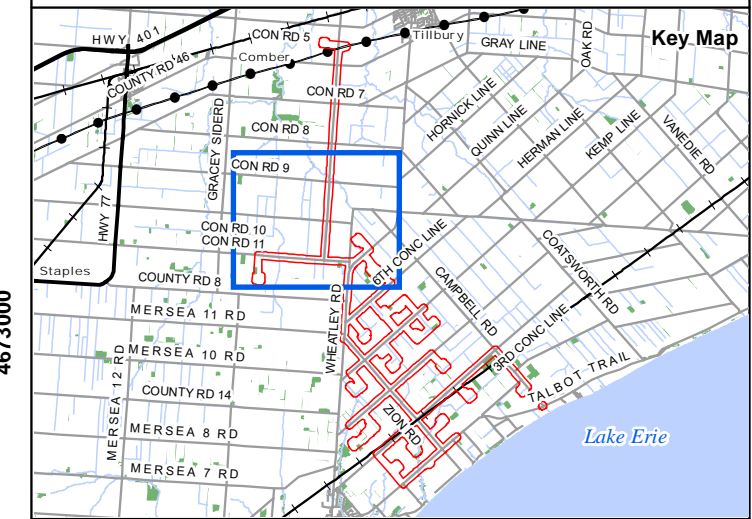


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| Project 1736<br>Date: June 22, 2017 | NAD83 - UTM Zone 17<br>Size: 11x17"<br>1:18,500 |
|-------------------------------------|---|



# Romney WEC Significant Seasonal Concentration Areas



- Legend**
- Primary Road
  - Secondary Road
  - Permanent Watercourse
  - Open Water
  - Project Components**
    - 120m Setback
    - Project Location
    - Proposed Turbine
    - Proposed Collection Line
    - Proposed Access Road
  - Significant Seasonal Concentration Areas**
    - Bat Maternity Colony (BMA)
    - Colonially - Nesting Bird Breeding Habitat (Tree/Shrubs) (CBT)



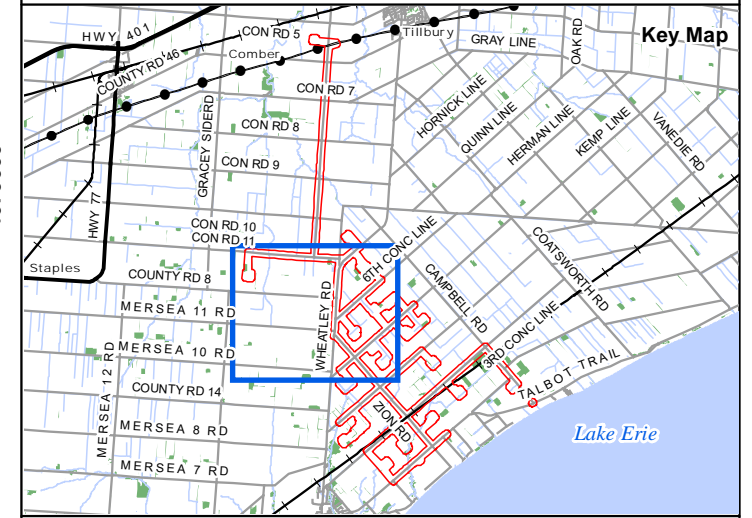
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| Project 1736<br>Date: June 22, 2017 | NAD83 - UTM Zone 17<br>Size: 11x17"<br>1:18,500 |
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0 400 800 1,200 Meters



# Romney WEC Significant Seasonal Concentration Areas

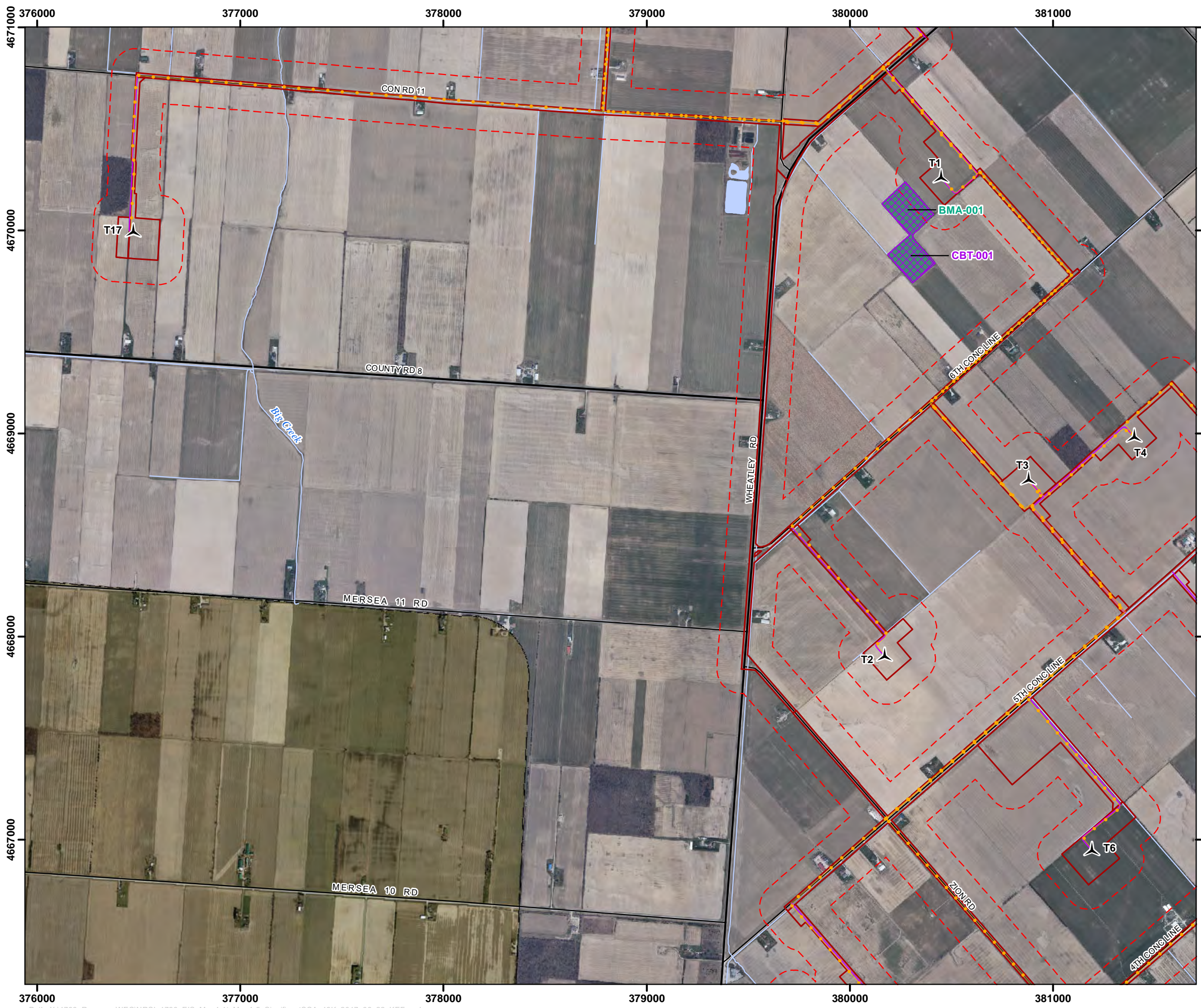
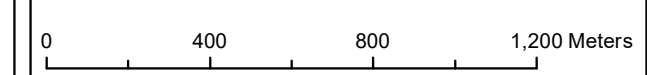


- Legend**
- Primary Road
  - Secondary Road
  - Permanent Watercourse
  - Open Water
  - Project Components**
    - 120m Setback
    - Project Location
    - Proposed Turbine
    - Proposed Collection Line
    - Proposed Access Road
  - Significant Seasonal Concentration Areas**
    - Bat Maternity Colony (BMA)
    - Colonially - Nesting Bird Breeding Habitat (Tree/Shrubs) (CBT)

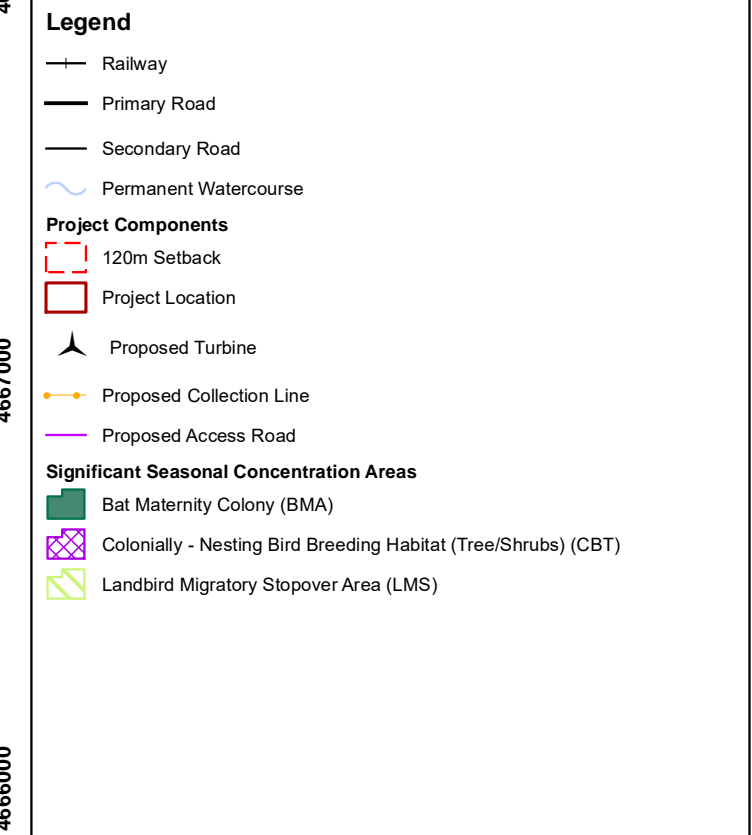
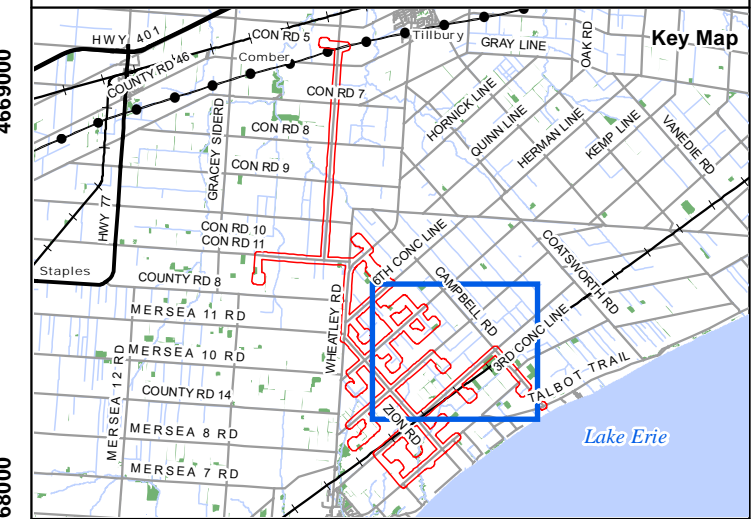


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# Romney WEC Significant Seasonal Concentration Areas

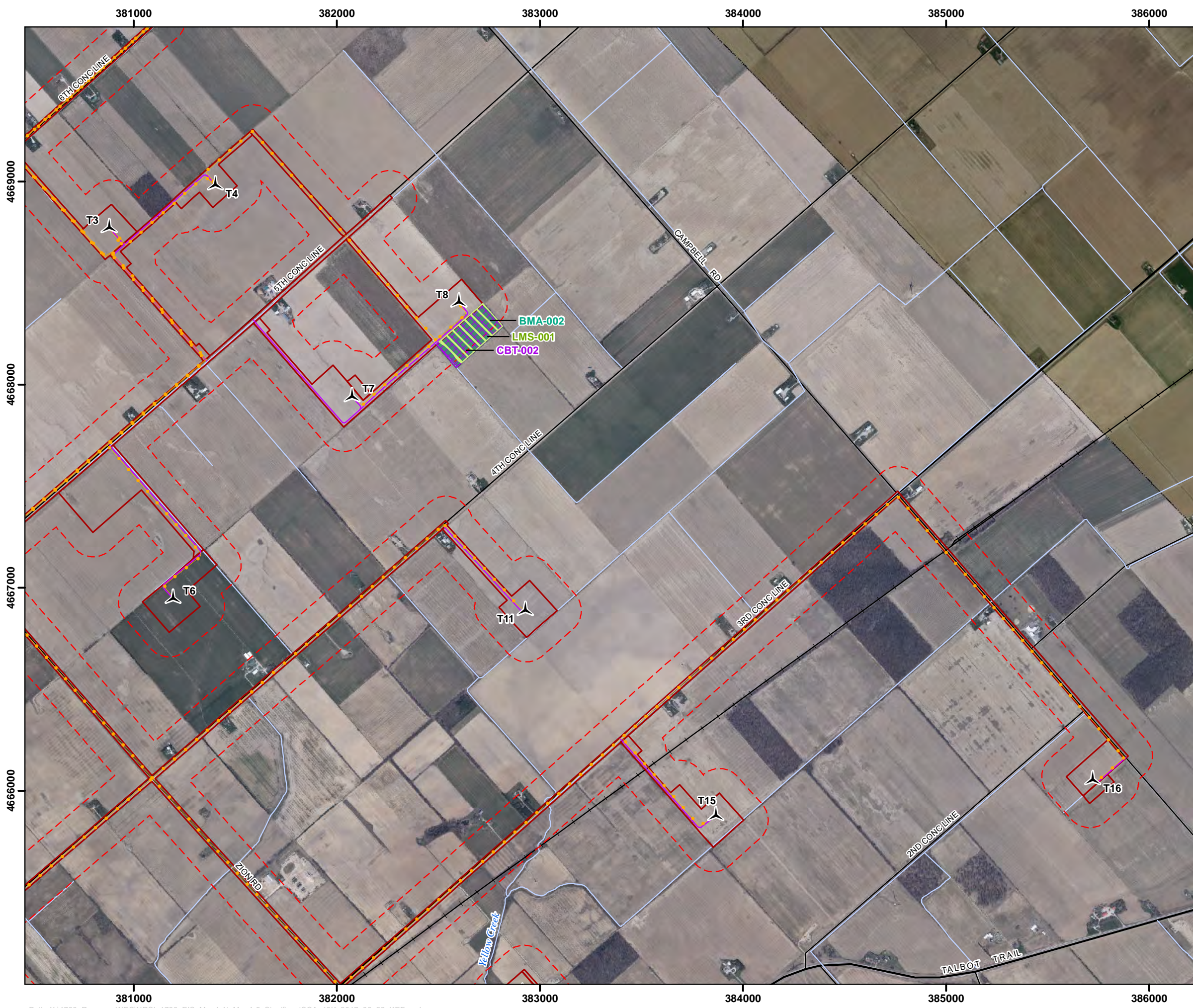


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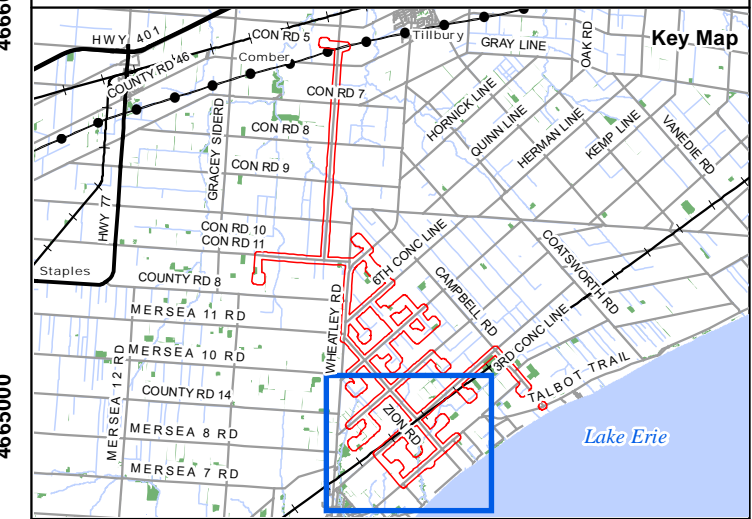
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| Project 1736<br>Date: June 22, 2017 | NAD83 - UTM Zone 17<br>Size: 11x17"<br>1:18,500 |
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0 400 800 1,200 Meters



# Romney WEC Significant Seasonal Concentration Areas



**Legend**

- Railway
- Primary Road
- Secondary Road
- Permanent Watercourse
- Open Water

**Project Components**

- 120m Setback
- Project Location
- Proposed Turbine
- Proposed Meteorological Tower
- Proposed Collection Line
- Proposed Access Road
- Proposed O&M Building

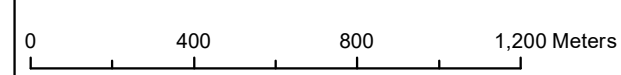
**Significant Seasonal Concentration Areas**

- Bat Maternity Colony (BMA)
- Colonially - Nesting Bird Breeding Habitat (Tree/Shrubs) (CBT)
- Landbird Migratory Stopover Area (LMS)



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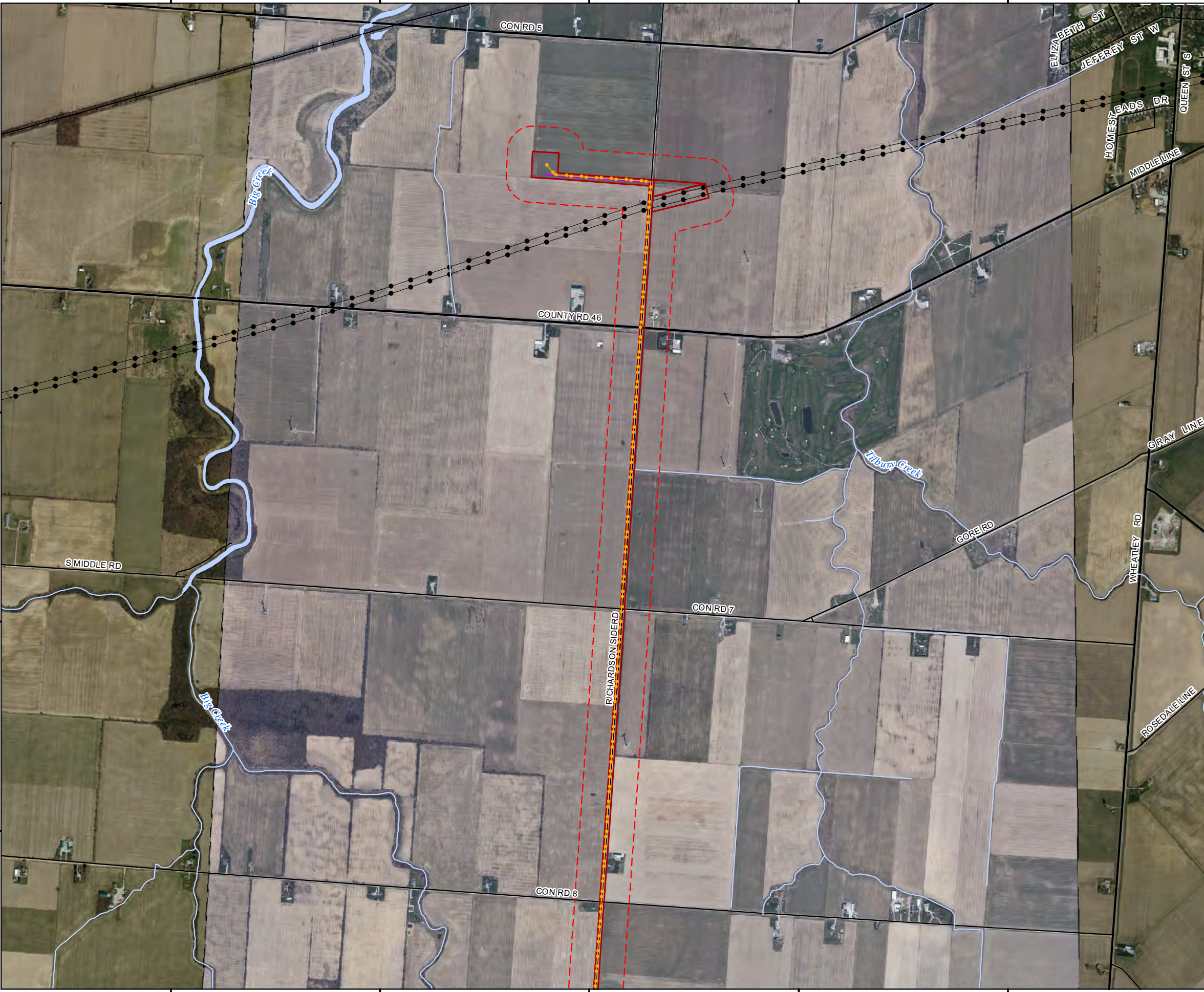
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| Project 1736<br>Date: June 22, 2017 | NAD83 - UTM Zone 17<br>Size: 11x17"<br>1:18,500 |
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**Maps 5-1 to 5-5**  
Significant Rare Vegetation Communities and Specialized Wildlife Habitats

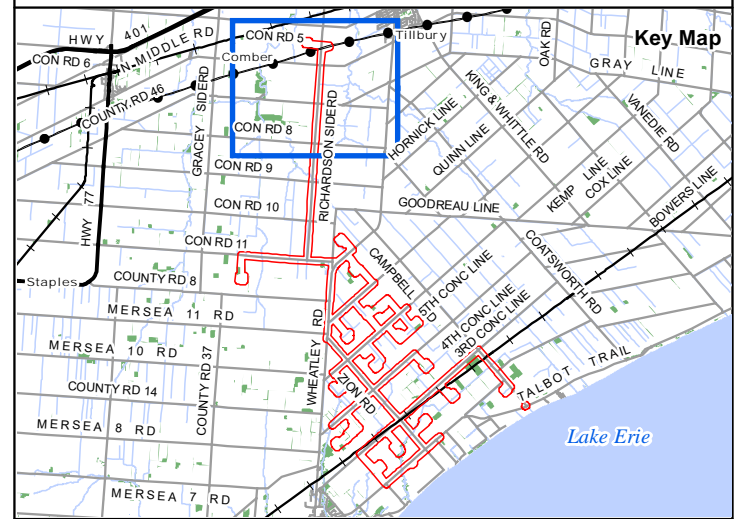
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# Romney WEC

## Significant Rare Vegetation Communities & Specialized Wildlife Habitats

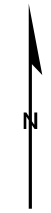
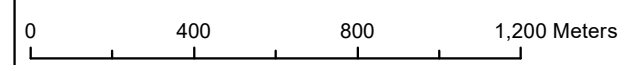


- Legend**
- Utility Line
  - Railway
  - Primary Road
  - Secondary Road
  - Permanent Watercourse
  - Open Water
- Project Components**
- 120m Setback
  - Project Location
  - Proposed Collection Line
  - Proposed Access Road



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| Project 1736<br>Date: June 22, 2017 | NAD83 - UTM Zone 17<br>Size: 11x17"<br>1:18,500 |
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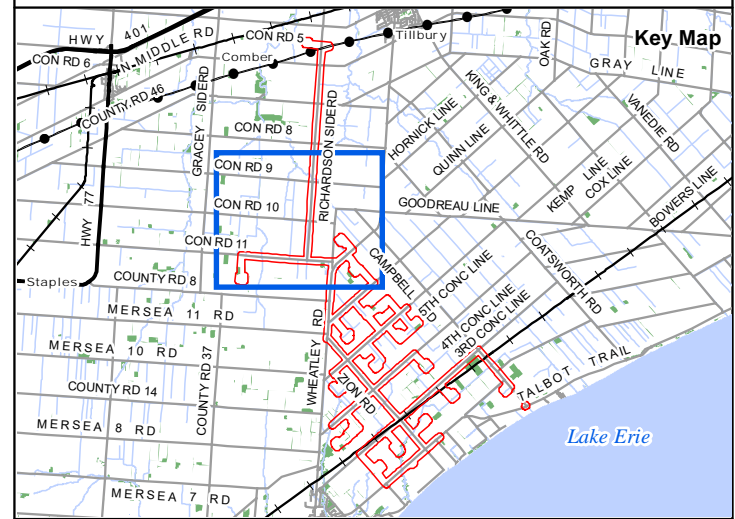


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# Romney WEC

## Significant Rare Vegetation Communities & Specialized Wildlife Habitats

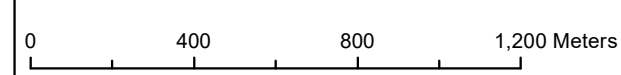


- Legend**
- Primary Road
  - Secondary Road
  - ~ Permanent Watercourse
  - Open Water
  - 120m Setback
  - Project Location
  - ▲ Proposed Turbine
  - Proposed Collection Line
  - Proposed Access Road
  - Other Rare Vegetation Communities (ORV)
  - Significant Specialized Wildlife Habitats
  - Amphibian Breeding Habitat (Woodland) (AWO)



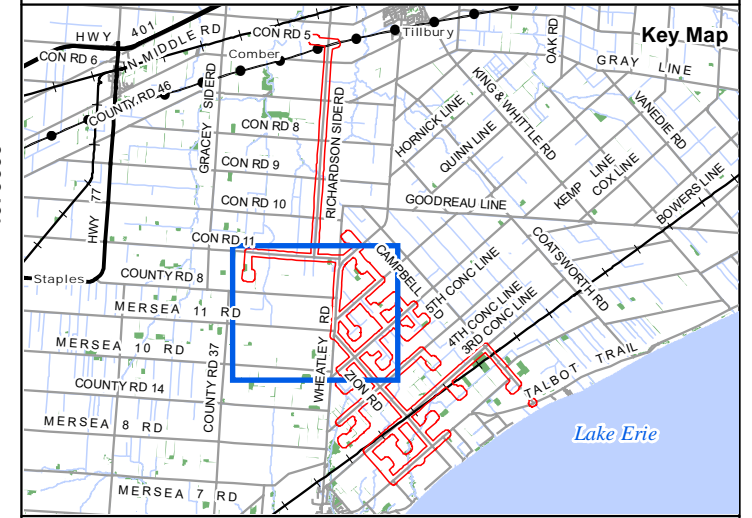
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| Project 1736<br>Date: June 22, 2017 | NAD83 - UTM Zone 17<br>Size: 11x17"<br>1:18,500 |
|-------------------------------------|---|



# Romney WEC

## Significant Rare Vegetation Communities & Specialized Wildlife Habitats



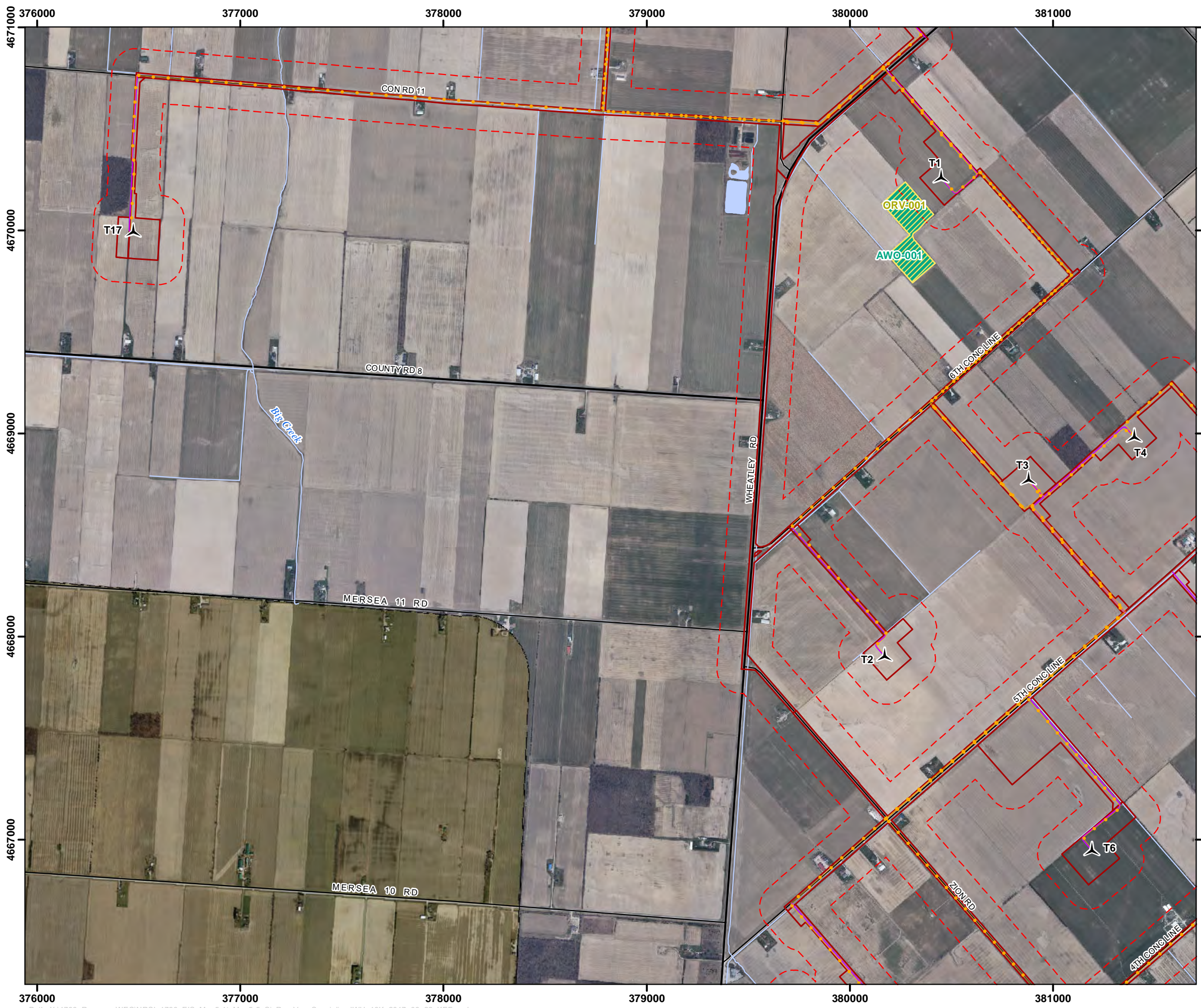
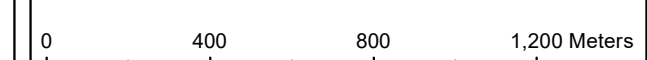
### Legend

- Primary Road
- Secondary Road
- Permanent Watercourse
- Open Water
- Project Components**
- 120m Setback
- Project Location
- Proposed Turbine
- Proposed Collection Line
- Proposed Access Road
- Significant Rare Vegetation Communities**
- Other Rare Vegetation Communities (ORV)
- Significant Specialized Wildlife Habitats**
- Amphibian Breeding Habitat (Woodland) (AWO)



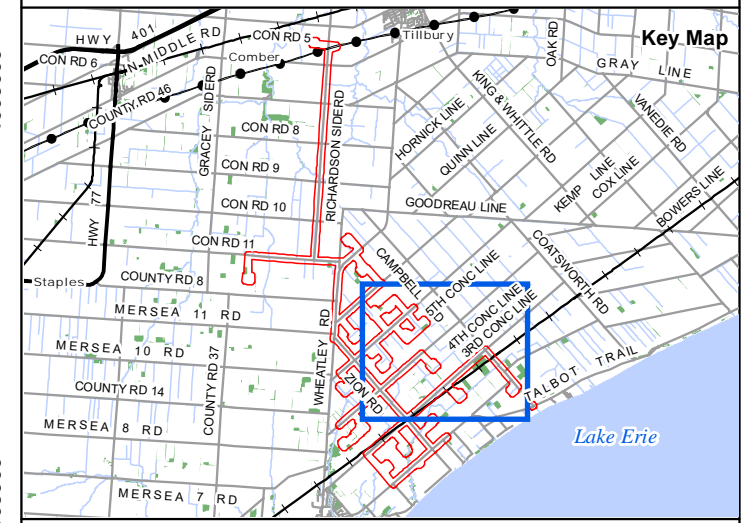
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| Project 1736<br>Date: June 22, 2017 | NAD83 - UTM Zone 17<br>Size: 11x17"<br>1:18,500 |
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# Romney WEC

## Significant Rare Vegetation Communities & Specialized Wildlife Habitats



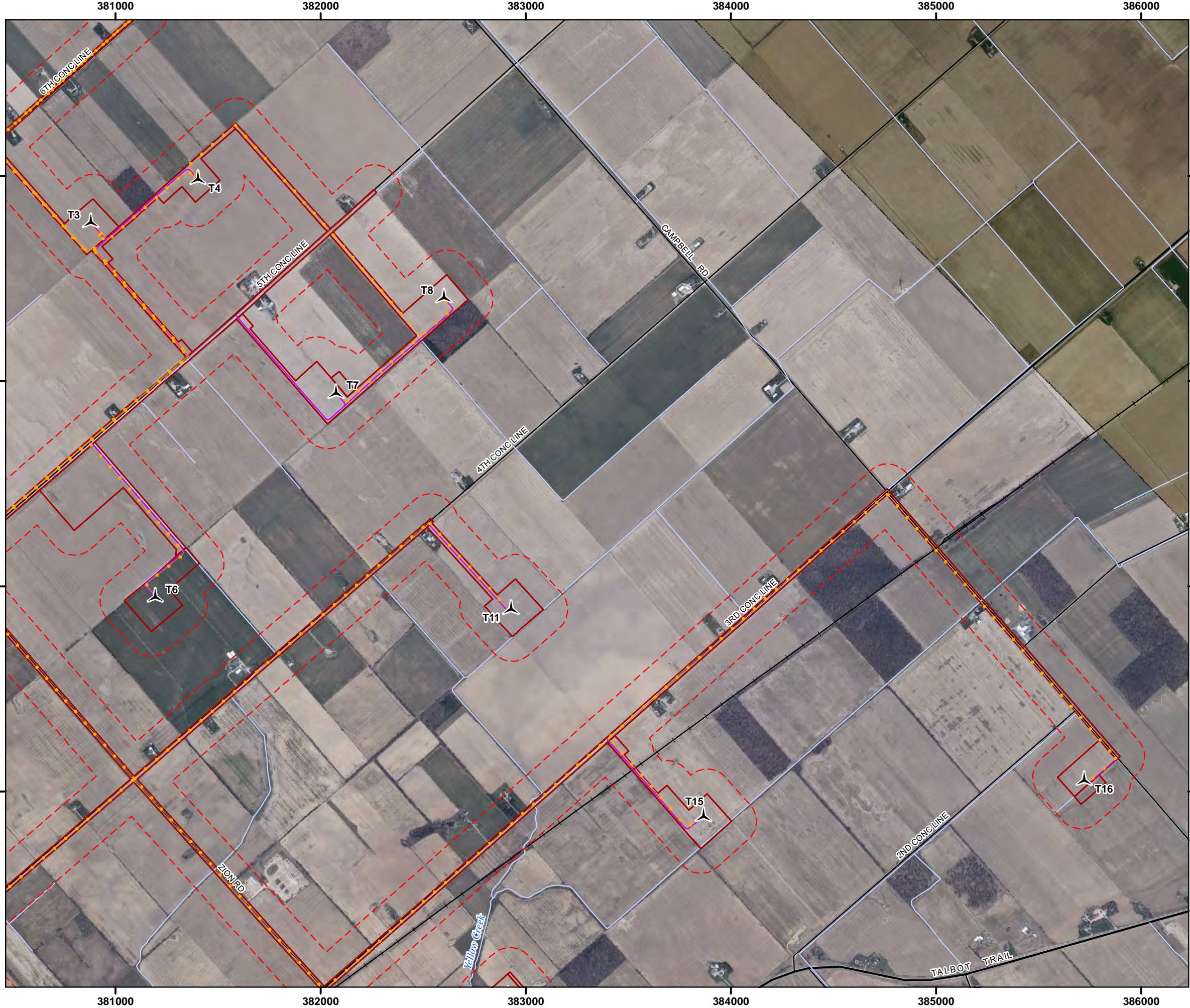
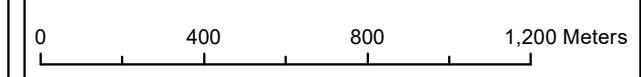
### Legend

- Railway
- Primary Road
- Secondary Road
- Permanent Watercourse
- Project Components**
  - 120m Setback
  - Project Location
  - Proposed Turbine
  - Proposed Collection Line
  - Proposed Access Road



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| Project 1736<br>Date: June 22, 2017 | NAD83 - UTM Zone 17<br>Size: 11x17"<br>1:18,500 |
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## Romney WEC

### Significant Rare Vegetation Communities & Specialized Wildlife Habitats

Map 5 - 5

**Key Map**

**Legend**

- Railway
- Primary Road
- Secondary Road
- Permanent Watercourse
- Open Water
- Project Components**
- 120m Setback
- Project Location
- Proposed Turbine
- Proposed Meteorological Tower
- Proposed Collection Line
- Proposed Access Road
- Proposed O&M Building

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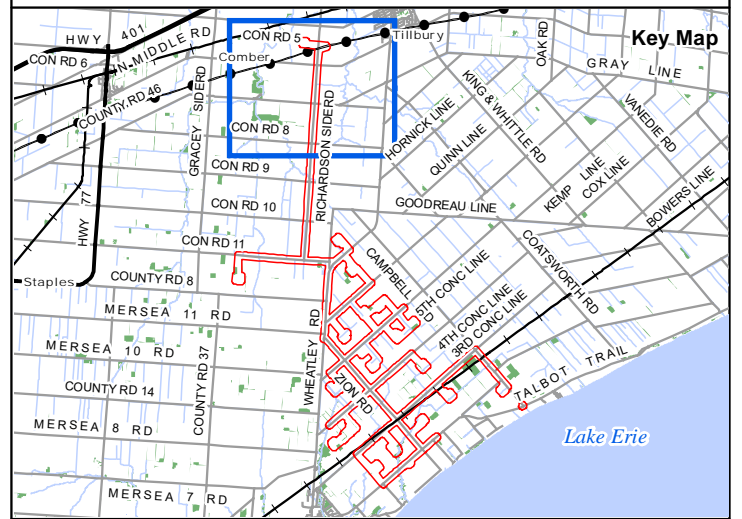
0      400      800      1,200 Meters

N

**Maps 6-1 to 6-6**  
Significant Habitats for Species of Conservation Concern

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# Romney WEC Significant Habitats for Species of Conservation Concern



- Legend**
- Utility Line
  - +— Railway
  - Primary Road
  - Secondary Road
  - ~ Permanent Watercourse
  - Open Water
- Project Components**
- 120m Setback
  - Project Location
  - Proposed Collection Line
  - Proposed Access Road



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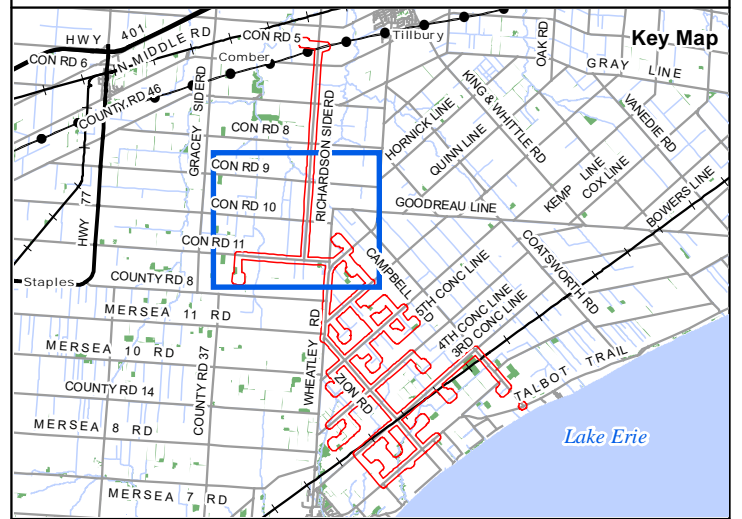
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| Project 1736<br>Date: July 11, 2017 | NAD83 - UTM Zone 17<br>Size: 11x17"<br>1:18,500 |  |
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# Romney WEC

## Significant Habitats for Species of Conservation Concern



- Legend**
- Primary Road
  - Secondary Road
  - ~ Permanent Watercourse
  - Open Water
  - Project Components
    - 120m Setback
    - Project Location
    - Proposed Turbine
    - Proposed Collection Line
    - Proposed Access Road
  - Significant Habitats for Species of Conservation Concern**
    - Proposed Bird Monitoring
    - Species of Conservation Concern Habitat (SCC)
      - 1 - Eastern Wood-Pewee
      - 3 - Wood Thrush
      - 5 - Slightly Hirsute Sedge
      - 6 - Squarrose Sedge
      - 7 - Cattail Sedge
      - 8 - Shellbark Hickory
      - 9 - Pumpkin Ash
      - 10 - Shumard Oak
      - 13 - Black Gum
      - 14 - Halberd-leaved



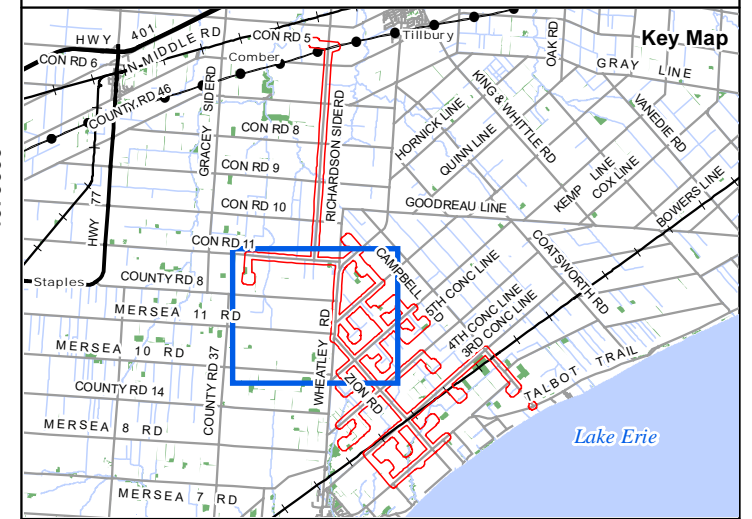
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|-------------------------------------|---|
| Project 1736<br>Date: July 11, 2017 | NAD83 - UTM Zone 17<br>Size: 11x17"<br>1:18,500 |
| 0 400 800 1,200 Meters              |   |



# Romney WEC

## Significant Habitats for Species of Conservation Concern

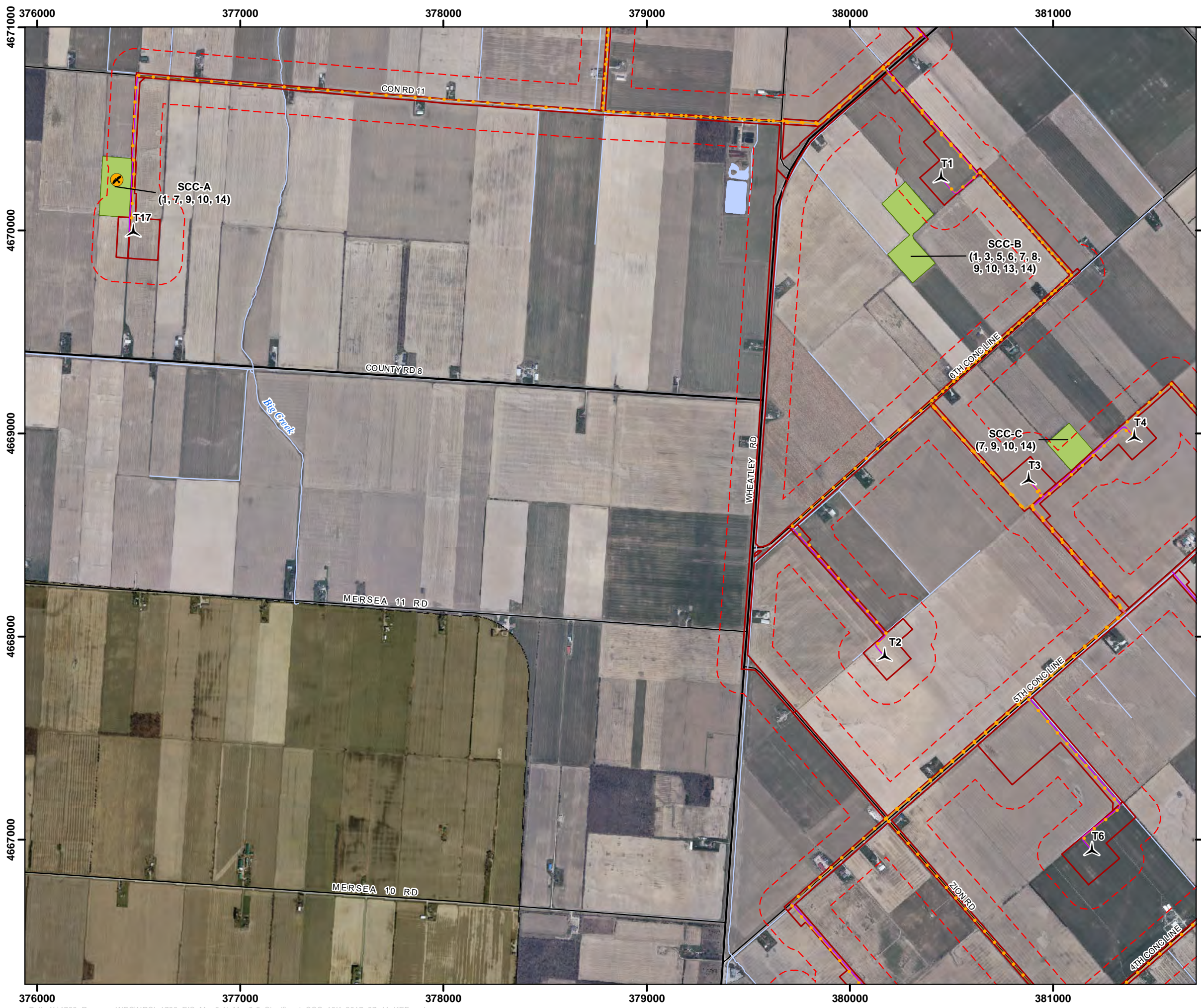


- Legend**
- Primary Road
  - Secondary Road
  - Permanent Watercourse
  - Open Water
  - Proposed Bird Monitoring Station
  - Species of Conservation Concern Habitat (SCC)
  - 1 - Eastern Wood-Pewee
  - 3 - Wood Thrush
  - 5 - Slightly Hirsute Sedge
  - 6 - Squarrose Sedge
  - 7 - Cattail Sedge
  - 8 - Shellbark Hickory
  - 9 - Pumpkin Ash
  - 10 - Shumard Oak
  - 13 - Black Gum
  - 14 - Halberd-leaved Smartweed
- Project Components**
- 120m Setback
  - Project Location
  - Proposed Turbine
  - Proposed Collection Line
  - Proposed Access Road

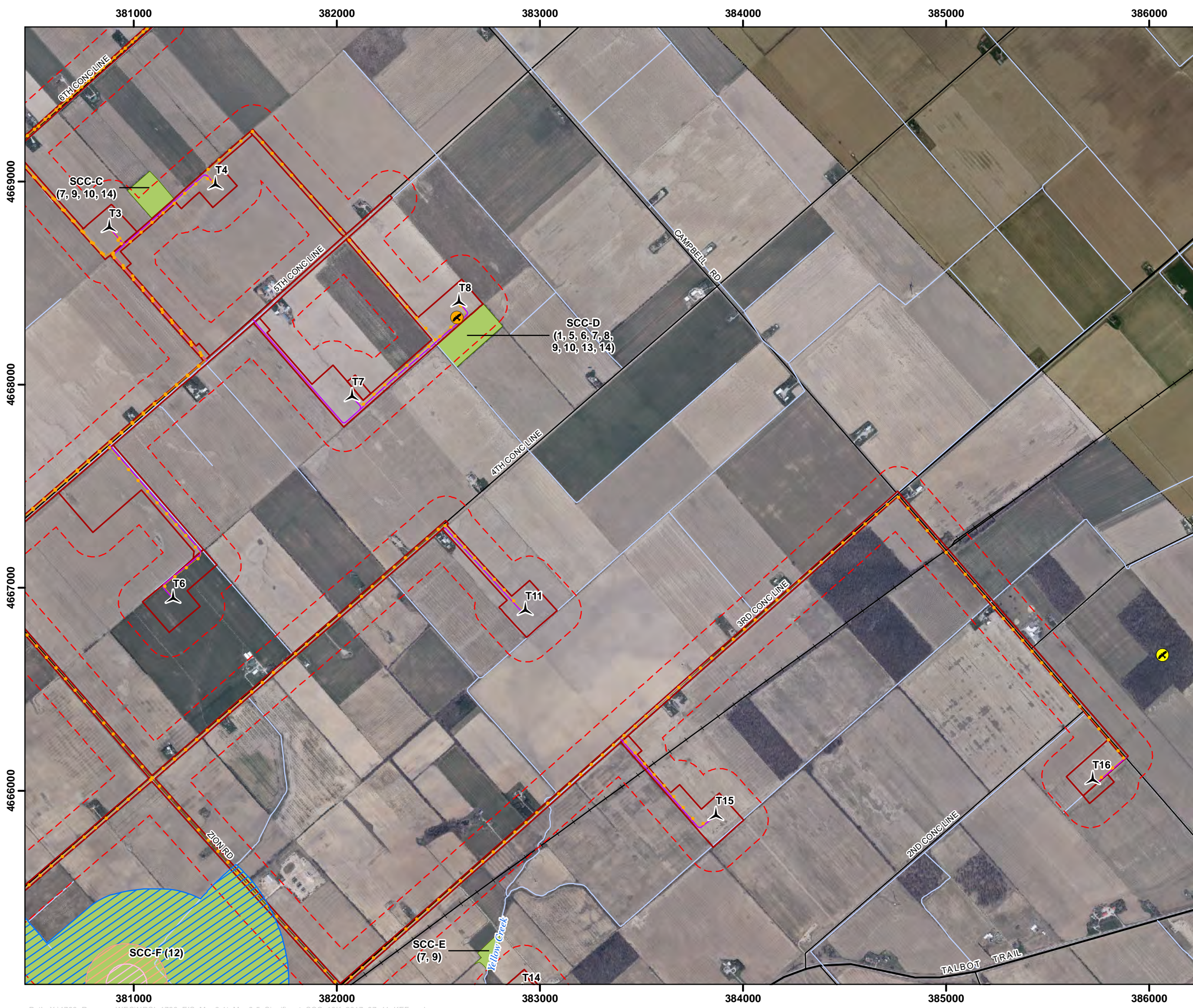
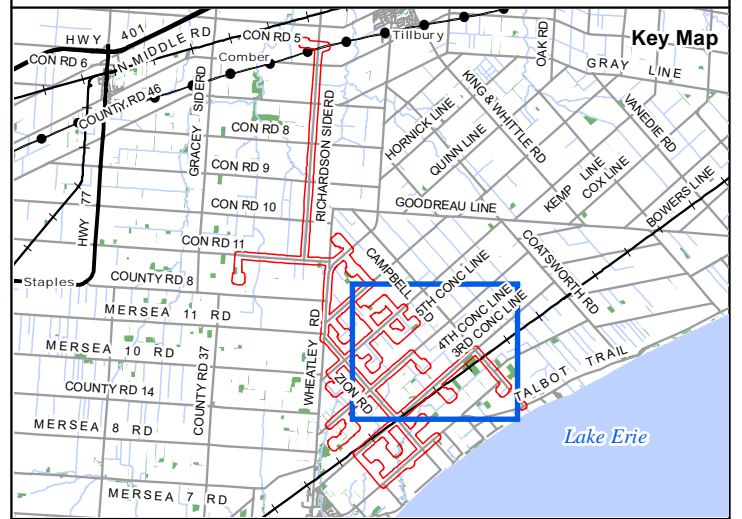


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# Romney WEC Significant Habitats for Species of Conservation Concern



**Legend**

- Railway
- Primary Road
- Secondary Road
- Permanent Watercourse
- 120m Setback
- Project Location
- Proposed Turbine
- Proposed Collection Line
- Proposed Access Road

**Significant Habitats for Species of Conservation Concern**

- Proposed Bird Monitoring Station
- Bald Eagle Nest Record (BAL-002)
- Species of Conservation Concern Habitat (SCC)
- 1 - Eastern Wood-Pewee
- 5 - Slightly Hirsute Sedge
- 6 - Squarrose Sedge
- 7 - Cattail Sedge
- 8 - Shellbark Hickory
- 9 - Pumpkin Ash
- 10 - Shumard Oak
- 12 - Bald Eagle
- 13 - Black Gum
- 14 - Halberd-leaved Smartweed

**Bald Eagle Habitat Zones**

- Primary Zone
- Secondary Zone
- Tertiary Zone

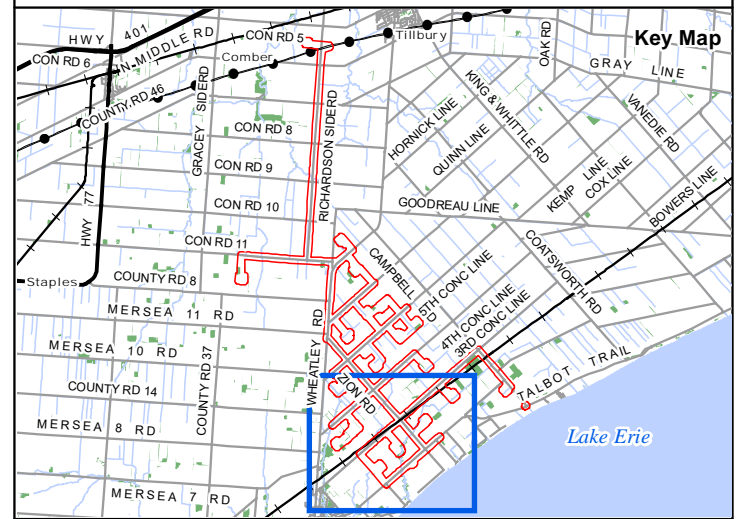
**NATURAL RESOURCE SOLUTIONS INC.**  
Aquatic, Terrestrial and Wetland Biologists

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0 400 800 1,200 Meters

# Romney WEC Significant Habitats for Species of Conservation Concern



**Legend**

- Railway
- Primary Road
- Secondary Road
- Permanent Watercourse
- Open Water
- Proposed Turbine
- Proposed Meteorological Tower
- Proposed Collection Line
- Proposed Access Road
- Proposed O&M Building

**Significant Habitats for Species of Conservation Concern**

- Proposed Bird Monitoring Station
- Proposed Bird Monitoring Transect
- Species of Conservation Concern Habitat (SCC)

**Project Components**

- 120m Setback
- Project Location

**Bald Eagle Habitat Zones**

- Primary Zone
- Secondary Zone
- Tertiary Zone

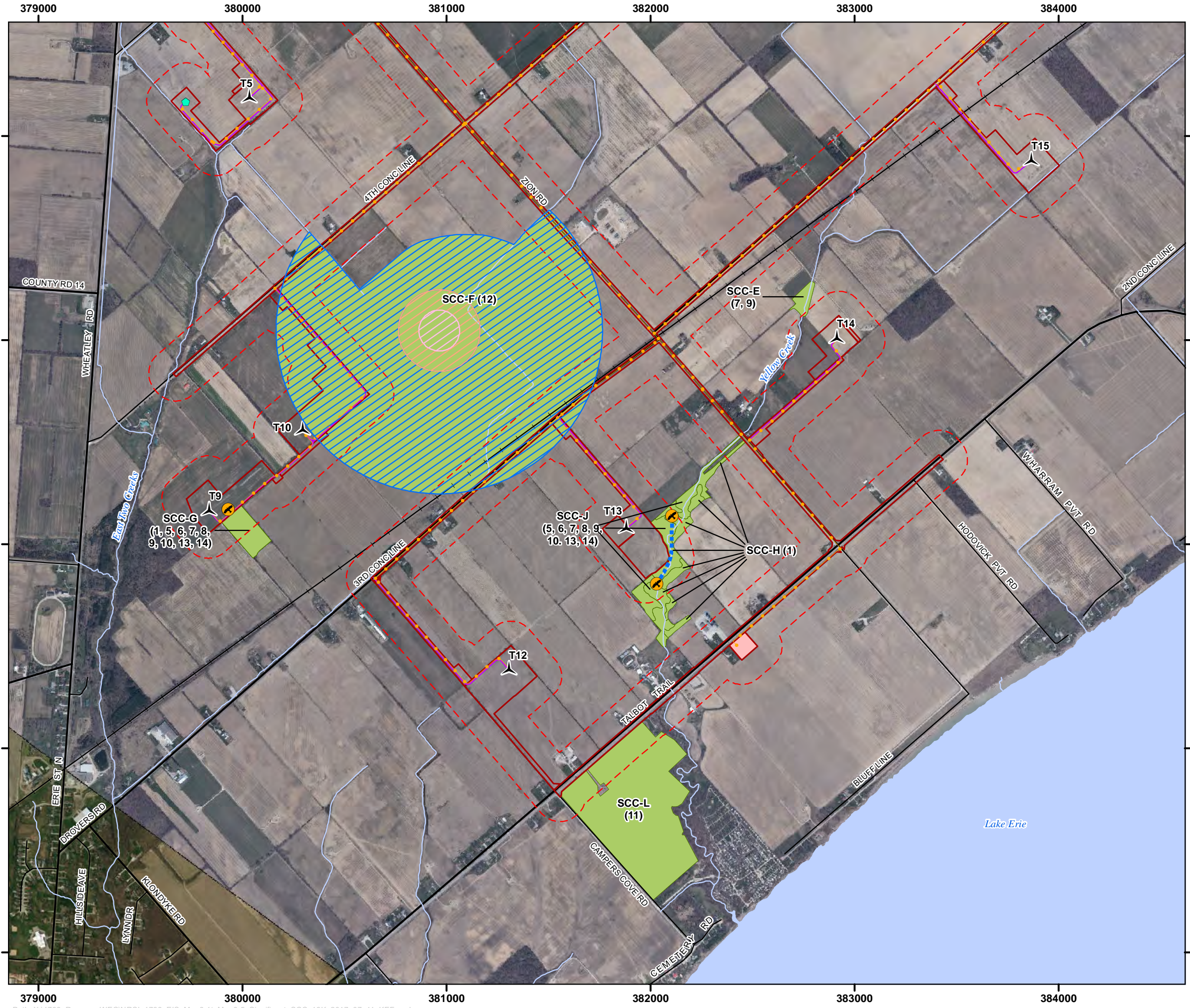
**Species of Conservation Concern Habitat (SCC) List:**

- Eastern Wood-Pewee
- Slightly Hirsute Sedge
- Squarrose Sedge
- Cattail Sedge
- Shellbark Hickory
- Pumpkin Ash
- Shumard Oak
- Climbing Prairie Rose
- Bald Eagle
- Black Gum
- Halberd-leaved Smartweed



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# Romney WEC

## Species of Conservation Concern Habitat

Project: 1736

Date: June 23, 2017



**SCC-A**

Eastern Wood Pewee: EWP-001  
Cattail Sedge: CSE-001  
Pumpkin Ash: PAS-001  
Shumard Oak: SHO-001  
Halberd-leaved Smartweed: HLS-001

**SCC-B**

Eastern Wood Pewee: EWP-002  
Wood Thrush: WTH-001  
Slightly Hirsute Sedge: SHS-002  
Squarrose Sedge: SQS-002  
Cattail Sedge: CSE-002  
Shellbark Hickory: SHH-002  
Pumpkin Ash: PAS-002  
Shumard Oak: SHO-002  
Black Gum: BGU-002  
Halberd-leaved Smartweed: HLS-002

**SCC-C**

Cattail Sedge: CSE-003  
Pumpkin Ash: PAS-003  
Shumard Oak: SHO-003  
Halberd-leaved Smartweed: HLS-003

**SCC-D**

Eastern Wood Pewee: EWP-003  
Slightly Hirsute Sedge: SHS-004  
Squarrose Sedge: SQS-004  
Cattail Sedge: CSE-004  
Shellbark Hickory: SHH-004  
Pumpkin Ash: PAS-004  
Shumard Oak: SHO-004  
Black Gum: BGU-004  
Halberd-leaved Smartweed: HLS-004

**SCC-E**

Cattail Sedge: CSE-007  
Pumpkin Ash: PAS-007

**SCC-F**

Bald Eagle: BAL-001

**SCC-G**

Eastern Wood Pewee: EWP-004  
Slightly Hirsute Sedge: SHS-005  
Squarrose Sedge: SQS-005  
Cattail Sedge: CSE-005  
Shellbark Hickory: SHH-005  
Pumpkin Ash: PAS-005  
Shumard Oak: SHO-005  
Black Gum: BGU-005  
Halberd-leaved Smartweed: HLS-005

**SCC-H**

Eastern Wood Pewee: EWP-005

**SCC-J**

Slightly Hirsute Sedge: SHS-006  
Squarrose Sedge: SQS-006  
Cattail Sedge: CSE-006  
Shellbark Hickory: SHH-006  
Pumpkin Ash: PAS-006  
Shumard Oak: SHO-006  
Black Gum: BGU-006  
Halberd-leaved Smartweed: HLS-006

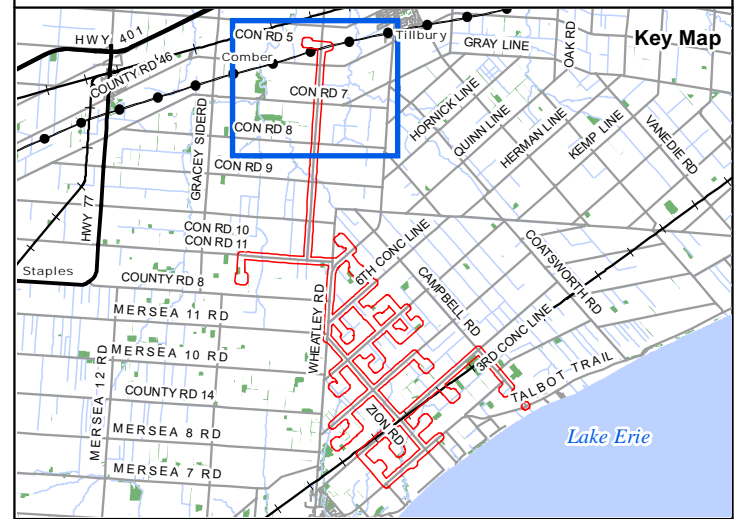
**SCC-L**

Climbing Prairie Rose: CPR-001

**Maps 7-1 to 7-5**  
Generalized Significant Wildlife Habitats

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# Romney WEC Generalized Significant Wildlife Habitat

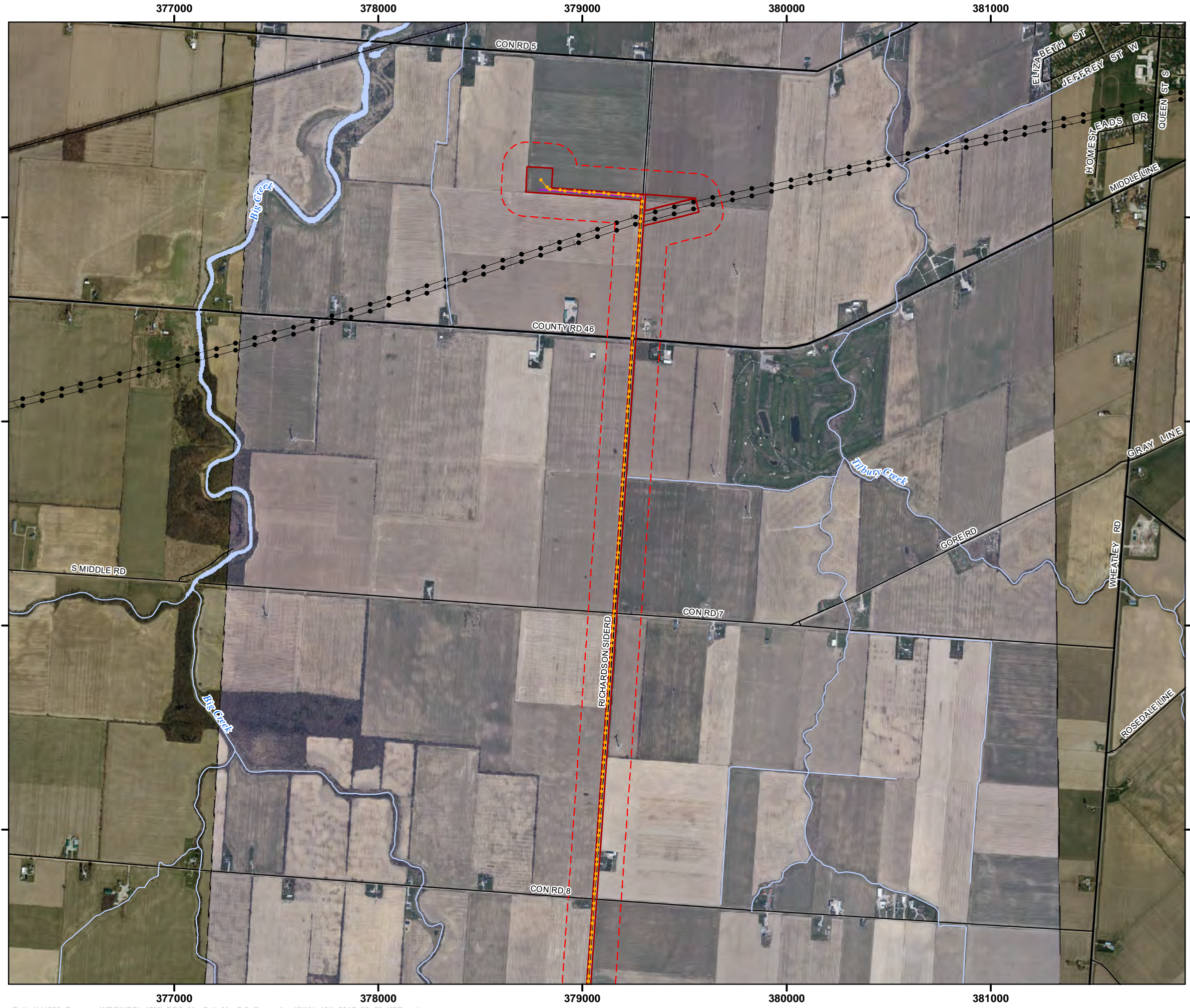
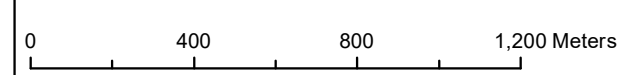


- Legend**
- Utility Line
  - Railway
  - Primary Road
  - Secondary Road
  - ~ Permanent Watercourse
  - Open Water
- Project Components**
- 120m Setback
  - Project Location
  - Proposed Collection Line
  - Proposed Access Road

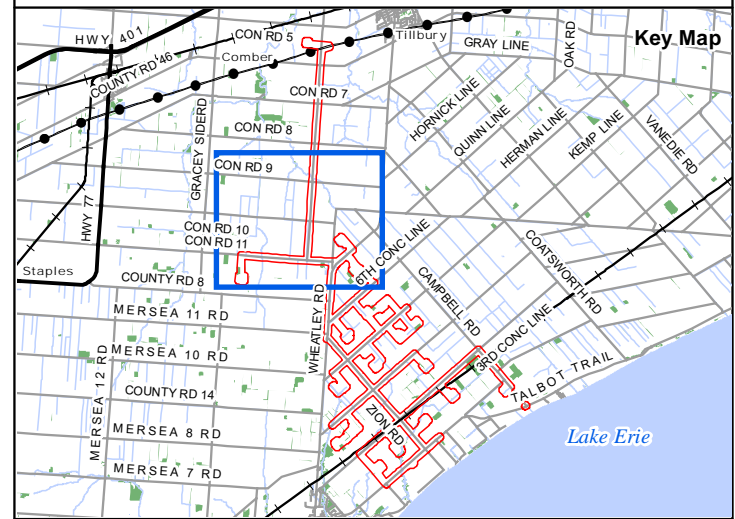


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# Romney WEC Generalized Significant Wildlife Habitat



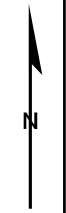
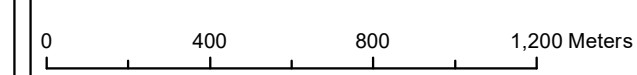
### Legend

- Primary Road
- Secondary Road
- Permanent Watercourse
- Open Water
- Project Components**
- 120m Setback
- Project Location
- Proposed Turbine
- Proposed Collection Line
- Proposed Access Road
- Generalized Significant Wildlife Habitat



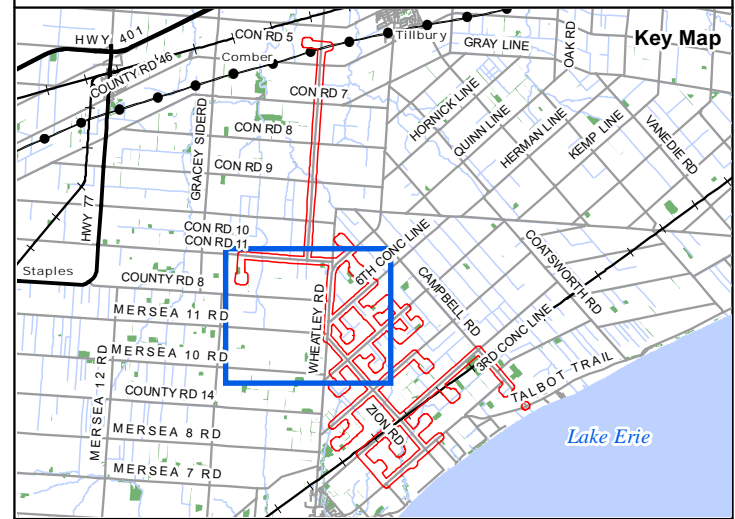
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# Romney WEC Generalized Significant Wildlife Habitat

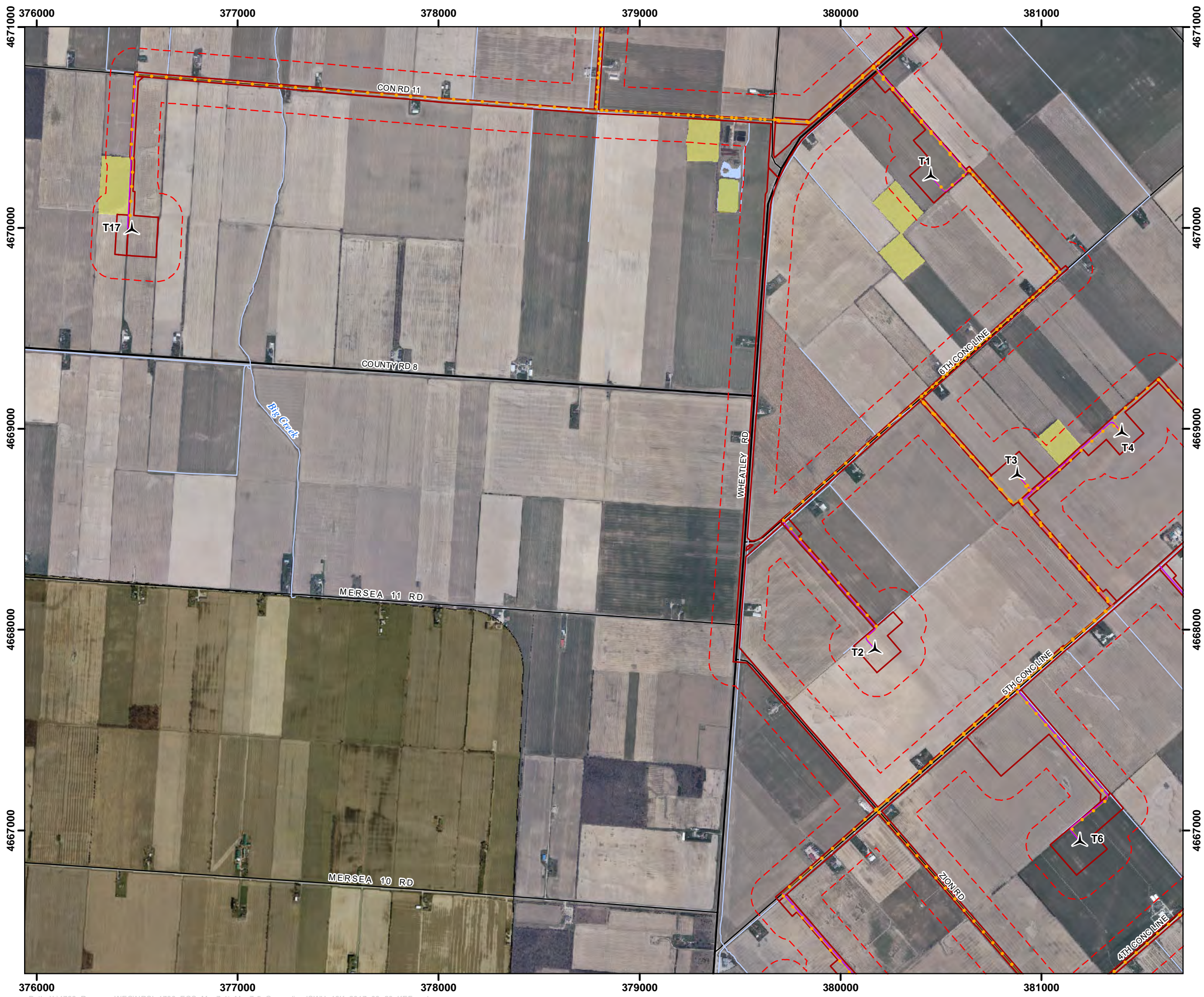
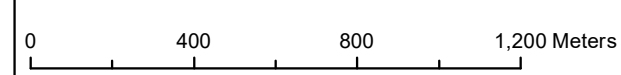


- Legend**
- Primary Road
  - Secondary Road
  - ~ Permanent Watercourse
  - Open Water
  - Project Components**
  - 120m Setback
  - Project Location
  - Proposed Turbine
  - Proposed Collection Line
  - Proposed Access Road
  - Generalized Significant Wildlife Habitat

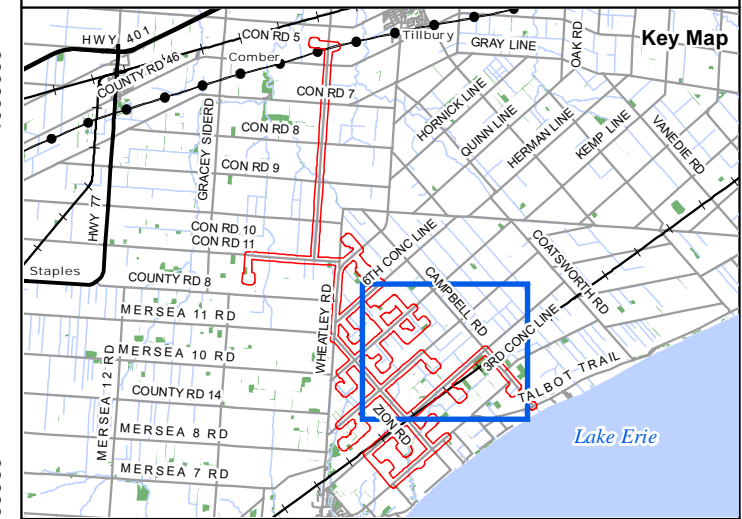


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# Romney WEC Generalized Significant Wildlife Habitat



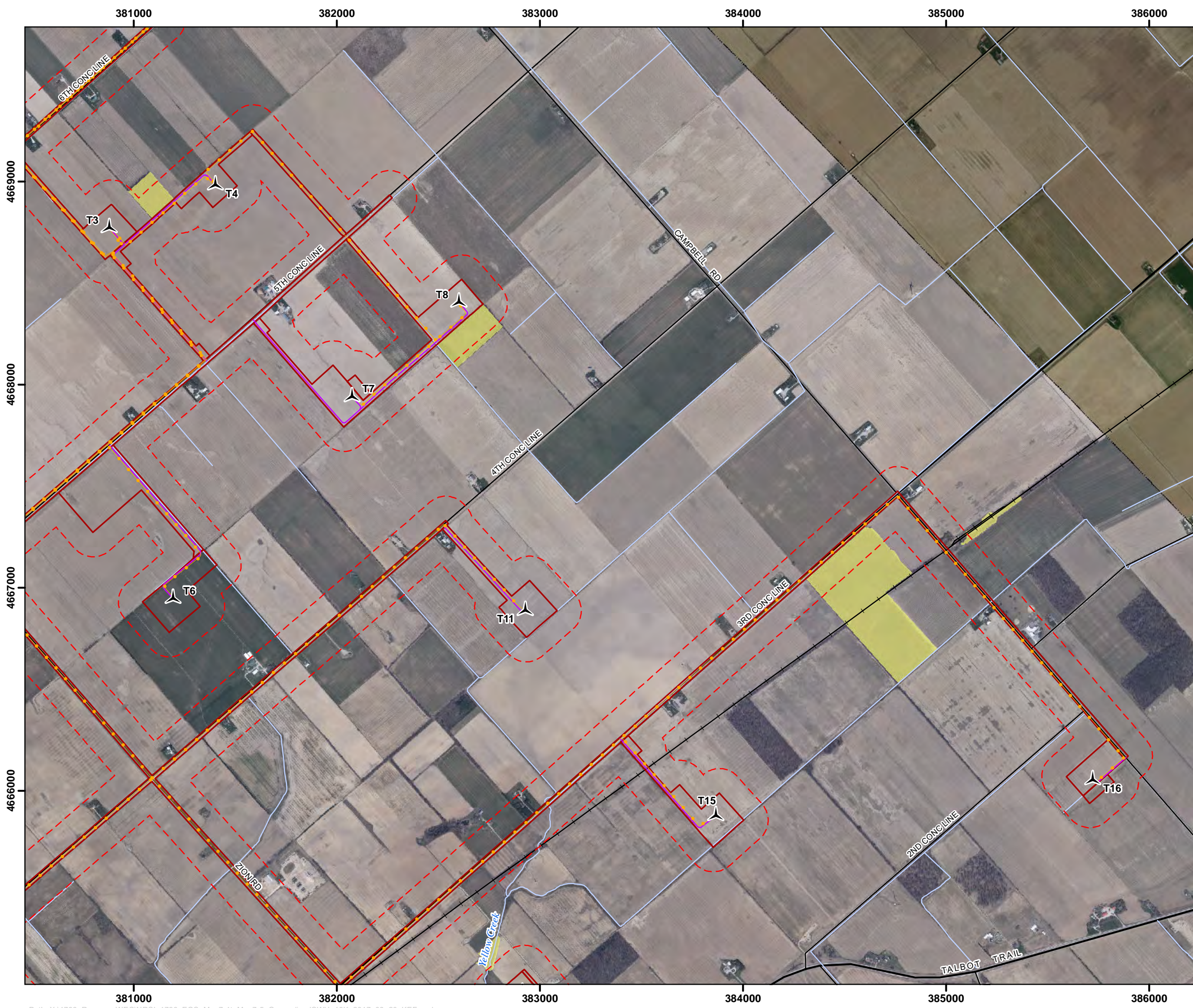
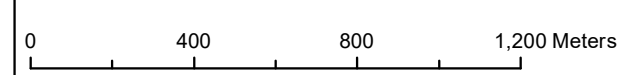
### Legend

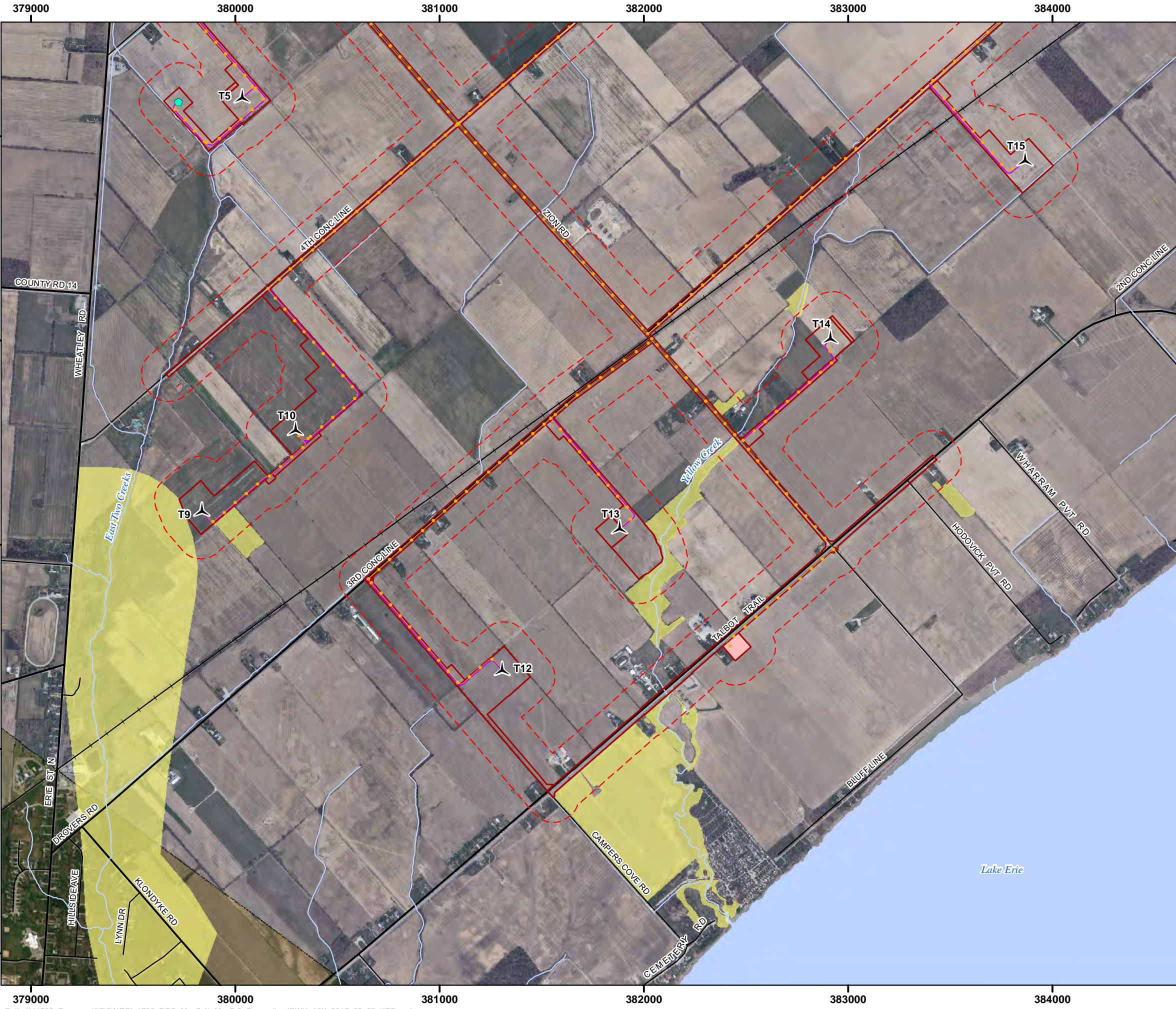
- Railway
- Primary Road
- Secondary Road
- Permanent Watercourse
- Project Components**
- 120m Setback
- Project Location
- Proposed Turbine
- Proposed Collection Line
- Proposed Access Road
- Generalized Significant Wildlife Habitat



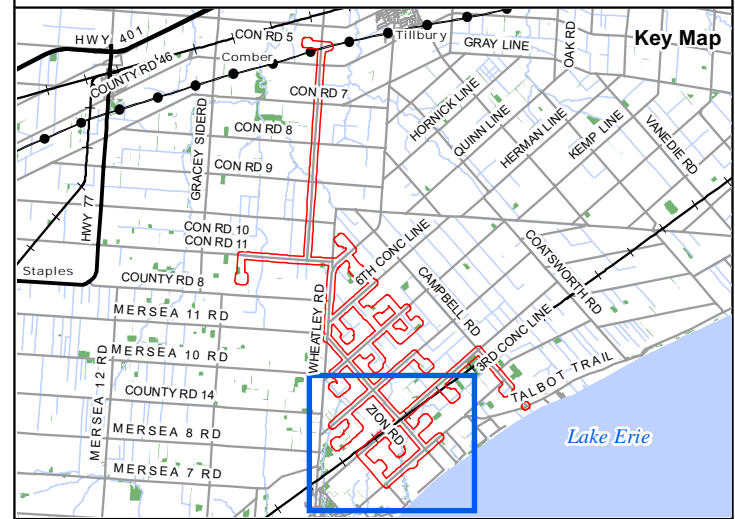
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# Romney WEC Generalized Significant Wildlife Habitat



- Legend**
- Railway
  - Primary Road
  - Secondary Road
  - Permanent Watercourse
  - Open Water
  - Project Components**
  - 120m Setback
  - Project Location
  - Proposed Turbine
  - Proposed Meteorological Tower
  - Proposed Collection Line
  - Proposed Access Road
  - Proposed O&M Building
  - Generalized Significant Wildlife Habitat



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0 400 800 1,200 Meters