



**DILLON**  
CONSULTING

LOYALIST SOLAR LP

# **Natural Heritage Assessment Records Review Report**

**Loyalist Solar Project**

# Table of Contents

|            |  |           |
|------------|--|-----------|
| <b>1.0</b> | <b>Introduction</b>                              | <b>1</b>  |
| <b>2.0</b> | <b>The Proponent</b>                             | <b>3</b>  |
| <b>3.0</b> | <b>Project Location</b>                          | <b>4</b>  |
| <b>4.0</b> | <b>Methodology</b>                               | <b>7</b>  |
| <b>5.0</b> | <b>Results</b>                                   | <b>10</b> |
| 5.1        | Natural Features .....                           | 10        |
| 5.1.1      | Provincial Parks and Conservation Reserves ..... | 10        |
| 5.1.2      | ANSI, Life Science.....                          | 10        |
| 5.1.3      | ANSI, Earth Science.....                         | 10        |
| 5.1.4      | Wetlands.....                                    | 10        |
| 5.1.5      | Woodlands.....                                   | 13        |
| 5.1.6      | Wildlife Habitat.....                            | 13        |
| 5.2        | Supplementary Wildlife Habitat Information ..... | 17        |
| 5.2.1      | Vascular Plant and Bryophyte Diversity .....     | 17        |
| 5.2.2      | Wildlife Species Diversity.....                  | 17        |
| 5.2.3      | Birds .....                                      | 17        |
| 5.2.4      | Mammals .....                                    | 18        |
| 5.2.5      | Herpetozoa .....                                 | 18        |
| 5.2.6      | Invertebrates .....                              | 18        |
| 5.3        | Provincial Plan Areas.....                       | 18        |
| 5.4        | Species at Risk .....                            | 19        |
| 5.5        | Other Required Approvals and Permitting .....    | 19        |
| <b>6.0</b> | <b>Conclusions</b>                               | <b>20</b> |
| <b>7.0</b> | <b>References</b>                                | <b>24</b> |

## Figures

---

|  |    |
|--|----|
| Figure 1: General Project Location.....    | 2  |
| Figure 2: Project Location .....           | 6  |
| Figure 3: NHA Records Review Mapping ..... | 12 |

## Tables

---

|  |    |
|--|----|
| Table 1: Records and Resources Searched and Analyzed During Records Review.....                    | 7  |
| Table 2: Summary of Wildlife Habitat Identified within the Project Location and 50 m Setback ..... | 14 |
| Table 3: Summary of Provincial Plan Areas and Applicability to the Project Location.....           | 19 |
| Table 4: Summary of the Natural Heritage Assessment Records Review .....                           | 20 |

## Appendices

---

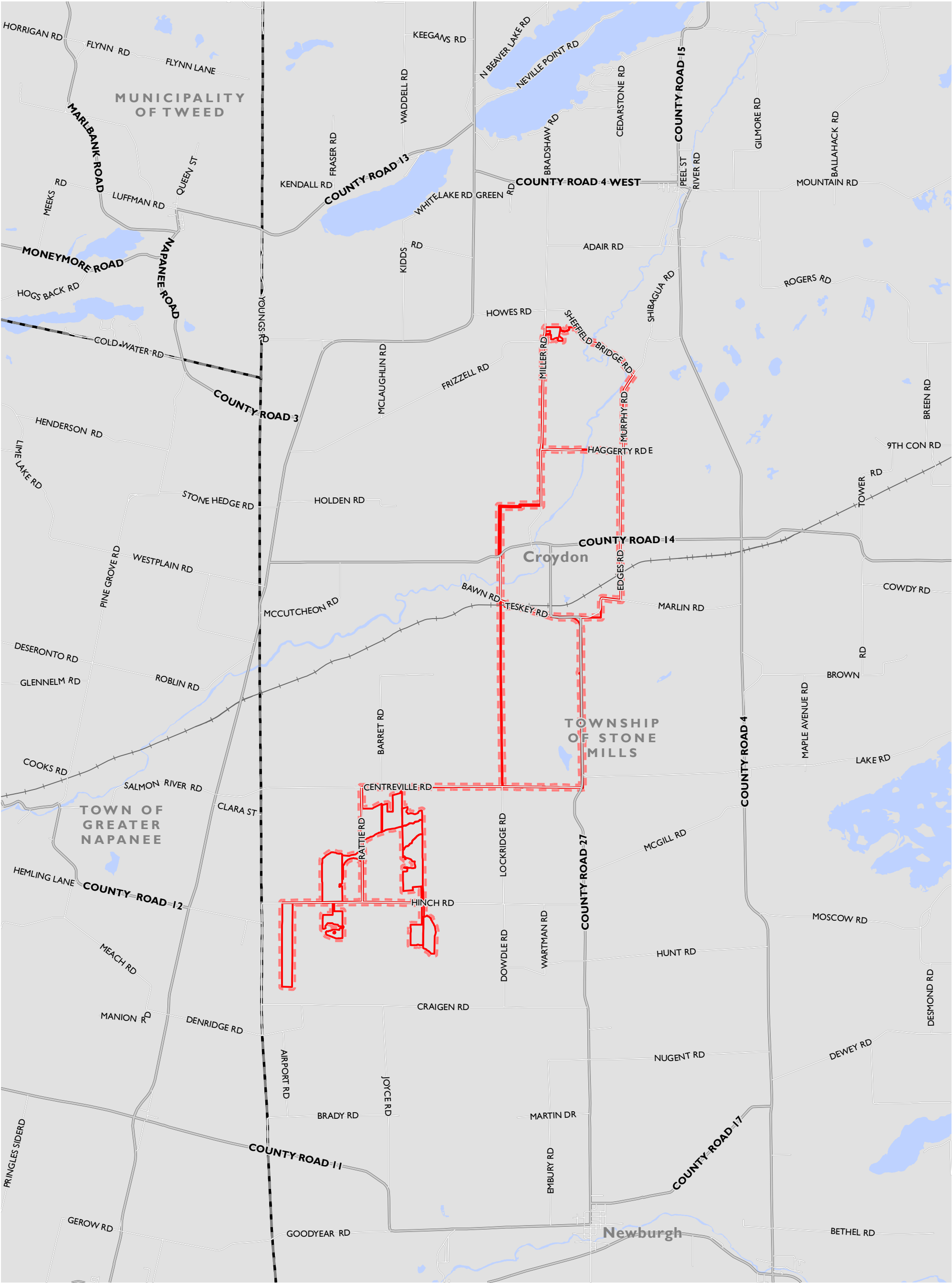
|   |                           |
|---|---------------------------|
| A | Supplementary Information |
| B | Data Layers               |
| C | Species Lists             |

## 1.0 Introduction

Loyalist Solar LP, a limited partnership between Mohawks of the Bay of Quinte and BluEarth Renewables Inc. (together the “Proponent”), proposes to develop a non-rooftop solar facility with a maximum name plate capacity of 54 megawatts alternating current (“MW AC.”), located in the Township of Stone Mills, County of Lennox & Addington, Ontario (**Figure 1**). The renewable energy facility will be known as the Loyalist Solar Project (the “Project”).

The Proponent submitted a proposal to the Independent Electricity System Operator (“IESO”) under the Large Renewable Procurement I (“LRP”) process and was subsequently awarded a LRP contract by the IESO to generate electricity. The Project will now be subject to a number of approvals including, among others, including *Ontario Regulation 359/09 – Renewable Energy Approval (“REA”)* under Part V.0.1 of the *Ontario Environmental Protection Act*.

This Natural Heritage Assessment (“NHA”) Records Review Report was completed in partial fulfillment of the regulatory requirements for the REA process. Following review and comment by the Ministry of Natural Resources and Forestry (“MNRF”), this report will be finalized for submission to the Ministry of the Environment and Climate Change (“MOECC”) as part of the REA application. Additional details regarding the natural features, their significance, potential impacts and mitigation measures required to protect these features will be provided, as required, in separate reports, including the *NHA Site Investigation*, *NHA Evaluation of Significance* and *NHA Environmental Impact Study Reports*. These reports are submitted to the MNRF for review and comment, as required under *Ontario Regulation 359/09*. For a description of the requirements of a Natural Heritage Assessment, please refer to the MNRF’s Natural Heritage Assessment Guide for Renewable Energy Projects (MNRF 2012). Discussion of Species at Risk, fish habitat and other information needs, as outlined in the MNRF’s Approval and Permitting Requirements Document (APRD) for Renewable Energy (MNRF 2009), are discussed in separate reports, under direction from the MNRF and in compliance with the REA and other applicable legislation.



**BluEarth Renewables Inc.**  
LOYALIST SOLAR LP

**General Project Location**  
FIGURE 1

- +— Railway
- ▭ Project Location Boundary
- - - Project Location 50 m Setback
- ▭ Municipal Boundary



MAP CREATED BY: GM  
MAP CHECKED BY: JP  
MAP PROJECTION: NAD 1983 UTM Zone 18N



PROJECT: 163674 STATUS: DRAFT DATE: 10/27/2016

## 2.0 The Proponent

The Proponent is coordinating and managing the approvals process for the Project. The contact is:

|                              |  |
|------------------------------|--|
| <b>Full Name of Company:</b> | <i>Loyalist Solar LP, c/o BluEarth Renewables Inc.</i>         |
| <b>Prime Contact:</b>        | <i>Tom Bird, Director, Regulatory</i>                          |
| <b>Address:</b>              | <i>34 Harvard Road, Guelph, ON, N1G 4V8</i>                    |
| <b>Telephone:</b>            | <i>1-844-214-2578</i>  |
| <b>Email:</b>                | <a href="mailto:Projects@bluearth.ca">Projects@bluearth.ca</a> |

Dillon Consulting Limited ("Dillon") has been retained by the Proponent to prepare the REA application for the Project. The contact at Dillon is:

|                              |  |
|------------------------------|--|
| <b>Full Name of Company:</b> | <i>Dillon Consulting Limited</i>                               |
| <b>Prime Contact:</b>        | <i>Megan Bellamy, Project Manager</i>                          |
| <b>Address:</b>              | <i>235 Yorkland Boulevard, Suite 800, Toronto, ON, M2J 4Y8</i> |
| <b>Telephone:</b>            | <i>(416) 229-4646 ext. 2423</i>                                |
| <b>Fax:</b>                  | <i>(416) 229-4692</i>  |
| <b>Email:</b>                | <a href="mailto:MBellamy@dillon.ca">MBellamy@dillon.ca</a>     |

## 3.0 Project Location

This Class 3 Solar Facility is to be located within the Township of Stone Mills, in the County of Lennox & Addington, approximately nine kilometres north of Napanee, Ontario. The Project Location, situated on multiple privately owned parcels, consists of approximately 200 hectares (494 acres) and is contained within an area generally bounded on the north by Howe's Road, Craigen Road to the south, County Road 27 and Murphy road to the east and County Road 41 to the west (described as the "Project Location" on **Figure 2**). It has an approximate centroid at the following geographic coordinates:

- Latitude: 44°22'3.382" N
- Longitude: 76°58'19.534" W

**Figure 2** overviews the maximum extent of the Project Location for the purposes of this *NHA Records Review Report*. The term "Project Location" is defined in *Ontario Regulation 359/09* to be "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". The specific facility components making up the Project Location and their exact locations within the overall Project Location have yet to be determined. This information will be provided in the *NHA Environmental Impact Study*. Project components, including photovoltaic ("PV") panels and electrical facilities such as inverters, transformers, a substation and Project access roads will be located on private land. Some Project components, such as electrical collector lines and the connection line route to the substation will be located in open and unopened road right-of-ways, or on private lands. **Figure 2** includes the potential connection line routes that are under consideration to connect the Project to the provincial electricity grid.

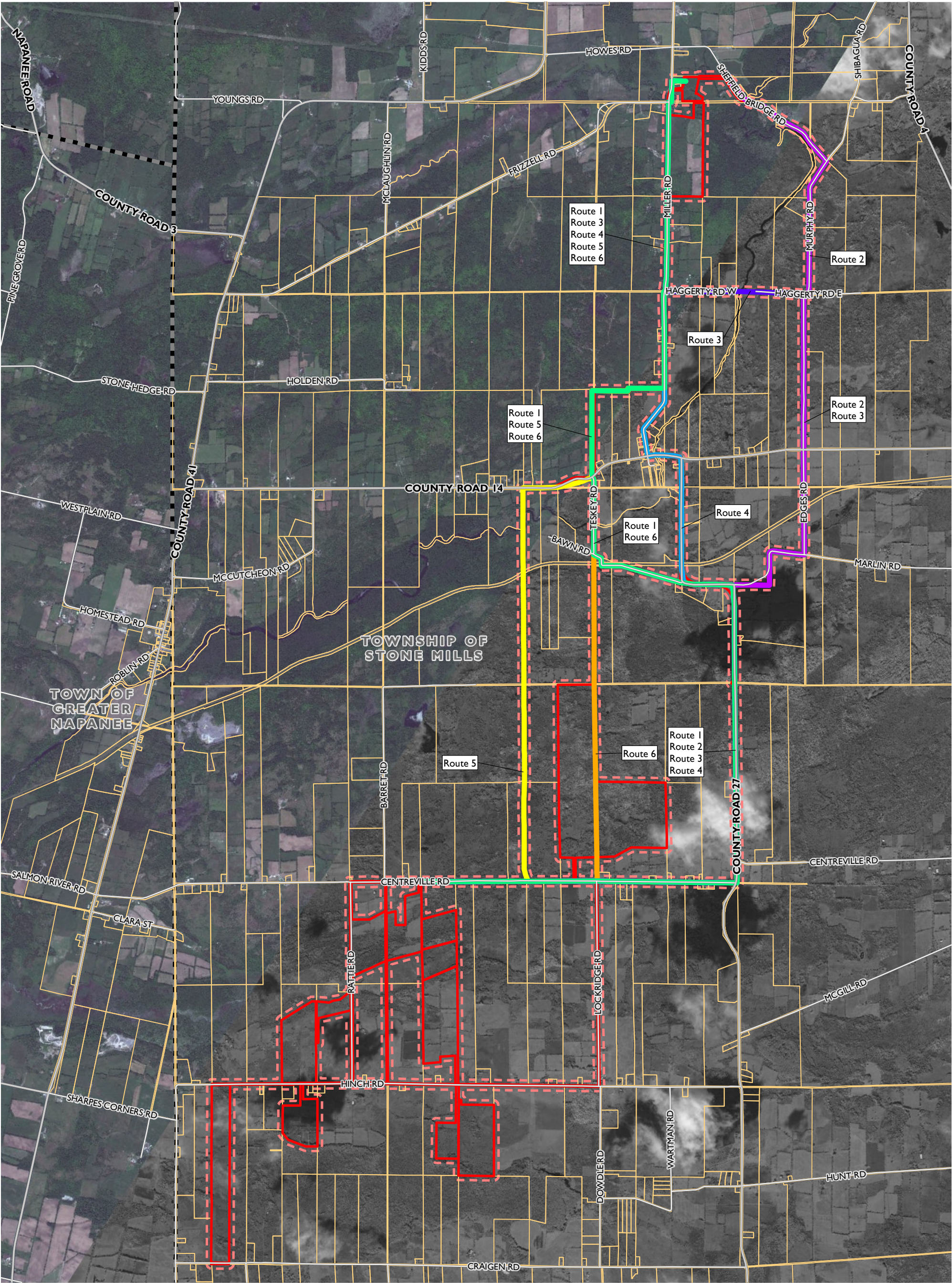
**Figure 2** also includes the 50 m prescribed setback for solar facilities. This area was required to be assessed for natural features as per *Ontario Regulation 359/09*. Setback development prohibitions for solar facilities are outlined in Part V, Sections 37 and 38 of *Ontario Regulation 359/09* (amended May 1, 2016).

For the purposes of this *NHA Records Review Report*, all potential options identified for the Project Location boundary have been included and considered. As the Project progresses and field investigations are concluded, the Project Location boundary will be refined for reasons that may include, but are not limited to, the avoidance of sensitive natural features determined to be present (e.g. wetlands) and/or to accommodate other regulatory requirements and/or stakeholders input.

As detailed design progresses and the Project Location boundary is further refined, each individual NHA report will include a Project Location boundary established on the constraints known at the time of report preparation. For the preparation of this *NHA Records Review Report*, the known constraints are based on the lands currently available for lease.

The Project Location boundary to be included in the *NHA Environmental Impact Study* will reflect, at a minimum, the final Project Location boundary provided to the MOECC as part of the REA application. For clarity, the final Project Location boundary will be the version provided as part of the site plan submitted within the *Design and Operations Report* to the MOECC. The final Project Location boundary will be equal to, or have less total area, than what is included in the NHA reporting.





**LOYALIST SOLAR PROJECT**  
LOYALIST SOLAR LP

**PROJECT LOCATION**  
FIGURE 2

- Potential Connection Line Routes**
- Route 1
  - Route 2
  - Route 3
  - Route 4
  - Route 5
  - Route 6
- Project Location Boundary (subject to refinement)
  - Parcel Boundary
  - 50 m Setback
  - Municipal Boundary
  - Railway



MAP CREATED BY: GM  
MAP CHECKED BY: JP  
MAP PROJECTION: NAD 1983 UTM Zone 18N



PROJECT: 163674 STATUS: DRAFT DATE: 10/24/2016



## 4.0 Methodology

A records review was completed, consistent with Section 25 of *Ontario Regulation 359/09*, for the Project Location (see **Figure 2**) using secondary source information.

For the purposes of the records review, Section 25 of *Ontario Regulation 359/09* states a NHA for a renewable energy facility includes a records review to search for and determine whether the Project Location is:

1. In or within 50 m of a provincial park or conservation reserve
2. In a natural feature, as defined to be:
  - i. a wetland (coastal wetland, northern wetland or southern wetland)
  - ii. a wildlife habitat
  - iii. a woodland
  - iv. an Area of Natural and Scientific Interest (ANSI, life and earth science)
3. Within 50 m of an ANSI (earth science)
4. Within 50 m of a natural feature that is not an ANSI (earth science)

**Table 1** outlines the secondary sources of information used to conduct the natural heritage features records review.

**Table 1: Records and Resources Searched and Analyzed During Records Review**

| Record Source   | Records Requested and/or Reviewed  |
|---|--|
| <b>Ministry of Natural Resources and Forestry</b>     |  |
| District Office: Peterborough                         | Main Contact: Julie Formsma, A/ Fish and Wildlife Technical Records and Todd Norris, Management Biologist.   |
| Date of Data Receipt:<br>May 18, 2016<br>May 27, 2016 | Records received from MNRF Peterborough District relating to provincial parks, conservation reserves, natural features, wildlife species, and Species at Risk. |
| Manuals/Guidelines                                    | Ecological Land Classification for Southern Ontario, First Approximation and its Application, 1998   |
|   | Natural Heritage Reference Manual, Second Edition, March 2010  |
|   | Natural Heritage Assessment Guide for Renewable Energy Projects, Second Edition, November 2012   |
|   | Ontario Wetland Evaluation System, Southern Manual, Third Edition, August 2014   |
|   | Significant Wildlife Habitat Technical Guide (2000)  |
|   | Significant Wildlife Habitat 6E Ecoregion Criterion Schedule, July 2015  |
|   | Significant Wildlife Habitat Mitigation Support Tool. Version 2014.  |
|   | Applicable PSW Evaluations and relevant reports on alvars in the general area (see references)   |

| Record Source   | Records Requested and/or Reviewed   |
|---|---|
| Land Information Ontario (“LIO”), data requested/accessed May 2016  | <ul style="list-style-type: none"> <li>Interactive Online Mapping Tool</li> <li>Warehouse Data (see <b>Appendix B</b> for data layers obtained)</li> </ul>  |
| Ontario Crown Land Use Policy Atlas, online data accessed May 2016  | <ul style="list-style-type: none"> <li>Crown Land areas</li> </ul>  |
| Natural Heritage Information Centre (“NHIC”)<br>18UQ4023; 18UQ4024; 18UQ4111;<br>18UQ4112; 18UQ4113; 18UQ4117;<br>18UQ4118; 18UQ4119; 18UQ4121;<br>18UQ4122; 18UQ4123; 18UQ4124;<br>18UQ4210; 18UQ4211; 18UQ4212;<br>18UQ4213; 18UQ4214; 18UQ4215;<br>18UQ4219; 18UQ4220; 18UQ4221;<br>18UQ4222; 18UQ4310; 18UQ4311;<br>18UQ4312; 18UQ4313; 18UQ4314;<br>18UQ4315; 18UQ4316; 18UQ4317;<br>18UQ4322; 18UQ4411; 18UQ4412;<br>18UQ4413; 18UQ4414; 18UQ4415;<br>18UQ4416; 18UQ4417; 18UQ4418;<br>18UQ4511; 18UQ4512; 18UQ4513;<br>18UQ4514; 18UQ4515; 18UQ4516;<br>18UQ4517; 18UQ4518 | <ul style="list-style-type: none"> <li>Make-a-map               <ul style="list-style-type: none"> <li>Rare species</li> <li>Rare plant communities</li> <li>Natural areas</li> <li>Invasive species</li> <li>Wildlife Concentration Areas</li> </ul> </li> <li>Ontario Odonata Atlas (2005)</li> <li>Ontario Herpetofaunal Summary (2000)</li> </ul> |
| MNR Species at Risk in Ontario (SARO) List, accessed June 2016  | Accessed to determine status of plant and wildlife species ( <i>Special Concern</i> )   |
| <b>Federal Government</b>   |   |
| Canadian Wildlife Service (“CWS”)/ Environment Canada   | Contact: Burke Korol, Environmental Assessment Coordinator, via email <ul style="list-style-type: none"> <li>Records relating to natural features and wildlife species</li> </ul>   |
| Date of Request: May 16, 2016   | Date of Data Receipt: N/A<br>Mr. Korol referred request to the <i>Species at Risk Act</i> and the <i>Migratory Birds Convention Act</i> . He noted that the remainder of items in this request do not fall under the mandate of the CWS and should be directed to MNR (e-mail communication May 16, 2016).  |
| Fisheries and Oceans Canada online mapping  | Distribution of Fish Species at Risk mapping for Quinte Conservation Authority (valid May 2015- May 2016)   |
| <b>Conservation Authority</b>   |   |
| Quinte Conservation Authority (“QCA”)   | Contact: Paul McCoy, Manager, Planning and Regulations  |
| Date of Meeting: June 9, 2016   | Date of Data Receipt: N/A<br>QCA did not have records relevant to the NHA.  |
| <b>Municipality</b>   |   |
| Upper-Tier Municipality: Lennox and Addington County (2016)   | <ul style="list-style-type: none"> <li>Official Plan and mapping Schedules reviewed</li> </ul>  |
| Lower-Tier Municipality: Township of Stone Mills (2014)   | <ul style="list-style-type: none"> <li>Official Plan and mapping Schedules reviewed</li> </ul>  |

| Record Source   | Records Requested and/or Reviewed   |
|---|---|
| <b>Planning Authorities and Local Boards</b>  |   |
| Municipal Planning Authority  | See above   |
| Local Planning Board  | Not applicable in Project Location  |
| Local Roads Board   | Not applicable in Project Location  |
| Local Services Board  | Not applicable in Project Location  |
| <b>Other Resources</b>  |   |
| Ontario Breeding Birds Atlas ("OBBA") - online data accessed May 2016   | Squares 18UQ41, 18UQ42  |
| Christmas Bird Count ("CBC") – online data accessed May 2016  | No Count Circles within 0.5 km of the Project Location.   |
| Important Bird Areas ("IBA") – online data accessed May 2016  | Project Location within Napanee Limestone Plain IBA   |
| Ontario Nature Reptile and Amphibian Atlas – online data accessed May 2016  | Species data included does not include species listed as Threatened or Endangered under the Ontario <i>Endangered Species Act, 2007</i> .   |
| Atlas of the Mammals of Ontario   | Dobbyn 1994. Published by Federation of Ontario Naturalists   |
| Great Lakes Conservation Blueprint for Terrestrial Biodiversity. Volume 2: Ecodistrict Summaries<br>Madoc Ecodistrict 6E-9 pp.103-111 | Henson and Brodribb 2005. Produced by the Nature Conservancy of Canada <ul style="list-style-type: none"> <li>Summary of statistics and land use relating to natural features and wildlife species in each Ecodistrict</li> </ul> |
| Ontario Butterfly Atlas- online data accessed May 2016  | Accessed to determine potential for Lepidoptera species to occur within the Project Location  |
| Species at Risk Public Registry, accessed May 2016  | Accessed to determine status of plant and wildlife species as a Species of Conservation Concern   |
| COSEWIC, accessed May 2016  | Accessed to determine status of plant and wildlife species as a Species of Conservation Concern   |
| Community Groups  | Information related to natural features and species observations provided by the Lennox Addington Stewardship Council, Friends of the Salmon River and Wildlife Preservation Canada   |
| Landowner Observations  | Species observations provided by landowners participating in the Project, and other local residents, have been included in this <i>NHA Records Review Report</i> where applicable (see <b>Appendix C</b> ).                       |
| <b>Provincial Plan Area Records</b>   |   |
| Niagara Escarpment Commission   | Project Location does not fall within the Niagara Escarpment Plan Area  |
| Oak Ridges Conservation Plan Area   | Project Location does not fall within the Oak Ridges Conservation Plan Area   |
| Greenbelt Plan Area   | Project Location does not fall within the Greenbelt Plan Area   |
| Lake Simcoe Protection Plan   | Project Location does not fall within the Lake Simcoe Protection Plan Area  |

## 5.0 Results

The Project Location falls within Ecodistrict 6E-9 (Madoc) and was summarized as part of the Great Lakes Conservation Blueprint for Terrestrial Biodiversity (Henson and Brodribb, 2005). The majority of land in this Ecodistrict is privately owned and approximately 69% of this land exists as natural cover, primarily forest. Of this natural cover, till moraine forest complexes comprise 27%, with limestone plain forest complexes covering an additional 27%, followed by swamp at 19%.

### 5.1 Natural Features

Based on our review and analysis of the records and resources outlined in **Table 1**, and in accordance with *Ontario Regulation 359/09*, the presence of natural features are documented below and determinations were made whether the Project Location is in or within the prescribed setback area (i.e., 50 m) for a natural feature (as defined by Section 25 of *Ontario Regulation 359/09*). Natural features identified are outlined on **Figure 3**.

#### 5.1.1 Provincial Parks and Conservation Reserves

A search and analysis of the records and resources outlined in **Table 1** did not identify any provincial parks or conservation reserves in the Project Location or within the surrounding 50 m.

#### 5.1.2 ANSI, Life Science

A search and analysis of the records and resources outlined in **Table 1** did not identify any Life Science ANSIs in the Project Location or within 50 m of the Project Location.

#### 5.1.3 ANSI, Earth Science

A search and analysis of the records and resources outlined in **Table 1** did not identify any Earth Science ANSIs in the Project Location or within 50 m of the Project Location.

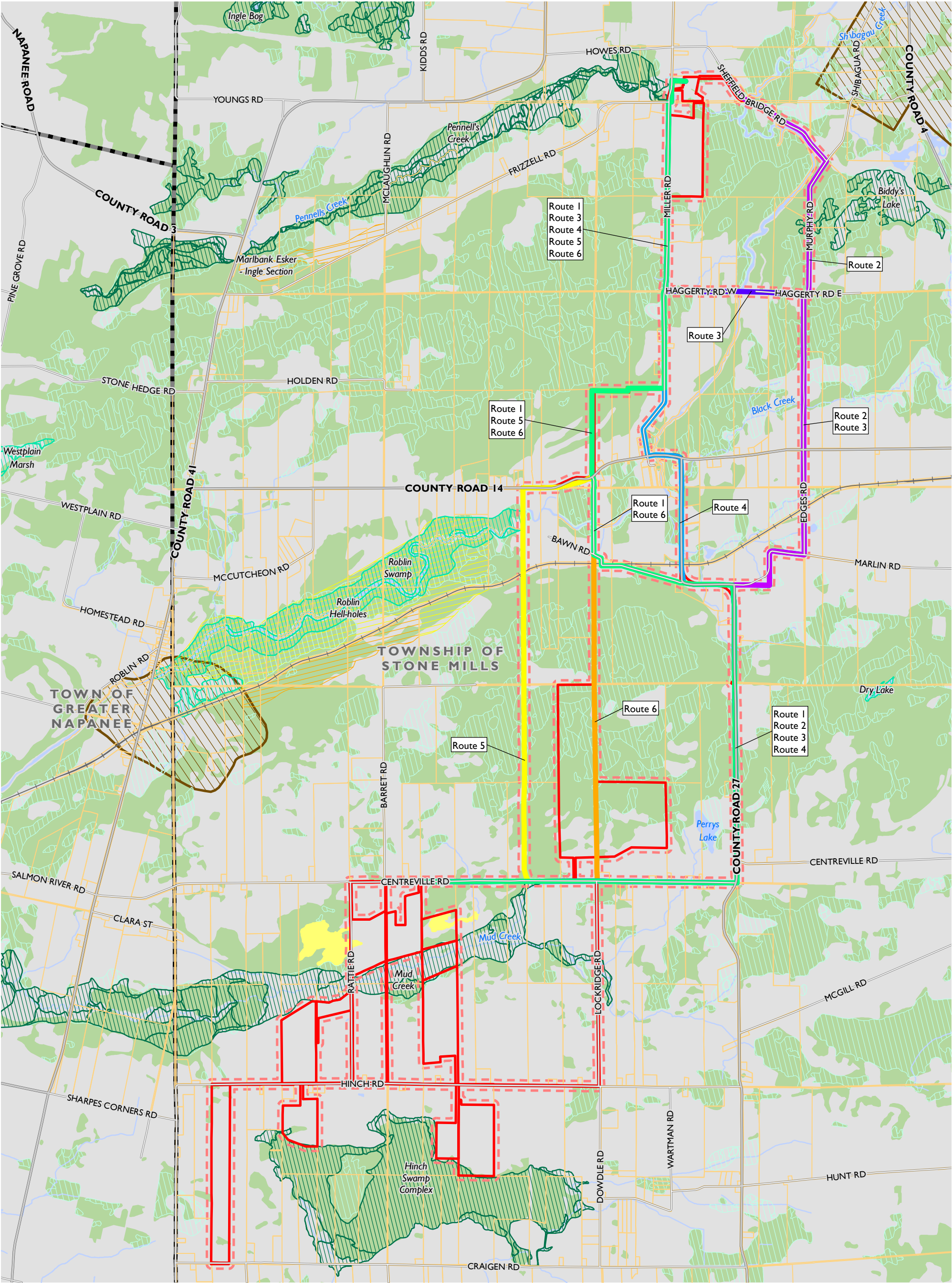
#### 5.1.4 Wetlands

A search and analysis of the records and resources outlined in **Table 1** identified two provincially significant wetlands within the Project Location: Mud Creek; and, Hinch Swamp. The boundaries of the wetland communities will be verified during the NHA site investigation field work and the Project Location refined where/if necessary to avoid development within the provincially significant wetlands.

Two additional provincially significant wetlands (Pennell's Creek and Biddy's Lake) and one evaluated non-provincially significant wetland (Roblin Swamp) were identified within the 50 m setback. Several additional unevaluated southern wetlands, as defined by *Ontario Regulation 359/09*, are mapped within 50 m of the Project Location (**Figure 3**).

In **Appendix A, Figure A1**, unique identifiers have been applied to each of the mapped unevaluated southern wetlands. These identifiers will be used when referencing the specific natural feature during the remainder of the NHA. Only those mapped within the Project Location boundary or within 50 m are identified in **Appendix A, Table A1**. In the general landscape, several other unevaluated wetlands have been mapped. These are identified in **Appendix A, Figure A1** until the site investigation field studies confirm they are greater than 50 m from the Project Location.





LOYALIST SOLAR PROJECT

LOYALIST SOLAR LP

NHA RECORDS REVIEW

FIGURE 3

Potential Connection Line Routes

Route 1

Route 2

Route 3

Route 4

Route 5

Route 6

Railway

Project Location Boundary (subject to refinement)

Parcel Boundary

50 m Setback

Municipal Boundary

Provincially Significant Wetland

Evaluated Wetland

Unevaluated Wetland

ANSI, Earth Science

ANSI, Life Science

Deer Wintering Area (Stratum 2)

Alvar Vegetation Community

Mapped Watercourse

Mapped Water Body

Woodland

MAP CREATED BY: GM

MAP CHECKED BY: JP

DATA PROVIDED BY: MNRF

MAP PROJECTION: NAD 1983 UTM Zone 18N

1:40,000

0 0.5 1 2 km

N

E

S

W

PROJECT: 163674

STATUS: DRAFT

DATE: 10/24/2016

FILE LOCATION: I:\GIS\163674 - Loyalist Solar\mxd\Records Review\Figure 3 Records Review.mxd

### 5.1.5 Woodlands

A search and analysis of the records and resources outlined in **Table 1** identified several woodlands, as defined by *Ontario Regulation 359/09*, mapped both within the Project Location and within the 50 m setback area (see **Figure 3**). In **Appendix A, Figure A2**, unique identifiers have been applied to mapped woodlands. These identifiers will be used when referencing the specific natural feature during the remainder of the NHA. Only those mapped within the Project Location boundary or within 50 m are identified in **Appendix A, Table A2**. In the general landscape, several other woodlands have been mapped. These are identified in **Appendix A, Figure A2** until the site investigation field studies confirm they are greater than 50 m from the Project Location.

### 5.1.6 Wildlife Habitat

A review of the records and resources outlined in **Table 1** was undertaken to identify if wildlife habitat applicable to Ecoregion 6E had been previously identified in the Project Location and/or surrounding 50 m. The types of wildlife habitat applicable to the NHA fall under four categories (MNRF 2000, MNRF 2015):

- Seasonal Concentration Areas of Animals
- Rare Vegetation Communities or Specialized Habitat for Wildlife
- Habitat for Species of Conservation Concern
- Animal Movement Corridors

Within these broad categories, the MNRF has defined the types of wildlife habitat that are required to be considered in Ecoregion 6E in the Significant Wildlife Habitat (SWH) Ecoregion 6E Criterion Schedule (2015). Based on the available records (**Table 1**), Rare Vegetation Communities were identified within the Project Location and surrounding 50 m (**Table 2**). Potential candidate significant wildlife habitat carried forward will be outlined and reviewed during the site investigation and included in the NHA Site Investigation Report. In the *NHA Site Investigation Report*, candidate significant wildlife habitat will be identified based on the presence of specific habitat attributes, as defined by the MNRF in the Ecoregion 6E in the Significant Wildlife Habitat (SWH) Ecoregion 6E Criterion Schedule (2015). Following this, candidate significant wildlife habitat will be evaluated in the *NHA Evaluation of Significance Report* to determine which habitats are significant and will be carried forward to the *NHA Environmental Impact Study*.

To assist with the identification of Habitat for Species of Conservation Concern, a search and analysis of the records and resources outlined in **Table 1** was undertaken to determine which Species of Conservation Concern have been previously identified in the general area of the Project Location. These species are further discussed in **Section 5.2** and **Section 5.3** and summarized in detail with respect to their conservation status in **Appendix C1**. No known habitat of Species of Conservation Concern has been previously identified within the Project Location or within the surrounding 50 m.



**Table 2: Summary of Wildlife Habitat Identified within the Project Location and 50 m Setback****Wildlife Habitat Type and Applicability to Project Location****Seasonal Concentration Areas****Waterfowl Stopover and Staging Areas (Terrestrial)**

No known features identified within the Project Location or adjacent lands within 50 m.

**Waterfowl Stopover and Staging Areas (Aquatic)**

No known features identified within the Project Location or adjacent lands within 50 m.

**Shorebird Migratory Stopover Areas**

No known features identified within the Project Location or adjacent lands within 50 m.

**Raptor Wintering Area**

No known features identified within the Project Location or adjacent lands within 50 m.

**Bat Hibernacula**

No known features identified within the Project Location or adjacent lands within 50 m.

**Bat Maternity Colonies**

No known features identified within the Project Location or adjacent lands within 50 m.

**Bat Migratory Stopover Areas**

There are no MNRF identified Bat Migratory Stopover Areas within the Project Location or adjacent lands within 50 m.

**Turtle Wintering Areas**

No known features identified within the Project Location or adjacent lands within 50 m.

**Snake Hibernaculum**

No known features identified within the Project Location or adjacent lands within 50 m.

**Colonially- Nesting Bird Breeding Habitat (Bank and Cliff)**

No known features identified within the Project Location or adjacent lands within 50 m.

**Colonially- Nesting Bird Breeding Habitat (Tree/ Shrubs)**

No known features identified within the Project Location or adjacent lands within 50 m.

**Colonially- Nesting Bird Breeding Habitat (Ground)**

No known features identified within the Project Location or adjacent lands within 50 m.

**Migratory Butterfly Stopover Areas**

The Project Location is not located within 5 km of Lake Ontario.

**Landbird Migratory Stopover Areas**

The Project Location is not located within 5 km of Lake Ontario.

### Wildlife Habitat Type and Applicability to Project Location

#### Deer Yarding Areas

There are no Deer Yarding Areas (delineated by the MNRF) within the Project Location or adjacent lands within 50m.

#### Deer Winter Congregation Areas

No known features identified within the Project Location or adjacent lands within 50 m.

#### Rare Vegetation Communities

##### Cliffs and Talus Slopes

No known features identified within the Project Location or adjacent lands within 50 m.

##### Sand Barren

No known features identified within the Project Location or adjacent lands within 50 m.

##### Alvar

Two alvar communities were identified within the Project Location (see **Figure 3**).

##### Old Growth Forest

No known features identified within the Project Location or adjacent lands within 50 m.

##### Savannah

No known features identified within the Project Location or adjacent lands within 50 m.

##### Tallgrass Prairie

No known features identified within the Project Location or adjacent lands within 50 m.

##### Other Rare Vegetation Communities

No known features identified within the Project Location or adjacent lands within 50 m.

#### Specialized Wildlife Habitat

##### Waterfowl Nesting Area

No known features identified within the Project Location or adjacent lands within 50 m.

##### Bald Eagle and Osprey Nesting, Foraging and Perching Habitat

No known features identified within the Project Location or adjacent lands within 50 m.

##### Woodland Raptor Nesting Habitat

No known features identified within the Project Location or adjacent lands within 50 m.

##### Turtle Nesting Areas

No known features identified within the Project Location or adjacent lands within 50 m.

##### Seeps and Springs

No known features identified within the Project Location or adjacent lands within 50 m.

### Wildlife Habitat Type and Applicability to Project Location

#### Amphibian Breeding Habitat (Woodland)

No known features identified within the Project Location or adjacent lands within 50 m.

#### Amphibian Breeding Habitat (Wetlands)

No known features identified within the Project Location or adjacent lands within 50 m.

#### Woodland Area- Sensitive Bird Breeding Habitat

No known features identified within the Project Location or adjacent lands within 50 m.

### Habitat of Species of Conservation Concern

#### Marsh Bird Breeding Habitat

No known features identified within the Project Location or adjacent lands within 50 m.

#### Open Country Breeding Bird Habitat

No known features identified within the Project Location or adjacent lands within 50 m.

#### Shrub/ Early Successional Bird Breeding Habitat

No known features identified within the Project Location or adjacent lands within 50 m.

#### Terrestrial Crayfish

No known features identified within the Project Location or adjacent lands within 50 m.

#### Special Concern and Rare Wildlife Species

No known features identified within the Project Location or adjacent lands within 50 m;  
Species with the potential to occur in the general area are identified in **Appendix C1**.

### Animal Movement Corridors

#### Amphibian Movement Corridors

No known features identified within the Project Location or adjacent lands within 50 m.

#### Deer Movement Corridors

No known features identified within the Project Location or adjacent lands within 50 m.

## 5.2 Supplementary Wildlife Habitat Information

The information presented in this section was collected to further inform the identification of wildlife habitat in the general area of the Project Location. Please note, as stated in **Section 5.5** below, Species at Risk protected as *Endangered* or *Threatened* under the Ontario *Endangered Species Act, 2007* are not included.

### 5.2.1 Vascular Plant and Bryophyte Diversity

Using readily available secondary source information, as outlined in **Table 1**, six plant Species of Conservation Concern have been determined as potentially occurring in or adjacent to the Project Location. These species will be further investigated during the site investigation to determine if habitat occurs. Records were requested from the MNRF and CWS. While species records were provided by the MNRF; no information has been provided from CWS regarding records or data for vascular plants or bryophytes in the general area of the Project Location.

CWS has previously stated they do not have records that can be accessed for use by renewable energy Projects in Ontario (D. Fells, personal communication). Species are outlined in **Appendix C, Table C1**.

### 5.2.2 Wildlife Species Diversity

Using the readily available secondary source databases and wildlife atlases outlined in **Table 1**, various wildlife species have the potential to occur in or adjacent to the Project Location. These species are discussed below and in **Appendix C**. Each species has been assessed according to occurrence records as well as their provincial and federal conservation status.

### 5.2.3 Birds

After reviewing records in the OBBA (Cadman *et al.*, 2005; OBBA Mapping Squares 18UQ41 and 18UQ42; see **Appendix A2**), 120 avian species have been identified in the general area of the Project Location (i.e., 200 square km). A search of the additional records including MNRF's NHIC database, information obtained from the public, and the Important Bird Area report for site ON152 revealed occurrence records for seven additional avian species. These birds depend on a wide range of habitats from agricultural areas to woodlands to wetlands. The majority of the bird species that have the potential to occur in the general area of the Project Location are considered *Secure* (SRank of S5) or *Apparently Secure* in Ontario (SRank of S4). Of the 127 species found in the area of the Project Location, seven are Species of Conservation Concern. These species will be further investigated during the site investigation to determine if habitat occurs. A complete list of species is available in **Appendix C, Table C2**.

#### 5.2.4 Mammals

After reviewing records in the Atlas of Mammals of Ontario (Dobbyn, 1994), 41 mammalian species have been identified in the general area of the Project Location. The mammals identified with potential to occur in the general area of the Project Location are considered *Secure* (SRank of S5). Of the 41 species found in the area of the Project Location, no Species of Conservation Concern were identified. A complete list of species is available in **Appendix C, Table C2**.

#### 5.2.5 Herpetozoa

The Ontario Herpetofaunal Atlas (Oldham and Weller, 2000) and the Ontario Reptile and Amphibian Atlas (Ontario Nature, 2010) were used to determine the potential for various herpetozoa species to occur within or adjacent to the Project Location. A total of 19 herpetozoa species were identified with occurrence records in the general area of the Project Location. Of the 19 species found in the area of the Project Location, five are Species of Conservation Concern. These species will be further investigated during the site investigation to determine if habitat occurs. A complete list of species is available in **Appendix C, Table C2**.

#### 5.2.6 Invertebrates

The Ontario Butterfly Atlas Online (2013) was reviewed to determine the potential for butterflies and moths to occur in the general area of the Project Location. Of the 40 species belonging to the Lepidoptera taxon identified, most are considered *Secure* (SRank of S5) or *Apparently Secure* in Ontario (SRank of S4) and two are Species of Conservation Concern. These species will be further investigated during the site investigation to determine if habitat occurs.

The Ontario Odonata Atlas (2005) was reviewed to determine the potential for dragonflies and damselflies to occur in the general area of the Project Location. A total of 18 species from the Odonata family had occurrence records in the general vicinity of the Project Location. The Odonata species that have the potential to occur in the general area of the Project Location are considered *Secure* (SRank of S5) or *Apparently Secure* in Ontario (SRank of S4). Of the 18 species found in the area of the Project Location, none are Species of Conservation Concern.

In addition to the butterflies, dragonflies and damselflies listed above, there were NHIC records for three species of molluscs. Of the three, none have been observed in more than 70 years (NHIC records from 1943). As such, these species will not be considered further.

A complete list of species is available in **Appendix C, Table C2**.

### 5.3 Provincial Plan Areas

Under *Ontario Regulation 359/09*, if any part of the Project Location falls within a provincial plan area, the Project Location may be subject to different criterion to evaluate the applicable natural features. In addition, should development occur within the REA setback area of a natural feature, it may be subject to a different set of prohibitions beyond those prescribed under *Ontario Regulation 359/09*. **Table 3** outlines the provincial plan areas that should be considered when planning a renewable energy Project and identifies which, if any, are applicable to the Project Location.

**Table 3: Summary of Provincial Plan Areas and Applicability to the Project Location**

| Provincial Plan Area                      | Applicability to Project |
|---|--------------------------|
| Oak Ridges Moraine Conservation Plan Area | None                     |
| Niagara Escarpment Plan Area              | None                     |
| Greenbelt - Natural Heritage System       | None                     |
| Greenbelt – Protected Countryside         | None                     |
| Lake Simcoe Protection Plan               | None                     |

#### 5.4 Species at Risk

Species at Risk listed under the federal *Species at Risk Act* and provincial *Endangered Species Act, 2007*, with the potential to interact with the Project Location and/or adjacent lands, are being considered in consultation with the appropriate agency. Reporting related to the protection of species listed as *Endangered* or *Threatened* on the Species at Risk in Ontario list (*Ontario Regulation 230/08*) is being provided to the appropriate agency under separate cover. This reporting format meets the NHA requirements, as set out in *Ontario Regulation 359/09*, and is consistent with the direction provided by the MNRF.

#### 5.5 Other Required Approvals and Permitting

In addition to the natural features included in this records review, the MNRF is responsible for administering approvals and permits related to the following resources and land uses:

- Mineral Aggregate Resources
- Harvesting Crown-owned Forest Resources
- Natural Hazard Lands (unless designated to a local Conservation Authority)
- Furbearing Mammals
- Fish and Fish Habitat
- Species at Risk
- Areas under Forest Resource License or Sustainable Forest License
- Petroleum Resources
- Far North Applicability
- Forest Resource Processing Facility Licensing
- Wildfire Prevention and Preparedness Requirements

The applicability of these resources and land uses within the Project Location and adjacent areas will be outlined in a separate report that will be submitted to the MNRF for parallel consideration with this NHA. This review is not included as part of the REA. As outlined in **Section 5.4**, Species at Risk under the provincial *Endangered Species Act, 2007* will be submitted to the MNRF under separate cover.

## 6.0 Conclusions

This *NHA Records Review Report* was completed in partial fulfillment of the regulatory requirements for the REA process. Additional details regarding the natural features, their significance, potential impacts and mitigation measures required to protect these features will be provided in separate reports as required, including the *NHA Site Investigation*, *NHA Evaluation of Significance* and *NHA Environmental Impact Study Reports*, where applicable. These reports will be submitted to the MNRF for review and comment, as required in *Ontario Regulation 359/09*.

The determinations made in this records review will form the baseline knowledge for the Project Location. Field studies, in addition to consultation with the MNRF and other relevant stakeholders, will be used to determine the accuracy and applicability of this records review during the site investigation. It is anticipated that the Project Location will be refined following the site investigation field studies. **Table 4** summarizes the determinations made during this records review. All applicable natural features within the Project Location and surrounding 50 m are outlined on **Figure 3**.

**Table 4: Summary of the Natural Heritage Assessment Records Review**

| Natural Feature ID   | Source of Information | Evaluation Status            | Distance Relative to Project Location  | Carried Forward to Site Investigation? Yes ("Y") or No ("N") |
|--|-----------------------|------------------------------|--|--|
| <b>Provincial Parks and Conservation Reserves</b>  |                       |                              |  |  |
| No known features identified within the Project Location or adjacent lands within 120 m. |                       |                              |  | N  |
| <b>ANSI, Life Science</b>  |                       |                              |  |  |
| No known features identified within the Project Location or adjacent lands within 50 m.  |                       |                              |  | N  |
| <b>ANSI, Earth Science</b>   |                       |                              |  |  |
| No known features identified within the Project Location or adjacent lands within 50 m.  |                       |                              |  | N  |
| <b>Wetlands</b>  |                       |                              |  |  |
| Provincially Significant Wetlands  | LIO Mapping           | Provincially Significant     | Two within the Project Location (Mud Creek and Hinch Swamp); two within 50 m of the Project Location (Pennell's Creek and Biddy's Lake). | Y  |
| Evaluated Southern Wetlands  | LIO Mapping           | Not Provincially Significant | One within 50 m of the Project Location (Roblin Swamp).  | Y  |
| Unevaluated Southern Wetlands  | LIO Mapping           | Unevaluated                  | Several within the Project Location and within 50 m of the Project Location.   | Y  |

| Natural Feature ID  | Source of Information | Evaluation Status | Distance Relative to Project Location  | Carried Forward to Site Investigation? Yes ("Y") or No ("N") |
|---|-----------------------|-------------------|--|--|
| <b>Woodlands</b>  |                       |                   |  |  |
| Unevaluated Southern Woodlands  | LIO Mapping           | Unevaluated       | Several within the Project Location and within 50 m of the Project Location. | Y  |
| <b>Wildlife Habitat</b>   |                       |                   |  |  |
| <b>Seasonal Concentration Areas</b>   |                       |                   |  |  |
| <b>Waterfowl Stopover and Staging Areas (Terrestrial)</b>                               |                       |                   |  |  |
| No known features identified within the Project Location or adjacent lands within 50 m. |                       |                   |  | Y  |
| <b>Waterfowl Stopover and Staging Areas (Aquatic)</b>                                   |                       |                   |  |  |
| No known features identified within the Project Location or adjacent lands within 50 m. |                       |                   |  | Y  |
| <b>Shorebird Migratory Stopover Areas</b>   |                       |                   |  |  |
| No known features identified within the Project Location or adjacent lands within 50 m. |                       |                   |  | Y  |
| <b>Raptor Wintering Area</b>  |                       |                   |  |  |
| No known features identified within the Project Location or adjacent lands within 50 m. |                       |                   |  | Y  |
| <b>Bat Hibernacula</b>  |                       |                   |  |  |
| No known features identified within the Project Location or adjacent lands within 50 m. |                       |                   |  | Y  |
| <b>Bat Maternity Colonies</b>   |                       |                   |  |  |
| No known features identified within the Project Location or adjacent lands within 50 m. |                       |                   |  | Y  |
| <b>Bat Migratory Stopover Areas</b>   |                       |                   |  |  |
| There are no MNRF identified Bat Migratory Stopover Areas within 50 m.                  |                       |                   |  | N  |
| <b>Turtle Wintering Areas</b>   |                       |                   |  |  |
| No known features identified within the Project Location or adjacent lands within 50 m. |                       |                   |  | Y  |
| <b>Snake Hibernaculum</b>   |                       |                   |  |  |
| No known features identified within the Project Location or adjacent lands within 50 m. |                       |                   |  | Y  |
| <b>Colonially- Nesting Bird Breeding Habitat (Bank and Cliff)</b>                       |                       |                   |  |  |
| No known features identified within the Project Location or adjacent lands within 50 m. |                       |                   |  | Y  |
| <b>Colonially- Nesting Bird Breeding Habitat (Tree/ Shrubs)</b>                         |                       |                   |  |  |
| No known features identified within the Project Location or adjacent lands within 50 m. |                       |                   |  | Y  |
| <b>Colonially- Nesting Bird Breeding Habitat (Ground)</b>                               |                       |                   |  |  |
| No known features identified within the Project Location or adjacent lands within 50 m. |                       |                   |  | Y  |
| <b>Migratory Butterfly Stopover Areas</b>   |                       |                   |  |  |
| The Project Location is not located within 5 km of Lake Ontario.                        |                       |                   |  | N  |



| Natural Feature ID  | Source of Information | Evaluation Status | Distance Relative to Project Location                                    | Carried Forward to Site Investigation? Yes ("Y") or No ("N") |
|---|-----------------------|-------------------|--|--|
| <b>Landbird Migratory Stopover Areas</b>  |                       |                   |  |  |
| The Project Location is not located within 5 km of Lake Ontario.  |                       |                   |  | N  |
| <b>Deer Yarding Areas</b>   |                       |                   |  |  |
| There are no Deer Yarding Areas (delineated by the MNRF) within the Project Location or adjacent lands within 50 m. |                       |                   |  | N  |
| <b>Deer Winter Congregation Areas</b>   |                       |                   |  |  |
| No known features identified within the Project Location or adjacent lands within 50 m.                             |                       |                   |  | Y  |
| <b>Rare Vegetation Communities</b>  |                       |                   |  |  |
| <b>Cliffs and Talus Slopes</b>  |                       |                   |  |  |
| No known features identified within the Project Location or adjacent lands within 50 m.                             |                       |                   |  | Y  |
| <b>Sand Barren</b>  |                       |                   |  |  |
| No known features identified within the Project Location or adjacent lands within 50 m.                             |                       |                   |  | Y  |
| <b>Alvar</b>  |                       |                   |  |  |
| Candidate Alvars  | MNRF 2006             | Unevaluated       | Two within the Project Location and within 50 m of the Project Location. | Y  |
| <b>Old Growth Forest</b>  |                       |                   |  |  |
| No known features identified within the Project Location or adjacent lands within 50 m.                             |                       |                   |  | Y  |
| <b>Savannah</b>   |                       |                   |  |  |
| No known features identified within the Project Location or adjacent lands within 50 m.                             |                       |                   |  | Y  |
| <b>Tallgrass Prairie</b>  |                       |                   |  |  |
| No known features identified within the Project Location or adjacent lands within 50 m.                             |                       |                   |  | Y  |
| <b>Other Rare Vegetation Communities</b>  |                       |                   |  |  |
| No known features identified within the Project Location or adjacent lands within 50 m.                             |                       |                   |  | Y  |
| <b>Specialised Wildlife Habitat</b>   |                       |                   |  |  |
| <b>Waterfowl Nesting Area</b>   |                       |                   |  |  |
| No known features identified within the Project Location or adjacent lands within 50 m.                             |                       |                   |  | Y  |
| <b>Bald Eagle and Osprey Nesting, Foraging and Perching Habitat</b>   |                       |                   |  |  |
| No known features identified within the Project Location or adjacent lands within 50 m.                             |                       |                   |  | Y  |
| <b>Woodland Raptor Nesting Habitat</b>  |                       |                   |  |  |
| No known features identified within the Project Location or adjacent lands within 50 m.                             |                       |                   |  | Y  |

| Natural Feature ID   | Source of Information | Evaluation Status | Distance Relative to Project Location | Carried Forward to Site Investigation? Yes ("Y") or No ("N") |
|--|-----------------------|-------------------|---------------------------------------|--|
| <b>Turtle Nesting Areas</b>  |                       |                   |                                       |  |
| No known features identified within the Project Location or adjacent lands within 50 m.  |                       |                   |                                       | Y  |
| <b>Seeps and Springs</b>   |                       |                   |                                       |  |
| No known features identified within the Project Location or adjacent lands within 50 m.  |                       |                   |                                       | Y  |
| <b>Amphibian Breeding Habitat (Woodland)</b>   |                       |                   |                                       |  |
| No known features identified within the Project Location or adjacent lands within 50 m.  |                       |                   |                                       | Y  |
| <b>Amphibian Breeding Habitat (Wetlands)</b>   |                       |                   |                                       |  |
| No known features identified within the Project Location or adjacent lands within 50 m.  |                       |                   |                                       | Y  |
| <b>Woodland Area- Sensitive Bird Breeding Habitat</b>  |                       |                   |                                       |  |
| No known features identified within the Project Location or adjacent lands within 50 m.  |                       |                   |                                       | Y  |
| <b>Habitat of Species of Conservation Concern</b>  |                       |                   |                                       |  |
| <b>Marsh Bird Breeding Habitat</b>   |                       |                   |                                       |  |
| No known features identified within the Project Location or adjacent lands within 50 m.  |                       |                   |                                       | Y  |
| <b>Open Country Breeding Bird Habitat</b>  |                       |                   |                                       |  |
| No known features identified within the Project Location or adjacent lands within 50 m.  |                       |                   |                                       | Y  |
| <b>Shrub/ Early Successional Bird Breeding Habitat</b>   |                       |                   |                                       |  |
| No known features identified within the Project Location or adjacent lands within 50 m.  |                       |                   |                                       | Y  |
| <b>Terrestrial Crayfish</b>  |                       |                   |                                       |  |
| No known features identified within the Project Location or adjacent lands within 50 m.  |                       |                   |                                       | Y  |
| <b>Special Concern and Rare Wildlife Species</b>   |                       |                   |                                       |  |
| No known features identified within the Project Location or adjacent lands within 50 m; Species with the potential to occur in the general area are identified in <b>Appendix C1</b> . |                       |                   |                                       | Y  |
| <b>Animal Movement Corridors</b>   |                       |                   |                                       |  |
| <b>Amphibian Movement Corridors</b>  |                       |                   |                                       |  |
| No known features identified within the Project Location or adjacent lands within 50 m.  |                       |                   |                                       | Y  |
| <b>Deer Movement Corridors</b>   |                       |                   |                                       |  |
| No known features identified within the Project Location or adjacent lands within 50 m.  |                       |                   |                                       | Y  |
| <b>Provincial Plan Areas</b>   |                       |                   |                                       |  |
| None applicable to the Project Location or setback areas.  |                       |                   |                                       | N  |

## 7.0

## References

BirdLife International. Important Bird Areas.

<http://www.bsc-eoc.org/iba/site.jsp?siteID=ON152&lang=EN>. Accessed June 2016.

Bird Studies Canada. 2010. Christmas Bird Count. <http://netapp.audubon.org/CBCObservation/CurrentYear/ResultsByCount.aspx>. Accessed June 2016.

Cadman, M., Sutherland, D., Beck, G., Lepage, D., Couturier, A. 2005. Atlas of the Breeding Birds of Ontario: Second Atlas (2001-2005). Bird Studies Canada, Environment Canada, Ontario Field Ornithologists, Ontario Ministry of Natural Resources, and Ontario Nature. <http://www.birdsontario.org/atlas/index.jsp>. Accessed June 2016.

Dobbyn, J. 1994. Atlas of the Mammals of Ontario. Federation of Ontario Naturalists, Don Mills. Environment Canada. Species at Risk Public Registry. <http://www.sararegistry.gc.ca>. Accessed June 2016.

Fisheries and Oceans Canada. May 2015. Distribution of Fish and Mussel Species at Risk. Quinte Conservation Authority. Valid May 2015 to May 2016.

Henson, B.L., and Brodribb, K.E. 2005. Great Lakes Conservation Blueprint for Terrestrial Biodiversity: Volume 2: Ecodistrict Summaries. 344pp.

Lennox and Addington County. Official Plan and Schedules. 2016.

Oldham, M.J. and W.F. Weller. 2000. Ontario Herpetofaunal Atlas. Natural Heritage Information Centre, Ontario Ministry of Natural Resources.

Ontario Breeding Bird Atlas. 2001. Guide for Participants. Atlas Management Board, Federation of Ontario Naturalists, Don Mills.

Ontario Ministry of Natural Resources and Forestry. 2006. A Multi-species Recovery Strategy for the Alvar Ecosystems of the Napanee- Prince Edward Plain in southeastern Ontario. 101 pp.

Ontario Ministry of Natural Resources and Forestry. Crown Land Use Policy Atlas. <http://crownlanduseatlas.mnr.gov.on.ca/clupa.html>. Accessed June 2016.

Ontario Ministry of Natural Resources and Forestry. Land Information Ontario. <http://www.gisoeapp.lrc.gov.on.ca/web/MNR/NHLUPS/NaturalHeritage/Viewer/Viewer.html>. Accessed June 2016.

Ontario Ministry of Natural Resources and Forestry. 1985. Mud Creek Wetland Data Record. 29 pp.

Ontario Ministry of Natural Resources and Forestry. 2012. Hinch Swamp Complex Wetland Data Record. MSExcel File.

Ontario Ministry of Natural Resources and Forestry. March 2010. Natural Heritage Reference Manual for Natural Heritage Policies of the Provincial Policy Statement, 2005. Second Edition. Toronto: Queen's Printer for Ontario. 248pp.

Ontario Ministry of Natural Resources and Forestry. Natural Heritage Information Centre Database. <http://nhic.mnr.gov.on.ca/>. Accessed June 2016.

Ontario Ministry of Natural Resources and Forestry. 2014. Ontario Wetland Evaluation System Southern Manual. 3<sup>rd</sup> Edition.

Ontario Ministry of Natural Resources and Forestry. The Species at Risk in Ontario (SARO) List. [http://www.e-laws.gov.on.ca/html/regs/english/elaws\\_regs\\_080230\\_e.htm](http://www.e-laws.gov.on.ca/html/regs/english/elaws_regs_080230_e.htm). Accessed June 2016.

Ontario Ministry of Natural Resources and Forestry. 1986. Roblin Hell Holes Environmental Data Card.

Ontario Ministry of Natural Resources and Forestry. 1985. Roblin Swamp Wetland Data Record. 29 pp.

Ontario Ministry of Natural Resources and Forestry. 2000. Significant Wildlife Habitat Technical Guide. 151pp.

Ontario Ministry of Natural Resources and Forestry. 2015. Significant Wildlife Habitat Ecoregion 6E Criterion Schedule. 41pp.

Ontario Ministry of Natural Resources and Forestry. 2012. Natural Heritage Assessment Guide for Renewable Energy Projects. Second Edition. 109pp.

Ontario Nature. Ontario Reptile and Amphibian Atlas 2010 (Updated 2013). [http://www.ontarionature.org/protect/species/reptiles\\_and\\_amphibians/index.php](http://www.ontarionature.org/protect/species/reptiles_and_amphibians/index.php). Accessed June 2016.

Ontario Odonata Atlas. 2005. Natural Heritage Information Centre, Ontario Ministry of Natural Resources.

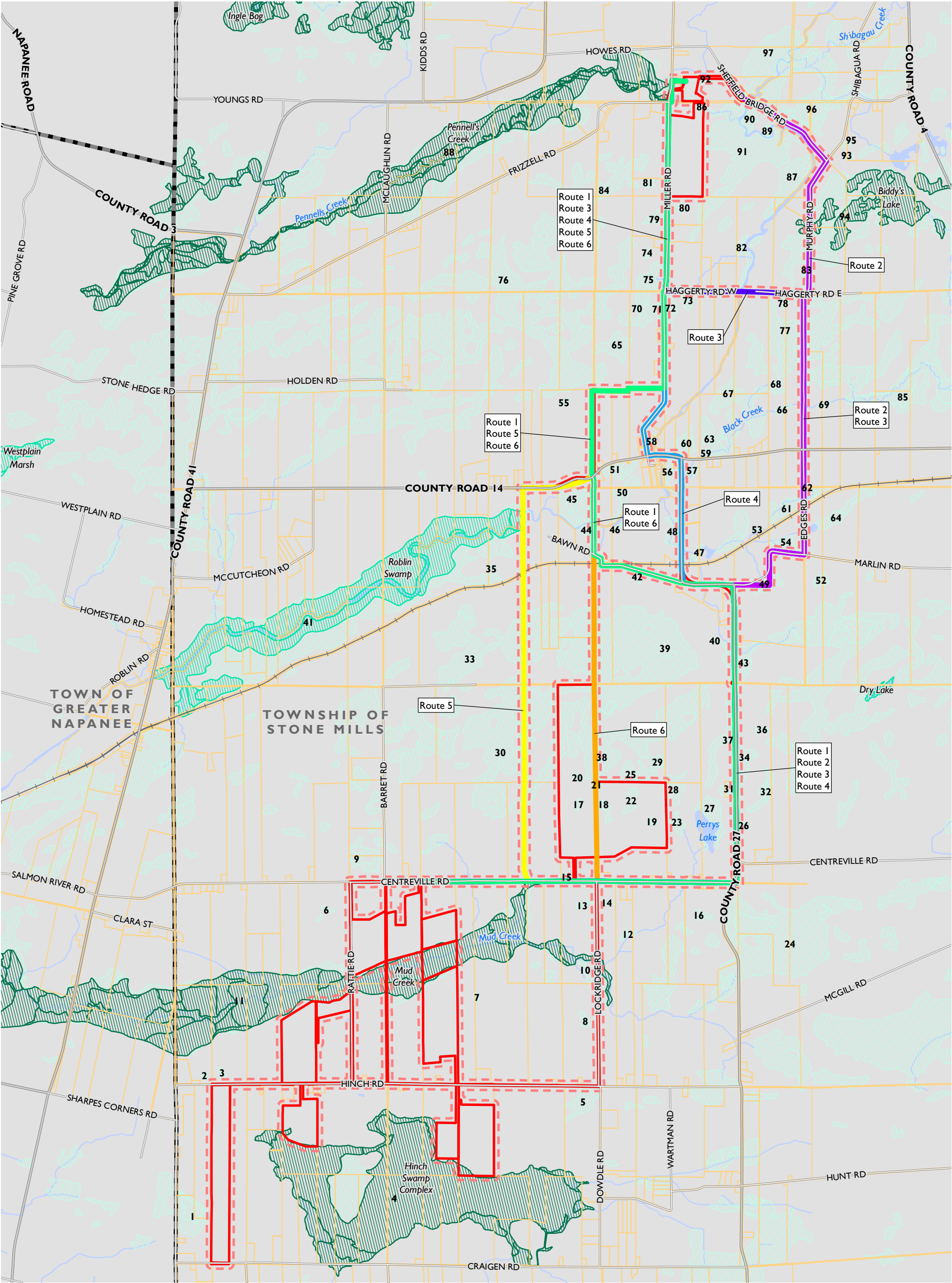
Toronto Entomologists Association. Ontario Butterfly Atlas Online (Updated 2013). [http://www.ontarioinsects.org/atlas\\_online.htm](http://www.ontarioinsects.org/atlas_online.htm). Accessed June 2016.

Township of Stone Mills. Official Plan and Schedules. 2014.

## Appendix A

### *Supplementary Information*





LOYALIST SOLAR PROJECT

LOYALIST SOLAR LP

WETLANDS

FIGURE A1

Potential Connection Line Routes

Route 1

Route 2

Route 3

Route 4

Route 5

Route 6

Railway

Project Location Boundary (subject to refinement)

50 m Setback

Parcel Boundary

Municipal Boundary

Provincially Significant Wetland

Evaluated Wetland

Unevaluated Wetland

Mapped Watercourse

Mapped Water Body

MAP CREATED BY: GM

MAP CHECKED BY: JP

DATA PROVIDED BY: MNR

MAP PROJECTION: NAD 1983 UTM Zone 18N

1:40,000

0

0.5

1

2 km

W

N

E

S

PROJECT: 163674

STATUS: DRAFT

DATE: 10/24/2016

FILE LOCATION: I:\GIS\163674 - Loyalist Solar\mxd\Records Review\Figure A1 Wetlands.mxd

**Table A1: Wetland Locations Relative to the Project Location**

| Wetland ID        | Distance Relative to Project Location |             |
|-------------------|---------------------------------------|-------------|
|                   | Within                                | Within 50 m |
| 1                 |                                       | ✓           |
| 4 (Hinch Swamp)   | ✓                                     |             |
| 5                 |                                       | ✓           |
| 10                |                                       | ✓           |
| 11 (Mud Creek)    | ✓                                     |             |
| 13                |                                       | ✓           |
| 14                |                                       | ✓           |
| 15                |                                       | ✓           |
| 17                | ✓                                     |             |
| 18                | ✓                                     |             |
| 19                | ✓                                     |             |
| 20                | ✓                                     |             |
| 21                | ✓                                     |             |
| 22                | ✓                                     |             |
| 23                | ✓                                     |             |
| 25                | ✓                                     |             |
| 26                |                                       | ✓           |
| 28                | ✓                                     |             |
| 30                | ✓                                     |             |
| 31                |                                       | ✓           |
| 33                | ✓                                     |             |
| 34                |                                       | ✓           |
| 37                |                                       | ✓           |
| 38                | ✓                                     |             |
| 39                | ✓                                     |             |
| 40                |                                       | ✓           |
| 41 (Roblin Swamp) |                                       | ✓           |
| 42                |                                       | ✓           |
| 43                |                                       | ✓           |
| 44                |                                       | ✓           |

| Wetland ID           | Distance Relative to Project Location |             |
|----------------------|---------------------------------------|-------------|
|                      | Within                                | Within 50 m |
| 45                   | ✓                                     |             |
| 48                   |                                       | ✓           |
| 49                   | ✓                                     |             |
| 54                   |                                       | ✓           |
| 56                   |                                       | ✓           |
| 57                   |                                       | ✓           |
| 58                   |                                       | ✓           |
| 60                   |                                       | ✓           |
| 61                   |                                       | ✓           |
| 62                   |                                       | ✓           |
| 71                   |                                       | ✓           |
| 72                   |                                       | ✓           |
| 73                   |                                       | ✓           |
| 75                   |                                       | ✓           |
| 77                   |                                       | ✓           |
| 78                   |                                       | ✓           |
| 79                   |                                       | ✓           |
| 80                   |                                       | ✓           |
| 83                   |                                       | ✓           |
| 85                   |                                       | ✓           |
| 86                   | ✓                                     |             |
| 88 (Pennell's Creek) |                                       | ✓           |
| 90                   |                                       | ✓           |
| 91                   |                                       | ✓           |
| 92                   | ✓                                     |             |
| 94 (Biddy's Lake)    |                                       | ✓           |
| 96                   |                                       | ✓           |
| 97                   |                                       | ✓           |

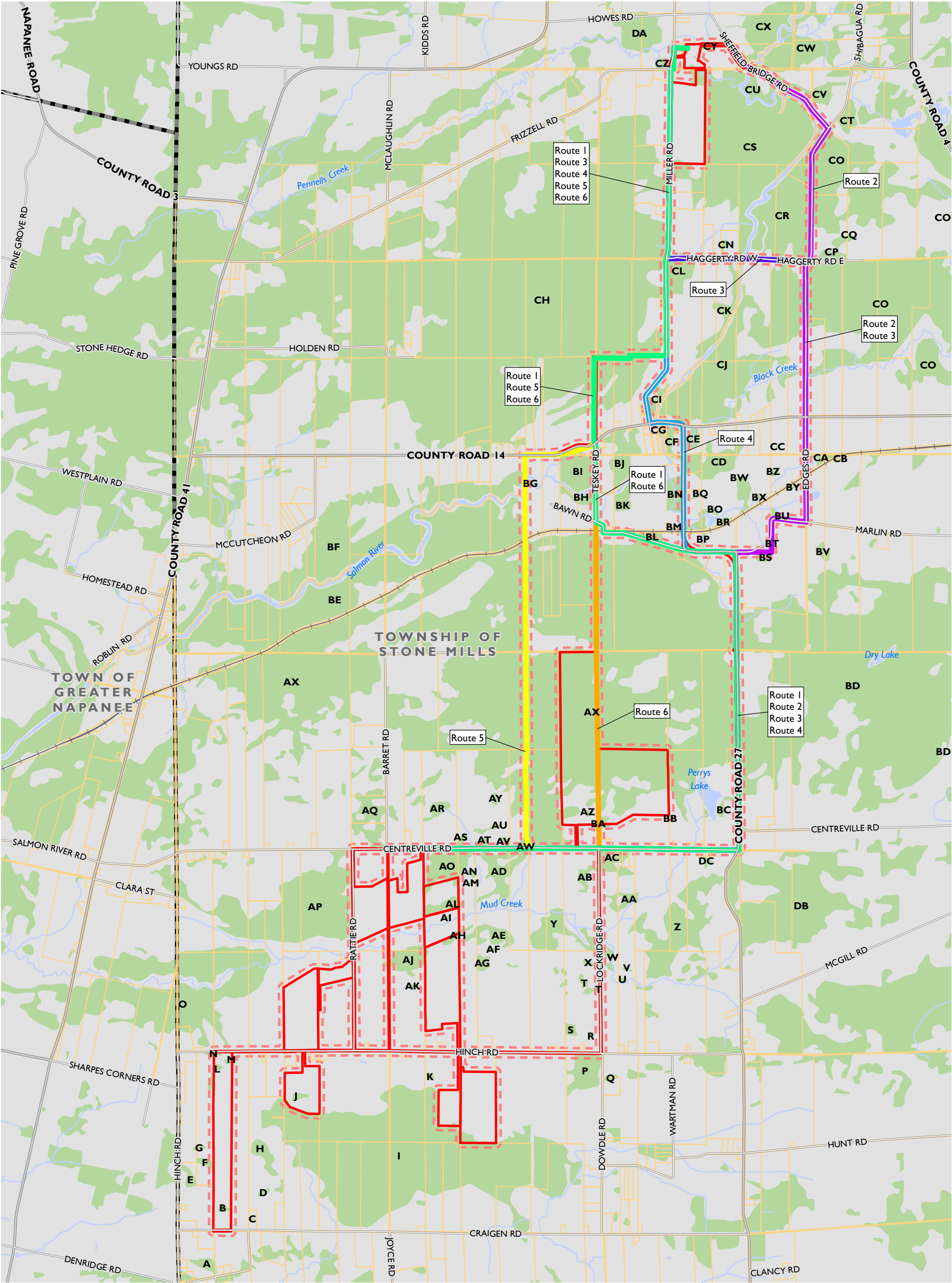


Table A2: Woodland Locations Relative to the Project Location

| Woodland ID | Distance Relative to Project Location |             |
|-------------|---------------------------------------|-------------|
|             | Within                                | Within 50 m |
| AA          |                                       | ✓           |
| AB          |                                       | ✓           |
| AC          |                                       | ✓           |
| AD          |                                       | ✓           |
| AE          |                                       | ✓           |
| AH          | ✓                                     |             |
| AI          |                                       | ✓           |
| AJ          | ✓                                     |             |
| AL          | ✓                                     |             |
| AO          | ✓                                     |             |
| AP          |                                       | ✓           |
| AQ          |                                       | ✓           |
| AS          |                                       | ✓           |
| AT          |                                       | ✓           |
| AV          |                                       | ✓           |
| AW          |                                       | ✓           |
| AX          | ✓                                     |             |
| AZ          | ✓                                     |             |
| B           | ✓                                     |             |
| BA          | ✓                                     |             |
| BB          |                                       | ✓           |
| BC          |                                       | ✓           |
| BD          | ✓                                     |             |
| BE          | ✓                                     |             |
| BF          |                                       | ✓           |
| BG          |                                       | ✓           |
| BH          |                                       | ✓           |
| BI          | ✓                                     |             |
| BL          |                                       | ✓           |
| BM          |                                       | ✓           |
| BN          |                                       | ✓           |

| Woodland ID | Distance Relative to Project Location |             |
|-------------|---------------------------------------|-------------|
|             | Within                                | Within 50 m |
| BO          |                                       | ✓           |
| BP          |                                       | ✓           |
| BS          |                                       | ✓           |
| BT          | ✓                                     |             |
| BU          |                                       | ✓           |
| CA          |                                       | ✓           |
| CD          |                                       | ✓           |
| CE          |                                       | ✓           |
| CF          |                                       | ✓           |
| CH          | ✓                                     |             |
| CI          |                                       |             |
| CJ          | ✓                                     |             |
| CK          |                                       | ✓           |
| CL          |                                       | ✓           |
| CN          |                                       | ✓           |
| CO          |                                       | ✓           |
| CR          | ✓                                     |             |
| CS          | ✓                                     |             |
| CU          |                                       | ✓           |
| CV          |                                       | ✓           |
| CW          |                                       | ✓           |
| CX          |                                       | ✓           |
| CY          | ✓                                     |             |
| CZ          |                                       | ✓           |
| F           |                                       | ✓           |
| I           | ✓                                     |             |
| J           | ✓                                     |             |
| L           | ✓                                     |             |
| M           | ✓                                     |             |
| N           | ✓                                     |             |
| O           |                                       | ✓           |

| Woodland ID | Distance Relative to Project Location |             |
|-------------|---------------------------------------|-------------|
|             | Within                                | Within 50 m |
| P           |                                       | ✓           |
| T           |                                       | ✓           |
| W           |                                       | ✓           |
| X           |                                       | ✓           |
| Y           |                                       | ✓           |



LOYALIST SOLAR PROJECT

LOYALIST SOLAR LP

WOODLANDS

FIGURE A2

Potential Connection Line Routes

Route 1

Route 2

Route 3

Route 4

Route 5

Route 6

Railway

Project Location Boundary (subject to refinement)

Parcel Boundary

50 m Setback

Municipal Boundary

Mapped Watercourse

Mapped Water Body

Woodland

MAP CREATED BY: GM

MAP CHECKED BY: JP

DATA PROVIDED BY: MNR

MAP PROJECTION: NAD 1983 UTM Zone 18N

1:40,000

0 0.5 1 2 km

W

N

E

S

PROJECT: 163674

STATUS: DRAFT

DATE: 10/24/2016

THUNDER BAY

SAULT STE. MARIE

SUDBURY

PETERBOROUGH

BARRE

TORONTO

LONDON

WINDSOR

TEMNINS

NORTH BAY

OTTAWA

KINGSTON

FILE LOCATION: I:\GIS\163674 - Loyalist Solar\Records Review\Figure A2 Woodlands.mxd

## Appendix B

### *Data Layers*

**Table B1: GIS Data Table**

| <b>Title of Data Set</b>   | <b>Data Layers</b>                      | <b>Vintage of Data or Date Info Searched/ Collected</b> | <b>Ownership of Information</b> | <b>Project Site</b> |
|----------------------------|---|---|---------------------------------|---------------------|
| Wetland                    | Wetlands                                | 2016  | MNRF                            | Loyalist            |
| BluEarth_NAP_Parcel        | Parcel Boundaries                       | 2016  | CanAcre                         | Loyalist            |
| Wooded_Area                | Woodlands                               | 2016  | MNRF                            | Loyalist            |
| Ohn_Watercourse            | Watercourse Features                    | 2016  | MNRF                            | Loyalist            |
| Orwn_Track                 | Railway centrelines                     | 2016  | MNRF                            | Loyalist            |
| Orn_Segment_With_Address   | Hwy/Local/Secondary/<br>Primary Roads   | 2016  | MNRF                            | Loyalist            |
| Utility_Line               | Utility Lines                           | 2016  | MNRF                            | Loyalist            |
| Ohn_Waterbody              | Ontario Water Bodies                    | 2016  | MNRF                            | Loyalist            |
| Ansi                       | Area of Natural and Scientific Interest | 2016  | MNRF                            | Loyalist            |
| Munic_Bnd_Lower_And_Single | Municipal Boundaries                    | 2016  | MNRF                            | Loyalist            |
| ANSI                       | Area of Natural or Scientific Interest  | 2016  | MNRF                            | Loyalist            |
| WINTERING_AREA             | Wintering Areas                         | 2016  | MNRF                            | Loyalist            |
| Alvar_MNRF                 | Alvar Vegetation Community              | 2016  | MNRF                            | Loyalist            |

## Appendix C

### *Species Lists*

**Table C1: Plants List Based on Background Records**

| Scientific Name                                 | Common Name                             | Conservation Status |                        |                    |                             |                        | Information Source |                   |                               |                                  |
|---|---|---------------------|------------------------|--------------------|-----------------------------|------------------------|--------------------|-------------------|-------------------------------|----------------------------------|
|   |   | National            | Provincial             |                    | Coefficient of Conservation | Coefficient of Wetness | NHIC <sup>4</sup>  | MNRF <sup>5</sup> | Previous Studies <sup>6</sup> | Public Observations <sup>7</sup> |
|   |   | SARA <sup>1</sup>   | ESA, 2007 <sup>2</sup> | SRank <sup>3</sup> |                             |                        |                    |                   |                               |                                  |
| <i>Draba reptans</i>                            | Carolina Whitlow-grass/ Creeping Draba* | ---                 | ---                    | S3                 | 9                           | 5                      |                    |                   | ●                             |                                  |
| <i>Carex oligocarpa</i>                         | Few-fruited Sedge*                      | ---                 | ---                    | S3                 | 9                           | 1                      |                    | ●                 |                               |                                  |
| <i>Nuphar advena</i>                            | Large Yellow Pond-lily*                 | ---                 | ---                    | S3                 | 8                           | -5                     |                    |                   | ●                             |                                  |
| <i>Juncus secundus</i>                          | One-sided Rush*                         | ---                 | ---                    | S3                 | 9                           | 5                      |                    | ●                 |                               |                                  |
| <i>Torreyochloa pallida</i> var. <i>pallida</i> | Pale False Mannagrass*                  | ---                 | ---                    | S2                 | 9                           | -5                     | ●                  |                   |                               |                                  |
| <i>Myosurus minimus</i>                         | Tiny Mousetail*                         | ---                 | ---                    | S2                 | 8                           | 3                      | ●                  |                   | ●                             |                                  |

<sup>1</sup>Species at Risk Act; <sup>2</sup>Endangered Species Act; <sup>3</sup>SRank Code (see below); <sup>4</sup>MNRF Natural Heritage Information Centre Database; <sup>5</sup>MNRF Species at Risk Online Mapping; <sup>6</sup>Previous Studies as referenced in the NHA Records Review Report; <sup>7</sup>Observations submitted by local landowners. ● denotes occurrence record; --- denotes no information, no status or not applicable; \* denotes Species of Conservation Concern.

Note that common species and Species at Risk listed as Threatened or Endangered on Ontario Regulation 230/08 are not included in this table. For all codes, please see overview following Table C2 below.



Table C2: Wildlife List Based on Background Records

| Scientific Name                  | Common Name                  | Conservation Status |                        |                    | Information Source |                            |                      |                             |                            |                              |                    |                   |                                |                                   |
|----------------------------------|------------------------------|---------------------|------------------------|--------------------|--------------------|----------------------------|----------------------|-----------------------------|----------------------------|------------------------------|--------------------|-------------------|--------------------------------|-----------------------------------|
|                                  |                              | National            | Provincial             |                    | NHIC <sup>4</sup>  | OBBA <sup>5</sup> Square s | Mammals <sup>6</sup> | Ontario Nature <sup>7</sup> | Odonata Atlas <sup>8</sup> | Butterfly Atlas <sup>9</sup> | MNRF <sup>10</sup> | IBA <sup>11</sup> | Previous Studies <sup>12</sup> | Public Observations <sup>13</sup> |
|                                  |                              | SARA <sup>1</sup>   | ESA, 2007 <sup>2</sup> | SRank <sup>3</sup> |                    |                            |                      |                             |                            |                              |                    |                   |                                |                                   |
| BIRDS                            |                              |                     |                        |                    |                    |                            |                      |                             |                            |                              |                    |                   |                                |                                   |
| <i>Empidonax alnorum</i>         | Alder Flycatcher             | ---                 | ---                    | S5B                |                    | •                          |                      |                             |                            |                              |                    |                   |                                |                                   |
| <i>Botaurus lentiginosus</i>     | American Bittern             | ---                 | ---                    | S4B                |                    | •                          |                      |                             |                            |                              |                    |                   | •                              |                                   |
| <i>Corvus brachyrhynchos</i>     | American Crow                | ---                 | ---                    | S5B                |                    | •                          |                      |                             |                            |                              |                    |                   |                                |                                   |
| <i>Carduelis tristis</i>         | American Goldfinch           | ---                 | ---                    | S5B                |                    | •                          |                      |                             |                            |                              |                    |                   |                                | •                                 |
| <i>Falco sparverius</i>          | American Kestrel             | ---                 | ---                    | S4                 |                    | •                          |                      |                             |                            |                              |                    |                   |                                |                                   |
| <i>Setophaga ruticilla</i>       | American Redstart            | ---                 | ---                    | S5B                |                    | •                          |                      |                             |                            |                              |                    |                   |                                |                                   |
| <i>Turdus migratorius</i>        | American Robin               | ---                 | ---                    | S5B                |                    | •                          |                      |                             |                            |                              |                    |                   |                                | •                                 |
| <i>Scolopax minor</i>            | American Woodcock            | ---                 | ---                    | S4B                |                    | •                          |                      |                             |                            |                              |                    |                   |                                |                                   |
| <i>Icterus galbula</i>           | Baltimore Oriole             | ---                 | ---                    | S4B                |                    | •                          |                      |                             |                            |                              |                    |                   |                                |                                   |
| <i>Strix varia</i>               | Barred Owl                   | ---                 | ---                    | S5                 |                    | •                          |                      |                             |                            |                              |                    |                   |                                |                                   |
| <i>Ceryle alcyon</i>             | Belted Kingfisher            | ---                 | ---                    | S4B                |                    | •                          |                      |                             |                            |                              |                    |                   |                                |                                   |
| <i>Chlidonias niger</i>          | Black Tern*                  | ---                 | SC                     | S3B                | •                  | •                          |                      |                             |                            |                              | •                  |                   |                                |                                   |
| <i>Mniotilta varia</i>           | Black-and-white Warbler      | ---                 | ---                    | S5B                |                    | •                          |                      |                             |                            |                              |                    |                   |                                |                                   |
| <i>Coccyzus erythrophthalmus</i> | Black-billed Cuckoo          | ---                 | ---                    | S5B                |                    | •                          |                      |                             |                            |                              |                    |                   |                                |                                   |
| <i>Poecile atricapillus</i>      | Black-capped Chickadee       | ---                 | ---                    | S5                 |                    | •                          |                      |                             |                            |                              |                    |                   |                                | •                                 |
| <i>Dendroica caerulescens</i>    | Black-throated Blue Warbler  | ---                 | ---                    | S5B                |                    | •                          |                      |                             |                            |                              |                    |                   |                                |                                   |
| <i>Dendroica virens</i>          | Black-throated Green Warbler | ---                 | ---                    | S5B                |                    | •                          |                      |                             |                            |                              |                    |                   |                                |                                   |
| <i>Polioptila caerulea</i>       | Blue-gray Gnatcatcher        | ---                 | ---                    | S4B                |                    | •                          |                      |                             |                            |                              |                    |                   |                                |                                   |
| <i>Cyanocitta cristata</i>       | Blue Jay                     | ---                 | ---                    | S5                 |                    | •                          |                      |                             |                            |                              |                    |                   |                                | •                                 |
| <i>Anas discors</i>              | Blue-winged Teal             | ---                 | ---                    | S4                 |                    | •                          |                      |                             |                            |                              |                    |                   |                                |                                   |
| <i>Vermivora pinus</i>           | Blue-winged Warbler          | ---                 | ---                    | S4B                |                    | •                          |                      |                             |                            |                              |                    |                   |                                |                                   |
| <i>Certhia americana</i>         | Brown Creeper                | ---                 | ---                    | S5B                |                    | •                          |                      |                             |                            |                              |                    |                   |                                |                                   |
| <i>Toxostoma rufum</i>           | Brown Thrasher               | ---                 | ---                    | S4B                |                    | •                          |                      |                             |                            |                              |                    |                   |                                | •                                 |
| <i>Molothrus ater</i>            | Brown-headed Cowbird         | ---                 | ---                    | S4B                |                    | •                          |                      |                             |                            |                              |                    |                   |                                | •                                 |
| <i>Branta canadensis</i>         | Canada Goose                 | ---                 | ---                    | S5                 |                    | •                          |                      |                             |                            |                              |                    |                   |                                |                                   |
| <i>Wilsonia canadensis</i>       | Canada Warbler*              | THR                 | SC                     | S4B                |                    |                            |                      |                             |                            |                              | •                  |                   |                                |                                   |
| <i>Bombycilla cedrorum</i>       | Cedar Waxwing                | ---                 | ---                    | S5B                |                    | •                          |                      |                             |                            |                              |                    |                   |                                |                                   |
| <i>Dendroica pensylvanica</i>    | Chestnut-sided Warbler       | ---                 | ---                    | S5B                |                    | •                          |                      |                             |                            |                              |                    |                   |                                |                                   |
| <i>Spizella passerina</i>        | Chipping Sparrow             | ---                 | ---                    | S5B                |                    | •                          |                      |                             |                            |                              |                    |                   |                                | •                                 |

| Scientific Name                 | Common Name                   | Conservation Status |                        |                    | Information Source |                            |                      |                             |                            |                              |                    |                   |                                |                                   |
|---------------------------------|-------------------------------|---------------------|------------------------|--------------------|--------------------|----------------------------|----------------------|-----------------------------|----------------------------|------------------------------|--------------------|-------------------|--------------------------------|-----------------------------------|
|                                 |                               | National            | Provincial             |                    | NHIC <sup>4</sup>  | OBBA <sup>5</sup> Square s | Mammals <sup>6</sup> | Ontario Nature <sup>7</sup> | Odonata Atlas <sup>8</sup> | Butterfly Atlas <sup>9</sup> | MNRF <sup>10</sup> | IBA <sup>11</sup> | Previous Studies <sup>12</sup> | Public Observations <sup>13</sup> |
|                                 |                               | SARA <sup>1</sup>   | ESA, 2007 <sup>2</sup> | SRank <sup>3</sup> |                    |                            |                      |                             |                            |                              |                    |                   |                                |                                   |
| <i>Spizella pallida</i>         | Clay-coloured Sparrow         | ---                 | ---                    | S4B                |                    | •                          |                      |                             |                            |                              |                    |                   |                                |                                   |
| <i>Petrochelidon pyrrhonota</i> | Cliff Swallow                 | ---                 | ---                    | S4B                |                    | •                          |                      |                             |                            |                              |                    |                   |                                |                                   |
| <i>Gallinula chloropus</i>      | Common Gallinule              | ---                 | ---                    | S4B                |                    | •                          |                      |                             |                            |                              |                    |                   |                                |                                   |
| <i>Quiscalus quiscula</i>       | Common Grackle                | ---                 | ---                    | S5B                |                    | •                          |                      |                             |                            |                              |                    |                   |                                | •                                 |
| <i>Gavia immer</i>              | Common Loon                   | ---                 | ---                    | S5B, S5N           |                    | •                          |                      |                             |                            |                              |                    |                   |                                |                                   |
| <i>Chordeiles minor</i>         | Common Nighthawk*             | THR                 | SC                     | S4B                |                    | •                          |                      |                             |                            |                              | •                  |                   |                                |                                   |
| <i>Corvus corax</i>             | Common Raven                  | ---                 | ---                    | S5                 |                    | •                          |                      |                             |                            |                              |                    |                   |                                |                                   |
| <i>Gallinago gallinago</i>      | Common Snipe (Wilson’s Snipe) | ---                 | ---                    | S5B, SZN           |                    | •                          |                      |                             |                            |                              |                    |                   |                                |                                   |
| <i>Geothlypis trichas</i>       | Common Yellowthroat           | ---                 | ---                    | S5B                |                    | •                          |                      |                             |                            |                              |                    |                   |                                |                                   |
| <i>Junco hyemalis</i>           | Dark-eyed Junco               | ---                 | ---                    | S5B                |                    |                            |                      |                             |                            |                              |                    |                   |                                | •                                 |
| <i>Picoides pubescens</i>       | Downy Woodpecker              | ---                 | ---                    | S5                 |                    | •                          |                      |                             |                            |                              |                    |                   |                                | •                                 |
| <i>Sialia sialis</i>            | Eastern Bluebird              | ---                 | ---                    | S5B                |                    | •                          |                      |                             |                            |                              |                    |                   |                                |                                   |
| <i>Tyrannus tyrannus</i>        | Eastern Kingbird              | ---                 | ---                    | S4B                |                    | •                          |                      |                             |                            |                              |                    |                   |                                |                                   |
| <i>Sayornis phoebe</i>          | Eastern Phoebe                | ---                 | ---                    | S5B                |                    | •                          |                      |                             |                            |                              |                    |                   |                                | •                                 |
| <i>Otus asio</i>                | Eastern Screech-owl           | ---                 | ---                    | S4                 |                    | •                          |                      |                             |                            |                              |                    |                   |                                |                                   |
| <i>Pipilo erythrophthalmus</i>  | Eastern Towhee                | ---                 | ---                    | S4B                |                    | •                          |                      |                             |                            |                              |                    |                   |                                | •                                 |
| <i>Contopus virens</i>          | Eastern Wood-pewee*           | ---                 | SC                     | S4B                |                    | •                          |                      |                             |                            |                              | •                  |                   |                                |                                   |
| <i>Sturnus vulgaris</i>         | European Starling             | ---                 | ---                    | SNA                |                    | •                          |                      |                             |                            |                              |                    |                   |                                | •                                 |
| <i>Spizella pusilla</i>         | Field Sparrow                 | ---                 | ---                    | S4B                |                    | •                          |                      |                             |                            |                              |                    |                   |                                |                                   |
| <i>Anas strepera</i>            | Gadwall                       | ---                 | ---                    | S4B                |                    | •                          |                      |                             |                            |                              |                    |                   |                                |                                   |
| <i>Vermivora chrysoptera</i>    | Golden-winged Warbler*        | THR                 | SC                     | S4B                |                    | •                          |                      |                             |                            |                              | •                  |                   |                                |                                   |
| <i>Ammodramus savannarum</i>    | Grasshopper Sparrow           | ---                 | ---                    | S4B, SZN           |                    | •                          |                      |                             |                            |                              |                    |                   |                                |                                   |
| <i>Dumetella carolinensis</i>   | Gray Catbird                  | ---                 | ---                    | S4B                |                    | •                          |                      |                             |                            |                              |                    |                   |                                |                                   |
| <i>Ardea herodias</i>           | Great Blue Heron              | ---                 | ---                    | S4                 |                    | •                          |                      |                             |                            |                              |                    |                   | •                              |                                   |
| <i>Myiarchus crinitus</i>       | Great Crested Flycatcher      | ---                 | ---                    | S4B                |                    | •                          |                      |                             |                            |                              |                    |                   |                                |                                   |
| <i>Bubo virginianus</i>         | Great Horned Owl              | ---                 | ---                    | S4                 |                    | •                          |                      |                             |                            |                              |                    |                   |                                |                                   |
| <i>Aythya marila</i>            | Greater Scaup                 | ---                 | ---                    | S4                 |                    |                            |                      |                             |                            |                              |                    | •                 |                                |                                   |
| <i>Butorides virescens</i>      | Green Heron                   | ---                 | ---                    | S4B                |                    | •                          |                      |                             |                            |                              |                    |                   | •                              |                                   |
| <i>Anas crecca</i>              | Green-winged Teal             | ---                 | ---                    | S4                 |                    | •                          |                      |                             |                            |                              |                    |                   |                                |                                   |
| <i>Picoides villosus</i>        | Hairy Woodpecker              | ---                 | ---                    | S5                 |                    | •                          |                      |                             |                            |                              |                    |                   |                                | •                                 |
| <i>Catharus guttatus</i>        | Hermit Thrush                 | ---                 | ---                    | S5B                |                    | •                          |                      |                             |                            |                              |                    |                   |                                |                                   |

| Scientific Name                   | Common Name                   | Conservation Status |                        |                    | Information Source |                            |                      |                             |                            |                              |                   |                   |                                |                                   |
|-----------------------------------|-------------------------------|---------------------|------------------------|--------------------|--------------------|----------------------------|----------------------|-----------------------------|----------------------------|------------------------------|-------------------|-------------------|--------------------------------|-----------------------------------|
|                                   |                               | National            | Provincial             |                    | NHIC <sup>4</sup>  | OBBA <sup>5</sup> Square s | Mammals <sup>6</sup> | Ontario Nature <sup>7</sup> | Odonata Atlas <sup>8</sup> | Butterfly Atlas <sup>9</sup> | MNR <sup>10</sup> | IBA <sup>11</sup> | Previous Studies <sup>12</sup> | Public Observations <sup>13</sup> |
|                                   |                               | SARA <sup>1</sup>   | ESA, 2007 <sup>2</sup> | SRank <sup>3</sup> |                    |                            |                      |                             |                            |                              |                   |                   |                                |                                   |
| <i>Larus argentatus</i>           | Herring Gull                  | ---                 | ---                    | S5B,S5N            |                    |                            |                      |                             |                            |                              |                   | •                 |                                |                                   |
| <i>Lophodytes cucullatus</i>      | Hooded Merganser              | ---                 | ---                    | S5B, S5N           |                    | •                          |                      |                             |                            |                              |                   |                   |                                |                                   |
| <i>Eremophila alpestris</i>       | Horned Lark                   | ---                 | ---                    | S5B, SZN           |                    | •                          |                      |                             |                            |                              |                   |                   |                                |                                   |
| <i>Carpodacus mexicanus</i>       | House Finch                   | ---                 | ---                    | SNA                |                    | •                          |                      |                             |                            |                              |                   |                   |                                |                                   |
| <i>Passer domesticus</i>          | House Sparrow                 | ---                 | ---                    | SNA                |                    | •                          |                      |                             |                            |                              |                   |                   |                                |                                   |
| <i>Troglodytes aedon</i>          | House Wren                    | ---                 | ---                    | S5B                |                    | •                          |                      |                             |                            |                              |                   |                   |                                |                                   |
| <i>Passerina cyanea</i>           | Indigo Bunting                | ---                 | ---                    | S4B                |                    | •                          |                      |                             |                            |                              |                   |                   |                                |                                   |
| <i>Charadrius vociferus</i>       | Killdeer                      | ---                 | ---                    | S5B, S5N           |                    | •                          |                      |                             |                            |                              |                   |                   |                                | •                                 |
| <i>Empidonax minimus</i>          | Least Flycatcher              | ---                 | ---                    | S4B                |                    | •                          |                      |                             |                            |                              |                   |                   |                                |                                   |
| <i>Larus minutus</i>              | Little Gull                   | ---                 | ---                    | S1B                |                    |                            |                      |                             |                            |                              |                   | •                 |                                |                                   |
| <i>Dendroica magnolia</i>         | Magnolia Warbler              | ---                 | ---                    | S5B                |                    | •                          |                      |                             |                            |                              |                   |                   |                                |                                   |
| <i>Anas platyrhynchos</i>         | Mallard                       | ---                 | ---                    | S5                 |                    | •                          |                      |                             |                            |                              |                   |                   |                                |                                   |
| <i>Cistothorus palustris</i>      | Marsh Wren                    | ---                 | ---                    | S4B                |                    | •                          |                      |                             |                            |                              |                   |                   | •                              |                                   |
| <i>Zenaida macroura</i>           | Mourning Dove                 | ---                 | ---                    | S5                 |                    | •                          |                      |                             |                            |                              |                   |                   |                                | •                                 |
| <i>Vermivora ruficapilla</i>      | Nashville Warbler             | ---                 | ---                    | S5B                |                    | •                          |                      |                             |                            |                              |                   |                   |                                |                                   |
| <i>Cardinalis cardinalis</i>      | Northern Cardinal             | ---                 | ---                    | S5                 |                    | •                          |                      |                             |                            |                              |                   |                   |                                | •                                 |
| <i>Colaptes auratus</i>           | Northern Flicker              | ---                 | ---                    | S4B                |                    | •                          |                      |                             |                            |                              |                   |                   |                                |                                   |
| <i>Circus cyaneus</i>             | Northern Harrier              | ---                 | ---                    | S4B                |                    | •                          |                      |                             |                            |                              |                   |                   | •                              |                                   |
| <i>Mimus polyglottos</i>          | Northern Mockingbird          | ---                 | ---                    | S4                 |                    | •                          |                      |                             |                            |                              |                   |                   |                                |                                   |
| <i>Anas acuta</i>                 | Northern Pintail              | ---                 | ---                    | S5                 |                    | •                          |                      |                             |                            |                              |                   |                   |                                |                                   |
| <i>Stelgidopteryx serripennis</i> | Northern Rough-winged Swallow | ---                 | ---                    | S4B                |                    | •                          |                      |                             |                            |                              |                   |                   |                                |                                   |
| <i>Seiurus noveboracensis</i>     | Northern Waterthrush          | ---                 | ---                    | S5B                |                    | •                          |                      |                             |                            |                              |                   |                   |                                |                                   |
| <i>Pandion haliaetus</i>          | Osprey                        | ---                 | ---                    | S5B                |                    | •                          |                      |                             |                            |                              |                   |                   |                                |                                   |
| <i>Seiurus aurocapillus</i>       | Ovenbird                      | ---                 | ---                    | S4B                |                    | •                          |                      |                             |                            |                              |                   |                   |                                |                                   |
| <i>Podilymbus podiceps</i>        | Pied-billed Grebe             | ---                 | ---                    | S4B, S4N           |                    | •                          |                      |                             |                            |                              |                   |                   | •                              |                                   |
| <i>Dryocopus pileatus</i>         | Pileated Woodpecker           | ---                 | ---                    | S5                 |                    | •                          |                      |                             |                            |                              |                   |                   |                                | •                                 |
| <i>Carduelis pinus</i>            | Pine Siskin                   | ---                 | ---                    | S4B                |                    | •                          |                      |                             |                            |                              |                   |                   |                                |                                   |
| <i>Dendroica pinus</i>            | Pine Warbler                  | ---                 | ---                    | S5B                |                    | •                          |                      |                             |                            |                              |                   |                   |                                |                                   |
| <i>Carpodacus purpureus</i>       | Purple Finch                  | ---                 | ---                    | S4B                |                    | •                          |                      |                             |                            |                              |                   |                   |                                | •                                 |
| <i>Progne subis</i>               | Purple Martin                 | ---                 | ---                    | S4B                |                    | •                          |                      |                             |                            |                              |                   |                   |                                |                                   |
| <i>Sitta canadensis</i>           | Red-breasted Nuthatch         | ---                 | ---                    | S5                 |                    | •                          |                      |                             |                            |                              |                   |                   |                                |                                   |

| Scientific Name                   | Common Name               | Conservation Status |                        |                    | Information Source |                            |                      |                             |                            |                              |                   |                   |                                |                                   |
|-----------------------------------|---------------------------|---------------------|------------------------|--------------------|--------------------|----------------------------|----------------------|-----------------------------|----------------------------|------------------------------|-------------------|-------------------|--------------------------------|-----------------------------------|
|                                   |                           | National            | Provincial             |                    | NHIC <sup>4</sup>  | OBBA <sup>5</sup> Square s | Mammals <sup>6</sup> | Ontario Nature <sup>7</sup> | Odonata Atlas <sup>8</sup> | Butterfly Atlas <sup>9</sup> | MNR <sup>10</sup> | IBA <sup>11</sup> | Previous Studies <sup>12</sup> | Public Observations <sup>13</sup> |
|                                   |                           | SARA <sup>1</sup>   | ESA, 2007 <sup>2</sup> | SRank <sup>3</sup> |                    |                            |                      |                             |                            |                              |                   |                   |                                |                                   |
| <i>Melanerpes erythrocephalus</i> | Red-headed Woodpecker*    | THR                 | SC                     | S4B                |                    |                            |                      |                             |                            |                              | •                 |                   |                                |                                   |
| <i>Vireo olivaceus</i>            | Red-eyed Vireo            | ---                 | ---                    | S5B                |                    | •                          |                      |                             |                            |                              |                   |                   |                                |                                   |
| <i>Buteo jamaicensis</i>          | Red-tailed Hawk           | ---                 | ---                    | S5                 |                    | •                          |                      |                             |                            |                              |                   |                   |                                |                                   |
| <i>Agelaius phoeniceus</i>        | Red-winged Blackbird      | ---                 | ---                    | S4                 |                    | •                          |                      |                             |                            |                              |                   |                   |                                | •                                 |
| <i>Aythya collaris</i>            | Ring-necked Duck          | ---                 | ---                    | S5                 |                    | •                          |                      |                             |                            |                              |                   |                   |                                |                                   |
| <i>Columba livia</i>              | Rock Dove                 | ---                 | ---                    | SNA                |                    | •                          |                      |                             |                            |                              |                   |                   |                                |                                   |
| <i>Pheucticus ludovicianus</i>    | Rose-breasted Grosbeak    | ---                 | ---                    | S4B                |                    | •                          |                      |                             |                            |                              |                   |                   |                                | •                                 |
| <i>Archilochus colubris</i>       | Ruby-throated Hummingbird | ---                 | ---                    | S5B                |                    | •                          |                      |                             |                            |                              |                   |                   |                                | •                                 |
| <i>Euphagus carolinus</i>         | Rusty Blackbird           | SC                  | ---                    | S4B                |                    |                            |                      |                             |                            |                              |                   | •                 |                                |                                   |
| <i>Bonasa umbellus</i>            | Ruffed Grouse             | ---                 | ---                    | S4                 |                    | •                          |                      |                             |                            |                              |                   |                   |                                |                                   |
| <i>Passerculus sandwichensis</i>  | Savannah Sparrow          | ---                 | ---                    | S4B                |                    | •                          |                      |                             |                            |                              |                   |                   |                                |                                   |
| <i>Piranga olivacea</i>           | Scarlet Tanager           | ---                 | ---                    | S4B                |                    | •                          |                      |                             |                            |                              |                   |                   |                                |                                   |
| <i>Cistothorus platensis</i>      | Sedge Wren                | ---                 | ---                    | S4B                |                    | •                          |                      |                             |                            |                              |                   |                   |                                |                                   |
| <i>Accipiter striatus</i>         | Sharp-shinned Hawk        | ---                 | ---                    | S5B, SZN           |                    | •                          |                      |                             |                            |                              |                   |                   |                                |                                   |
| <i>Melospiza melodia</i>          | Song Sparrow              | ---                 | ---                    | S5B                |                    | •                          |                      |                             |                            |                              |                   |                   |                                | •                                 |
| <i>Porzana carolina</i>           | Sora                      | ---                 | ---                    | S4B, SZN           |                    | •                          |                      |                             |                            |                              |                   |                   |                                |                                   |
| <i>Actitis macularia</i>          | Spotted Sandpiper         | ---                 | ---                    | S5                 |                    | •                          |                      |                             |                            |                              |                   |                   |                                |                                   |
| <i>Melospiza georgiana</i>        | Swamp Sparrow             | ---                 | ---                    | S5B                |                    | •                          |                      |                             |                            |                              |                   |                   |                                |                                   |
| <i>Tachycineta bicolor</i>        | Tree Swallow              | ---                 | ---                    | S4B                |                    | •                          |                      |                             |                            |                              |                   |                   |                                |                                   |
| <i>Cathartes aura</i>             | Turkey Vulture            | ---                 | ---                    | S5B                |                    | •                          |                      |                             |                            |                              |                   |                   |                                |                                   |
| <i>Bartramia longicauda</i>       | Upland Sandpiper          | ---                 | ---                    | S4B                |                    | •                          |                      |                             |                            |                              |                   |                   |                                | •                                 |
| <i>Catharus fuscenscens</i>       | Veery                     | ---                 | ---                    | S4B                |                    | •                          |                      |                             |                            |                              |                   |                   |                                |                                   |
| <i>Poocetes gramineus</i>         | Vesper Sparrow            | ---                 | ---                    | S4B                |                    | •                          |                      |                             |                            |                              |                   |                   |                                |                                   |
| <i>Rallus limicola</i>            | Virginia Rail             | ---                 | ---                    | S5B                |                    | •                          |                      |                             |                            |                              |                   |                   | •                              |                                   |
| <i>Vireo gilvus</i>               | Warbling Vireo            | ---                 | ---                    | S5B                |                    | •                          |                      |                             |                            |                              |                   |                   |                                |                                   |
| <i>Sitta carolinensis</i>         | White-breasted Nuthatch   | ---                 | ---                    | S5                 |                    | •                          |                      |                             |                            |                              |                   |                   |                                | •                                 |
| <i>Zonotrichia albicollis</i>     | White-throated Sparrow    | ---                 | ---                    | S5B                |                    | •                          |                      |                             |                            |                              |                   |                   |                                | •                                 |
| <i>Meleagris gallopavo</i>        | Wild Turkey               | ---                 | ---                    | S5                 |                    | •                          |                      |                             |                            |                              |                   |                   |                                |                                   |
| <i>Empidonax traillii</i>         | Willow Flycatcher         | ---                 | ---                    | S5B, SZN           |                    | •                          |                      |                             |                            |                              |                   |                   |                                |                                   |
| <i>Troglodytes troglodytes</i>    | Winter Wren               | ---                 | ---                    | S5B                |                    | •                          |                      |                             |                            |                              |                   |                   |                                |                                   |
| <i>Aix sponsa</i>                 | Wood Duck                 | ---                 | ---                    | S5                 |                    | •                          |                      |                             |                            |                              |                   |                   |                                |                                   |

| Scientific Name                | Common Name              | Conservation Status |                        |                    | Information Source |                            |                      |                             |                            |                              |                   |                   |                                |                                   |
|--------------------------------|--------------------------|---------------------|------------------------|--------------------|--------------------|----------------------------|----------------------|-----------------------------|----------------------------|------------------------------|-------------------|-------------------|--------------------------------|-----------------------------------|
|                                |                          | National            | Provincial             |                    | NHIC <sup>4</sup>  | OBBA <sup>5</sup> Square s | Mammals <sup>6</sup> | Ontario Nature <sup>7</sup> | Odonata Atlas <sup>8</sup> | Butterfly Atlas <sup>9</sup> | MNR <sup>10</sup> | IBA <sup>11</sup> | Previous Studies <sup>12</sup> | Public Observations <sup>13</sup> |
|                                |                          | SARA <sup>1</sup>   | ESA, 2007 <sup>2</sup> | SRank <sup>3</sup> |                    |                            |                      |                             |                            |                              |                   |                   |                                |                                   |
| <i>Hylocichla mustelina</i>    | Wood Thrush*             | ---                 | SC                     | S4B                |                    | •                          |                      |                             |                            |                              | •                 |                   |                                |                                   |
| <i>Dendroica petechia</i>      | Yellow Warbler           | ---                 | ---                    | S5B                |                    | •                          |                      |                             |                            |                              |                   |                   |                                |                                   |
| <i>Sphyrapicus varius</i>      | Yellow-bellied Sapsucker | ---                 | ---                    | S5B                |                    | •                          |                      |                             |                            |                              |                   |                   |                                |                                   |
| <i>Dendroica coronata</i>      | Yellow-rumped Warbler    | ---                 | ---                    | S5B                |                    | •                          |                      |                             |                            |                              |                   |                   |                                |                                   |
| <i>Vireo flavifrons</i>        | Yellow-throated Vireo    | ---                 | ---                    | S4B                |                    | •                          |                      |                             |                            |                              |                   |                   |                                |                                   |
| MAMMALS                        |                          |                     |                        |                    |                    |                            |                      |                             |                            |                              |                   |                   |                                |                                   |
| <i>Castor canadensis</i>       | American Beaver          | ---                 | ---                    | S5                 |                    |                            | •                    |                             |                            |                              |                   |                   |                                |                                   |
| <i>Ursus americanus</i>        | American Black Bear      | ---                 | ---                    | S5                 |                    |                            | •                    |                             |                            |                              |                   |                   |                                |                                   |
| <i>Mustela vison</i>           | American Mink            | ---                 | ---                    | S5                 |                    |                            | •                    |                             |                            |                              |                   |                   |                                |                                   |
| <i>Sorex hoyi</i>              | American Pygmy Shrew     | ---                 | ---                    | S4                 |                    |                            | •                    |                             |                            |                              |                   |                   |                                |                                   |
| <i>Eptesicus fuscus</i>        | Big Brown Bat            | ---                 | ---                    | S5                 |                    |                            | •                    |                             |                            |                              |                   |                   |                                |                                   |
| <i>Lynx rufus</i>              | Bobcat                   | ---                 | ---                    | S4                 |                    |                            | •                    |                             |                            |                              |                   |                   |                                |                                   |
| <i>Lynx canadensis</i>         | Canadian Lynx            | ---                 | ---                    | S5                 |                    |                            | •                    |                             |                            |                              |                   |                   |                                |                                   |
| <i>Sorex cinereus</i>          | Cinereus (Masked) Shrew  | ---                 | ---                    | S5                 |                    |                            | •                    |                             |                            |                              |                   |                   |                                |                                   |
| <i>Ondatra zibethicus</i>      | Common Muskrat           | ---                 | ---                    | S5                 |                    |                            | •                    |                             |                            |                              |                   |                   |                                |                                   |
| <i>Canis latrans</i>           | Coyote                   | ---                 | ---                    | S5                 |                    |                            | •                    |                             |                            |                              |                   |                   |                                | •                                 |
| <i>Peromyscus maniculatus</i>  | Deer Mouse               | ---                 | ---                    | S5                 |                    |                            | •                    |                             |                            |                              |                   |                   |                                |                                   |
| <i>Tamias striatus</i>         | Eastern Chipmunk         | ---                 | ---                    | S5                 |                    |                            | •                    |                             |                            |                              |                   |                   |                                |                                   |
| <i>Sylvilagus floridanus</i>   | Eastern Cottontail       | ---                 | ---                    | S5                 |                    |                            | •                    |                             |                            |                              |                   |                   |                                |                                   |
| <i>Sciurus carolinensis</i>    | Eastern Gray Squirrel    | ---                 | ---                    | S5                 |                    |                            | •                    |                             |                            |                              |                   |                   |                                |                                   |
| <i>Mustela erminea</i>         | Ermine                   | ---                 | ---                    | S5                 |                    |                            | •                    |                             |                            |                              |                   |                   |                                |                                   |
| <i>Martes pennanti</i>         | Fisher                   | ---                 | ---                    | S5                 |                    |                            | •                    |                             |                            |                              |                   |                   |                                |                                   |
| <i>Parascalops breweri</i>     | Hairy-tailed Mole        | ---                 | ---                    | S4                 |                    |                            | •                    |                             |                            |                              |                   |                   |                                |                                   |
| <i>Lasiurus cinereus</i>       | Hoary Bat                | ---                 | ---                    | S4                 |                    |                            | •                    |                             |                            |                              |                   |                   |                                |                                   |
| <i>Mustela nivalis</i>         | Least Weasel             | ---                 | ---                    | SU                 |                    |                            | •                    |                             |                            |                              |                   |                   |                                |                                   |
| <i>Mustela frenata</i>         | Long-tailed Weasel       | ---                 | ---                    | S4                 |                    |                            | •                    |                             |                            |                              |                   |                   |                                |                                   |
| <i>Zapus hudsonius</i>         | Meadow Jumping Mouse     | ---                 | ---                    | S5                 |                    |                            | •                    |                             |                            |                              |                   |                   |                                |                                   |
| <i>Microtus pennsylvanicus</i> | Meadow Vole              | ---                 | ---                    | S5                 |                    |                            | •                    |                             |                            |                              |                   |                   |                                |                                   |
| <i>Alces americanus</i>        | Moose                    | ---                 | ---                    | S5                 |                    |                            | •                    |                             |                            |                              |                   |                   |                                |                                   |
| <i>Erethizon dorsatum</i>      | North American Porcupine | ---                 | ---                    | S5                 |                    |                            | •                    |                             |                            |                              |                   |                   |                                |                                   |
| <i>Lontra canadensis</i>       | Northern River Otter     | ---                 | ---                    | S5                 |                    |                            | •                    |                             |                            |                              |                   |                   |                                |                                   |

| Scientific Name                                   | Common Name                 | Conservation Status |                        |                    | Information Source |                            |                      |                             |                            |                              |                   |                   |                                |                                   |
|---|-----------------------------|---------------------|------------------------|--------------------|--------------------|----------------------------|----------------------|-----------------------------|----------------------------|------------------------------|-------------------|-------------------|--------------------------------|-----------------------------------|
|   |                             | National            | Provincial             |                    | NHIC <sup>4</sup>  | OBBA <sup>5</sup> Square s | Mammals <sup>6</sup> | Ontario Nature <sup>7</sup> | Odonata Atlas <sup>8</sup> | Butterfly Atlas <sup>9</sup> | MNR <sup>10</sup> | IBA <sup>11</sup> | Previous Studies <sup>12</sup> | Public Observations <sup>13</sup> |
|   |                             | SARA <sup>1</sup>   | ESA, 2007 <sup>2</sup> | SRank <sup>3</sup> |                    |                            |                      |                             |                            |                              |                   |                   |                                |                                   |
| <i>Blarina brevicauda</i>                         | Northern Short-tailed Shrew | ---                 | ---                    | S5                 |                    |                            | •                    |                             |                            |                              |                   |                   |                                |                                   |
| <i>Procyon lotor</i>                              | Raccoon                     | ---                 | ---                    | S5                 |                    |                            | •                    |                             |                            |                              |                   |                   |                                |                                   |
| <i>Vulpes vulpes</i>                              | Red Fox                     | ---                 | ---                    | S5                 |                    |                            | •                    |                             |                            |                              |                   |                   |                                |                                   |
| <i>Tamiasciurus hudsonicus</i>                    | Red Squirrel                | ---                 | ---                    | S5                 |                    |                            | •                    |                             |                            |                              |                   |                   |                                |                                   |
| <i>Lasionycteris noctivagans</i>                  | Silver Haired Bat           | ---                 | ---                    | S4                 |                    |                            | •                    |                             |                            |                              |                   |                   |                                |                                   |
| <i>Sorex fumeus</i>                               | Smoky Shrew                 | ---                 | ---                    | S5                 |                    |                            | •                    |                             |                            |                              |                   |                   |                                |                                   |
| <i>Lepus americanus</i>                           | Snowshoe Hare               | ---                 | ---                    | S5                 |                    |                            | •                    |                             |                            |                              |                   |                   |                                |                                   |
| <i>Glaucomys volans</i>                           | Southern Flying Squirrel    | ---                 | ---                    | S4                 |                    |                            | •                    |                             |                            |                              |                   |                   |                                |                                   |
| <i>Clethrionomys gapperi</i>                      | Southern Red-backed Vole    | ---                 | ---                    | S5                 |                    |                            | •                    |                             |                            |                              |                   |                   |                                |                                   |
| <i>Condylura cristata</i>                         | Star-nosed Mole             | ---                 | ---                    | S5                 |                    |                            | •                    |                             |                            |                              |                   |                   |                                |                                   |
| <i>Mephitis mephitis</i>                          | Striped Skunk               | ---                 | ---                    | S5                 |                    |                            | •                    |                             |                            |                              |                   |                   |                                |                                   |
| <i>Didelphis virginiana</i>                       | Virginia Opossum            | ---                 | ---                    | S4                 |                    |                            | •                    |                             |                            |                              |                   |                   |                                |                                   |
| <i>Peromyscus leucopus</i>                        | White –footed Mouse         | ---                 | ---                    | S5                 |                    |                            | •                    |                             |                            |                              |                   |                   |                                |                                   |
| <i>Odocoileus virginianus</i>                     | White-tailed Deer           | ---                 | ---                    | S5                 |                    |                            | •                    |                             |                            |                              |                   |                   |                                |                                   |
| <i>Marmota monax</i>                              | Woodchuck                   | ---                 | ---                    | S5                 |                    |                            | •                    |                             |                            |                              |                   |                   |                                |                                   |
| <i>Napaeozapus insignis</i>                       | Woodland Jumping Mouse      | ---                 | ---                    | S5                 |                    |                            | •                    |                             |                            |                              |                   |                   |                                |                                   |
| <b>HERPETOZOA</b>                                 |                             |                     |                        |                    |                    |                            |                      |                             |                            |                              |                   |                   |                                |                                   |
| <i>Rana catesbeiana</i>                           | American Bullfrog           | ---                 | ---                    | S4                 |                    |                            |                      | •                           |                            |                              |                   |                   |                                |                                   |
| <i>Bufo americanus</i>                            | American Toad               | ---                 | ---                    | S5                 |                    |                            |                      | •                           |                            |                              |                   |                   |                                |                                   |
| <i>Plestiodon fasciatus</i> pop. 2                | Common Five-lined Skink*    | SC                  | SC                     | S3                 | •                  |                            |                      | •                           |                            |                              | •                 |                   |                                |                                   |
| <i>Chelydra serpentina</i>                        | Common Snapping Turtle*     | SC                  | SC                     | S4                 | •                  |                            |                      | •                           |                            |                              | •                 |                   |                                | •                                 |
| <i>Thamnophis sirtalis sirtalis</i>               | Eastern Gartersnake         | ---                 | ---                    | S5                 |                    |                            |                      | •                           |                            |                              | •                 |                   |                                |                                   |
| <i>Lampropeltis triangulum</i>                    | Eastern Milksnake           | ---                 | ---                    | S4                 |                    |                            |                      | •                           |                            |                              | •                 |                   |                                |                                   |
| <i>Sternotherus odoratus</i>                      | Eastern Musk Turtle*        | THR                 | SC                     | S3                 |                    |                            |                      |                             |                            |                              | •                 |                   |                                |                                   |
| <i>Thamnophis sauritus septentrionalis</i>        | Eastern Ribbonsnake*        | SC                  | SC                     | S3                 |                    |                            |                      | •                           |                            |                              | •                 |                   |                                |                                   |
| <i>Hyla versicolor</i>                            | Gray Treefrog               | ---                 | ---                    | S5                 |                    |                            |                      | •                           |                            |                              |                   |                   |                                |                                   |
| <i>Rana clamitans</i>                             | Green Frog                  | ---                 | ---                    | S5                 |                    |                            |                      | •                           |                            |                              |                   |                   |                                |                                   |
| <i>Chrysemys picta marginata</i>                  | Midland Painted Turtle      | ---                 | ---                    | S5                 |                    |                            |                      | •                           |                            |                              |                   |                   |                                | •                                 |
| <i>Rana pipiens</i>                               | Northern Leopard Frog       | ---                 | ---                    | S5                 |                    |                            |                      | •                           |                            |                              |                   |                   |                                |                                   |
| <i>Graptemys geographica</i>                      | Northern Map Turtle*        | SC                  | SC                     | S3                 | •                  |                            |                      | •                           |                            |                              | •                 |                   |                                |                                   |
| <i>Storeria occipitomaculata occipitomaculata</i> | Northern Red-bellied Snake  | ---                 | ---                    | S5                 |                    |                            |                      | •                           |                            |                              |                   |                   |                                |                                   |

| Scientific Name                 | Common Name                | Conservation Status |                        |                    | Information Source |                            |                      |                             |                            |                              |                   |                   |                                |                                   |
|---------------------------------|----------------------------|---------------------|------------------------|--------------------|--------------------|----------------------------|----------------------|-----------------------------|----------------------------|------------------------------|-------------------|-------------------|--------------------------------|-----------------------------------|
|                                 |                            | National            | Provincial             |                    | NHIC <sup>4</sup>  | OBBA <sup>5</sup> Square s | Mammals <sup>6</sup> | Ontario Nature <sup>7</sup> | Odonata Atlas <sup>8</sup> | Butterfly Atlas <sup>9</sup> | MNR <sup>10</sup> | IBA <sup>11</sup> | Previous Studies <sup>12</sup> | Public Observations <sup>13</sup> |
|                                 |                            | SARA <sup>1</sup>   | ESA, 2007 <sup>2</sup> | SRank <sup>3</sup> |                    |                            |                      |                             |                            |                              |                   |                   |                                |                                   |
| <i>Nerodia sipedon sipedon</i>  | Northern Watersnake        | ---                 | ---                    | S5                 |                    |                            |                      | •                           |                            |                              |                   |                   |                                |                                   |
| <i>Rana palustris</i>           | Pickerel Frog              | ---                 | ---                    | S4                 |                    |                            |                      | •                           |                            |                              |                   |                   |                                |                                   |
| <i>Opheodrys vernalis</i>       | Smooth Greensnake          | ---                 | ---                    | S4                 |                    |                            |                      | •                           |                            |                              |                   |                   |                                |                                   |
| <i>Pseudacris crucifer</i>      | Spring Peeper              | ---                 | ---                    | S5                 |                    |                            |                      | •                           |                            |                              |                   |                   |                                |                                   |
| <i>Rana sylvatica</i>           | Wood Frog                  | ---                 | ---                    | S5                 |                    |                            |                      | •                           |                            |                              |                   |                   |                                |                                   |
| LEPIDOPTERA                     |                            |                     |                        |                    |                    |                            |                      |                             |                            |                              |                   |                   |                                |                                   |
| <i>Vanessa virginiensis</i>     | American Lady              | ---                 | ---                    | S5                 |                    |                            |                      |                             |                            | •                            |                   |                   |                                |                                   |
| <i>Speyeria aphrodite</i>       | Aphrodite Fritillary       | ---                 | ---                    | S5                 |                    |                            |                      |                             |                            | •                            |                   |                   |                                |                                   |
| <i>Papilio polyxenes</i>        | Black Swallowtail          | ---                 | ---                    | S5                 |                    |                            |                      |                             |                            | •                            |                   |                   |                                |                                   |
| <i>Lycaena hyllus</i>           | Bronze Copper              | ---                 | ---                    | S5                 |                    |                            |                      |                             |                            | •                            |                   |                   |                                |                                   |
| <i>Pieris rapae</i>             | Cabbage White              | ---                 | ---                    | SNA                |                    |                            |                      |                             |                            | •                            |                   |                   |                                |                                   |
| <i>Papilio canadensis</i>       | Canadian Tiger Swallowtail | ---                 | ---                    | S5                 |                    |                            |                      |                             |                            | •                            |                   |                   |                                |                                   |
| <i>Colias philodice</i>         | Clouded Sulphur            | ---                 | ---                    | S5                 |                    |                            |                      |                             |                            | •                            |                   |                   |                                |                                   |
| <i>Erynnis lucilius</i>         | Columbine Duskywing        | ---                 | ---                    | S4                 |                    |                            |                      |                             |                            | •                            |                   |                   |                                |                                   |
| <i>Coenonympha tullia</i>       | Common Ringlet             | ---                 | ---                    | S5                 |                    |                            |                      |                             |                            | •                            |                   |                   |                                |                                   |
| <i>Amblyscirtes vialis</i>      | Common Roadside Skipper    | ---                 | ---                    | S4                 |                    |                            |                      |                             |                            | •                            |                   |                   |                                |                                   |
| <i>Cercyonis pegala</i>         | Common Wood-Nymph          | ---                 | ---                    | S5                 |                    |                            |                      |                             |                            | •                            |                   |                   |                                |                                   |
| <i>Anatrytone logan</i>         | Delaware Skipper           | ---                 | ---                    | S4                 |                    |                            |                      |                             |                            | •                            |                   |                   |                                |                                   |
| <i>Erynnis icelus</i>           | Dreamy Duskywing           | ---                 | ---                    | S5                 |                    |                            |                      |                             |                            | •                            |                   |                   |                                |                                   |
| <i>Polygonia comma</i>          | Eastern Comma              | ---                 | ---                    | S5                 |                    |                            |                      |                             |                            | •                            |                   |                   |                                |                                   |
| <i>Cupido (Everes) comyntas</i> | Eastern Tailed Blue        | ---                 | ---                    | S5                 |                    |                            |                      |                             |                            | •                            |                   |                   |                                |                                   |
| <i>Thymelicus lineola</i>       | European Skipper           | ---                 | ---                    | SNA                |                    |                            |                      |                             |                            | •                            |                   |                   |                                |                                   |
| <i>Papilio cresphontes</i>      | Giant Swallowtail          | ---                 | ---                    | S4                 |                    |                            |                      |                             |                            | •                            |                   |                   |                                |                                   |
| <i>Polygonia progne</i>         | Gray Comma                 | ---                 | ---                    | S5                 |                    |                            |                      |                             |                            | •                            |                   |                   |                                |                                   |
| <i>Speyeria cybele</i>          | Great Spangled Fritillary  | ---                 | ---                    | S5                 |                    |                            |                      |                             |                            | •                            |                   |                   |                                |                                   |
| <i>Polygonia faunus</i>         | Green Comma                | ---                 | ---                    | S4                 |                    |                            |                      |                             |                            | •                            |                   |                   |                                |                                   |
| <i>Poanes homobok</i>           | Homobok Skipper            | ---                 | ---                    | S5                 |                    |                            |                      |                             |                            | •                            |                   |                   |                                |                                   |
| <i>Hesperia sassacus</i>        | Indian Skipper             | ---                 | ---                    | S4                 |                    |                            |                      |                             |                            | •                            |                   |                   |                                |                                   |
| <i>Callophrys gryneus</i>       | Juniper Hairstreak*        | ---                 | ---                    | S2                 |                    |                            |                      |                             |                            | •                            | •                 |                   |                                |                                   |
| <i>Erynnis juvenalis</i>        | Juvenal's Duskywing        | ---                 | ---                    | S5                 |                    |                            |                      |                             |                            | •                            |                   |                   |                                |                                   |
| <i>Ancyloxypha numitor</i>      | Least Skipper              | ---                 | ---                    | S5                 |                    |                            |                      |                             |                            | •                            |                   |                   |                                |                                   |

| Scientific Name                    | Common Name                        | Conservation Status |                        |                    | Information Source |                            |                      |                             |                            |                              |                   |                   |                                |                                   |
|------------------------------------|------------------------------------|---------------------|------------------------|--------------------|--------------------|----------------------------|----------------------|-----------------------------|----------------------------|------------------------------|-------------------|-------------------|--------------------------------|-----------------------------------|
|                                    |                                    | National            | Provincial             |                    | NHIC <sup>4</sup>  | OBBA <sup>5</sup> Square s | Mammals <sup>6</sup> | Ontario Nature <sup>7</sup> | Odonata Atlas <sup>8</sup> | Butterfly Atlas <sup>9</sup> | MNR <sup>10</sup> | IBA <sup>11</sup> | Previous Studies <sup>12</sup> | Public Observations <sup>13</sup> |
|                                    |                                    | SARA <sup>1</sup>   | ESA, 2007 <sup>2</sup> | SRank <sup>3</sup> |                    |                            |                      |                             |                            |                              |                   |                   |                                |                                   |
| <i>Megisto cymela</i>              | Little Wood-Satyr                  | ---                 | ---                    | S5                 |                    |                            |                      |                             |                            | •                            |                   |                   |                                |                                   |
| <i>Boloria bellona</i>             | Meadow Fritillary                  | ---                 | ---                    | S5                 |                    |                            |                      |                             |                            | •                            |                   |                   |                                |                                   |
| <i>Aglaia milberti</i>             | Milbert's Tortoiseshell            | ---                 | ---                    | S5                 |                    |                            |                      |                             |                            | •                            |                   |                   |                                |                                   |
| <i>Nymphalis antiopa</i>           | Mourning Cloak                     | ---                 | ---                    | S5                 |                    |                            |                      |                             |                            | •                            |                   |                   |                                |                                   |
| <i>Thorybes pylades</i>            | Northern Cloudywing                | ---                 | ---                    | S5                 |                    |                            |                      |                             |                            | •                            |                   |                   |                                |                                   |
| <i>Phyciodes cocyta</i>            | Northern Crescent                  | ---                 | ---                    | S5                 |                    |                            |                      |                             |                            | •                            |                   |                   |                                |                                   |
| <i>Colias eurytheme</i>            | Orange Sulphur                     | ---                 | ---                    | S5                 |                    |                            |                      |                             |                            | •                            |                   |                   |                                |                                   |
| <i>Vanessa cardui</i>              | Painted Lady                       | ---                 | ---                    | S5                 |                    |                            |                      |                             |                            | •                            |                   |                   |                                |                                   |
| <i>Polygonia interrogationis</i>   | Question Mark                      | ---                 | ---                    | S5                 |                    |                            |                      |                             |                            | •                            |                   |                   |                                |                                   |
| <i>Vanessa atalanta</i>            | Red Admiral                        | ---                 | ---                    | S5                 |                    |                            |                      |                             |                            | •                            |                   |                   |                                |                                   |
| <i>Glaucopsyche lygdamus</i>       | Silvery Blue                       | ---                 | ---                    | S5                 |                    |                            |                      |                             |                            | •                            |                   |                   |                                |                                   |
| <i>Limenitis archippus</i>         | Viceroy                            | ---                 | ---                    | S5                 |                    |                            |                      |                             |                            | •                            |                   |                   |                                |                                   |
| <i>Limenitis arthemis astyanax</i> | White Admiral (Red-spotted Purple) | ---                 | ---                    | S5                 |                    |                            |                      |                             |                            | •                            |                   |                   |                                |                                   |
| <i>Danaus plexippus</i>            | Monarch*                           | ---                 | SC                     | S2N, S4B           |                    |                            |                      |                             |                            | •                            | •                 |                   |                                |                                   |
| <i>Pieris oleracea</i>             | Mustard White                      | ---                 | ---                    | S4                 |                    |                            |                      |                             |                            | •                            |                   |                   |                                |                                   |
| <b>ODONATA</b>                     |                                    |                     |                        |                    |                    |                            |                      |                             |                            |                              |                   |                   |                                |                                   |
| <i>Plathemis lydia</i>             | Common Whitetail                   | ---                 | ---                    | S5                 |                    |                            |                      |                             | •                          |                              |                   |                   |                                |                                   |
| <i>Leucorrhinia intacta</i>        | Dot-tailed Whiteface               | ---                 | ---                    | S5                 |                    |                            |                      |                             | •                          |                              |                   |                   |                                |                                   |
| <i>Calopteryx maculata</i>         | Ebony Jewelwing                    | ---                 | ---                    | S5                 |                    |                            |                      |                             | •                          |                              |                   |                   |                                |                                   |
| <i>Ischnura verticalis</i>         | Eastern Forktail                   | ---                 | ---                    | S5                 |                    |                            |                      |                             | •                          |                              |                   |                   |                                |                                   |
| <i>Erythemis simplicicollis</i>    | Eastern Pondhawk                   | ---                 | ---                    | S5                 |                    |                            |                      |                             | •                          |                              |                   |                   |                                |                                   |
| <i>Enallagma ebrium</i>            | Marsh Bluet                        | ---                 | ---                    | S5                 |                    |                            |                      |                             | •                          |                              |                   |                   |                                |                                   |
| <i>Enallagma signatum</i>          | Orange Bluet                       | ---                 | ---                    | S4                 |                    |                            |                      |                             | •                          |                              |                   |                   |                                |                                   |
| <i>Argia moesta</i>                | Powdered Dancer                    | ---                 | ---                    | S5                 |                    |                            |                      |                             | •                          |                              |                   |                   |                                |                                   |
| <i>Epitheca princeps</i>           | Prince Baskettail                  | ---                 | ---                    | S5                 |                    |                            |                      |                             | •                          |                              |                   |                   |                                |                                   |
| <i>Enallagma antennatum</i>        | Rainbow Bluet                      | ---                 | ---                    | S4                 |                    |                            |                      |                             | •                          |                              |                   |                   |                                |                                   |
| <i>Enallagma geminatum</i>         | Skimming Bluet                     | ---                 | ---                    | S4                 |                    |                            |                      |                             | •                          |                              |                   |                   |                                |                                   |
| <i>Libellula incesta</i>           | Slaty Skimmer                      | ---                 | ---                    | S4                 |                    |                            |                      |                             | •                          |                              |                   |                   |                                |                                   |
| <i>Enallagma exulans</i>           | Stream Bluet                       | ---                 | ---                    | S5                 |                    |                            |                      |                             | •                          |                              |                   |                   |                                |                                   |
| <i>Didymops transversa</i>         | Stream Cruiser                     | ---                 | ---                    | S4                 |                    |                            |                      |                             | •                          |                              |                   |                   |                                |                                   |
| <i>Libellula pulchella</i>         | Twelve-spotted Skimmer             | ---                 | ---                    | S5                 |                    |                            |                      |                             | •                          |                              |                   |                   |                                |                                   |



| Scientific Name                  | Common Name               | Conservation Status |                        |                    | Information Source |                            |                      |                             |                            |                              |                    |                   |                                |                                   |
|----------------------------------|---------------------------|---------------------|------------------------|--------------------|--------------------|----------------------------|----------------------|-----------------------------|----------------------------|------------------------------|--------------------|-------------------|--------------------------------|-----------------------------------|
|                                  |                           | National            | Provincial             |                    | NHIC <sup>4</sup>  | OBBA <sup>5</sup> Square s | Mammals <sup>6</sup> | Ontario Nature <sup>7</sup> | Odonata Atlas <sup>8</sup> | Butterfly Atlas <sup>9</sup> | MNRF <sup>10</sup> | IBA <sup>11</sup> | Previous Studies <sup>12</sup> | Public Observations <sup>13</sup> |
|                                  |                           | SARA <sup>1</sup>   | ESA, 2007 <sup>2</sup> | SRank <sup>3</sup> |                    |                            |                      |                             |                            |                              |                    |                   |                                |                                   |
| <i>Argia fumipennis violacea</i> | Violet Dancer             | ---                 | ---                    | S5                 |                    |                            |                      |                             | •                          |                              |                    |                   |                                |                                   |
| <i>Sympetrum obtrusum</i>        | White-faced Meadowhawk    | ---                 | ---                    | S5                 |                    |                            |                      |                             | •                          |                              |                    |                   |                                |                                   |
| <i>Libellula luctuosa</i>        | Widow Skimmer             | ---                 | ---                    | S5                 |                    |                            |                      |                             | •                          |                              |                    |                   |                                |                                   |
| <b>MOLLUSCA</b>                  |                           |                     |                        |                    |                    |                            |                      |                             |                            |                              |                    |                   |                                |                                   |
| <i>Vertigo elatior</i>           | Tapered Vertigo*          | ---                 | ---                    | S2S3               | •                  |                            |                      |                             |                            |                              |                    |                   |                                |                                   |
| <i>Vertigo nylanderi</i>         | Deep-throat Vertigo       | ---                 | ---                    | SH                 | •                  |                            |                      |                             |                            |                              |                    |                   |                                |                                   |
| <i>Vertigo paradoxa</i>          | Classification Uncertain* | ---                 | ---                    | S2S3               | •                  |                            |                      |                             |                            |                              |                    |                   |                                |                                   |

<sup>1</sup>*Species at Risk Act*; <sup>2</sup>*Endangered Species Act*; <sup>3</sup>SRank Code (see overview of codes below); <sup>4</sup>MNRF NHIC Database; <sup>5</sup>Ontario Breeding Bird Atlas; <sup>6</sup>Dobbyn (1994);<sup>7</sup>Ontario Nature (2010) Ontario Reptile and Amphibian Atlas; <sup>8</sup>Ontario Odonata Atlas; <sup>9</sup>Toronto Entomologists Association (2013) Ontario Butterfly Atlas Online; <sup>10</sup>MNRF Species at Risk Online Mapping, or MNRF Correspondence; <sup>11</sup>Important Bird Areas; <sup>12</sup>Previous Studies (as referenced in the NHA Records Review Report); <sup>13</sup>Observations submitted by local landowners. For all codes, please see **Appendix C2**.  
 • denotes occurrence record and/or project location includes species range; --- denotes no information, no status or not applicable; \* denotes Species of Conservation Concern;

*Note that some Species at Risk listed as Threatened or Endangered on Ontario Regulation 230/08 are not included in this table. For all codes, please see overview below.*