

Report

CarbonFree Rainy River - Revised Natural Heritage
Assessment

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Table of Concordance

The following concordance table cross-references the contents of this Natural Heritage Assessment with requirements identified in O. Reg. 359/09 so that the information can be easily found within this report.

O. Reg. 359/09 Section Reference	O. Reg. 359/09 Requirement	Natural Heritage Report Section
Section 25	Conduct a Natural Heritage Records Review	Section 2
Section 26	Conduct a Natural Heritage Site Investigation	Section 3
Section 27	Determine if natural features are significant.(Evaluation of Significance)	Section 4
Section 28	Applicant Attestation	Forthcoming
Section 38(2)	Class 3 solar facility projects cannot be located within 50 m of a provincially significant wetland, an ANSI (earth science or life science), a significant woodland, significant wildlife habitat, provincial park, or conservation reserve, unless an Environmental Impact Study is prepared in accordance with the Natural Heritage Assessment Guide.	Section 5

Glossary

ANSI	Area of Natural and Scientific Interest
APRD	Approvals and Permitting Requirements Document
CLUPA	Ontario Crown Land Use Policy Atlas
COSEWIC	Committee on the Status of Endangered Wildlife in Canada
cSWH	Candidate Significant Wildlife Habitat
EC	Environment Canada
ELC	Ecological Land Classification
EIS	Environmental Impact Study
EoS	Evaluation of Significance
EPA	Environmental Protection Act
ESA	Endangered Species Act
IBA	Important Bird Areas
IESO	Independent Electricity System Operator
kW	Kilowatt
LIO	Land Information Ontario
MBCA	Migratory Birds Convention Act
MNR	Ministry of Natural Resources
MECP	Ministry of Environment, Conservation and Parks
NHA	Natural Heritage Assessment
NHAG	Natural Heritage Assessment Guide
NHIC MaM	Natural Heritage Information Centre Make a Map
NHIC	Natural Heritage Information Center
NHRM	Natural Heritage Reference Manual
OBBA	Ontario Breeding Bird Atlas
OP	Official Plans
ORAA	Ontario Reptile and Amphibian Atlas
PSW	Provincially Significant Wetland
PV	Photovoltaic
REA	Renewable Energy Approval
SAR	Species at Risk
SARA	Species at Risk Act
SARO	Species at Risk in Ontario
SoCC	Species of Conservation Concern
SWH	Significant Wildlife Habitat
SWHTG	Significant Wildlife Habitat Technical Guide

Table of Contents

Table of Concordance	ii
1. Introduction.....	1-1
1.1 REA Regulation – Natural Heritage Assessment	1-1
1.2 NHA Approach.....	1-2
1.2.1 Provincial Plan Areas.....	1-2
1.2.2 Provincial Parks and Conservation Reserves	1-2
1.2.3 Natural Features	1-3
1.3 Report Format.....	1-5
2. Records Review	2-1
2.1 REA Regulation – NHA Records Review	2-1
2.2 Records Review Methodology	2-2
2.2.1 Ministry of Natural Resources Records	2-2
2.2.2 Township of Chapple Records (Accessed January 27, 2026)	2-3
2.2.3 Atlas of the Mammals of Ontario (Accessed January 27, 2026)	2-3
2.2.4 Ontario Reptile and Amphibian Atlas (Accessed January 27, 2026)	2-3
2.2.5 Important Bird Areas of Canada (Accessed January 27, 2026)	2-4
2.2.6 Ontario Breeding Bird Atlas (Accessed January 27, 2026)	2-4
2.2.7 Ontario Butterfly Atlas (Accessed January 27, 2026)	2-4
2.3 Records Review Results.....	2-4
2.3.1 Provincial Plan Areas.....	2-6
2.3.2 Provincial Parks and Conservation Reserves	2-6
2.3.3 Natural Features	2-7
2.4 Summary of Records Review	2-11
3. Site Investigation and Targeted Studies	3-13
3.1 Regulatory Requirements	3-13
3.2 Site Investigation Methodology.....	3-14
3.2.1 Site Investigation Type	3-14
3.2.2 Field Study Methodologies	3-14
3.2.3 Wildlife Habitat Studies.....	3-16
3.3 Site Investigation Results	3-21
3.3.1 Site Investigation Details	3-21
3.3.2 Breeding Bird Survey Results.....	3-22
3.3.3 Grassland Bird Survey Results.....	3-25
3.3.4 Anuran Call Survey Results.....	3-26
3.3.5 Bat Maternity Roost and Monitoring Results	3-27
3.3.6 Ecological Land Classification	3-28
3.3.7 Confirmation and Assessment of Natural Features.....	3-30
3.4 Summary of Site Investigation	3-56
3.4.1 Candidate Significant Natural Features.....	3-56
3.4.2 Generalized Significant Wildlife Habitat.....	3-56
3.4.3 Site Investigation Determinations and Corrections to the Records Review	3-63

4. Evaluation of Significance	4-1
4.1 Regulatory Requirements	4-1
4.2 Evaluation of Significance Methodology	4-1
4.2.1 Evaluation of Significance Details	4-1
4.3 Evaluation of Candidate Significant Natural Features	4-1
4.3.1 Amphibian Breeding Habitat (Wetland)	4-1
4.3.2 Bald Eagle and Osprey Nesting, Foraging and Perching Habitat	4-2
4.3.3 Additional Potential Significant Wildlife Habitat	4-2
4.3.4 Evaluation of Wetland Significance	4-2
4.4 Summary of Evaluation of Significance	4-2
5. Environmental Impact Study	5-1
5.1 Regulatory Requirements	5-1
5.2 Significant Natural Features	5-1
5.3 Existing Conditions of Significant Natural Features	5-3
5.3.1 Bald Eagle Nest Feature	5-3
5.3.2 Bat Maternity Roosting Habitat	5-3
5.3.3 Species of Conservation Concern	5-3
5.3.4 Bats	5-4
5.4 Project Components and Activities	5-5
5.4.1 Construction	5-5
5.4.2 Operation and Maintenance	5-6
5.4.3 Decommissioning	5-7
5.5 Environmental Effects Assessment	5-7
5.5.1 Species of Conservation Concern	5-8
5.5.2 Bat Maternity Roost Habitat	5-8
5.5.3 Bald Eagle Nesting Habitat	5-8
5.5.4 Potential Environmental Effects and Mitigation Measures	5-9
5.6 Environmental Effects Monitoring Plan	5-13
6. NHA Conclusions	6-1
7. References	7-1

List of Tables

Table 2-1: Summary of Data Reviewed for Provincial Plan Areas	2-6
Table 2-2: Summary of Data Reviewed for Provincial Parks and Conservation Reserves	2-6
Table 2-3: Summary of Data Reviewed for Earth Science and Life Science ANSIs	2-7
Table 2-4: Summary of Data Reviewed for Wetlands	2-8
Table 2-5: Summary of Data Reviewed for Wildlife Habitat	2-9
Table 2-6: Summary of Species of Conservation Concern	2-10
Table 2-7: Summary of the Records Review Determinations for the Rainy River Solar Project	2-12
Table 3-1: Site Investigation Requirements under the REA Regulation	3-13
Table 3-2: Site Investigation Details – Dates, Times and Weather Conditions	3-21
Table 3-3: Breeding Bird Survey Results	3-24
Table 3-4: Grassland Bird Survey Results Summary	3-25

Table 3-5:	Anuran Survey Results Summary.....	3-26
Table 3-6:	Bat Acoustic Results Summary	3-27
Table 3-7:	Summary of ELC Communities on and Within 50 m of the Project Location	3-29
Table 3-8:	cSWH Assessment for Seasonal Concentration Areas of Animals	3-32
Table 3-9:	cSWH Assessment for Rare Vegetation Communities.....	3-37
Table 3-10:	cSWH Assessment for Specialized Habitat for Wildlife	3-43
Table 3-11:	cSWH Assessment for Habitat for Species of Conservation Concern	3-48
Table 3-12:	cSWH Assessment for Animal Movement Corridors	3-55
Table 3-13:	Candidate Significant Natural Features Identified During the Site Investigation	3-56
Table 3-14:	Summary of Corrections Required to the Records Review and Determinations Made as a Result of the Site Investigation	3-63
Table 5-1:	Significant Natural Features Identified in the NHA to be Assessed in the EIS.....	5-2
Table 5-2:	General Description of Construction Activities.....	5-5
Table 5-3:	Environmental Effects Analysis Criteria.....	5-10
Table 5-4:	Potential Environmental Effects and Mitigation	5-11
Table 5-5:	Environmental Effects Monitoring Plan.....	5-14

List of Figures

Figure 2-1:	Site Investigation Desktop Wetlands	2-5
Figure 3-1:	Site Investigation Results.....	3-19
Figure 3-2:	Site Investigation Confirmed Wetlands	3-23
Figure 4-1:	Evaluation of Significance Results.....	4-3

List of Appendices

Appendix A	Species Identified in the Records Review
Appendix B	Qualified Persons and Attestation

1. Introduction

CarbonFree Rainy River Ltd. (CarbonFree) is proposing to develop an up to 60-megawatt (MW) Class 3 solar photovoltaic (PV) project (“the Project”) adjacent to Highway 71 and Mather Rd, in the Township of Chapple, Ontario, approximately 40 km northwest of Fort Frances. The Project is located in Ecodistrict 5S within the Ministry of Natural Resources (MNR) Rainy River District.

The Project will require a Renewable Energy Approval (REA) under Ontario Regulation (O. Reg.) 359/09 (as amended in May 2016) – Renewable Energy Approvals under Part V.0.1 of the *Environmental Protection Act* (EPA) (herein referred to as the REA Regulation). Construction is anticipated to start in early 2027, pending receipt of requisite permits and approvals.

This Natural Heritage Assessment (NHA) report has been prepared in partial fulfillment of the REA requirements, specifically those outlined in Sections 24 through 28, 37 and 38 of the REA Regulation, and in accordance with the Natural Heritage Assessment Guide (NHAG) (MNR, 2026). In accordance with Part B2 of the NHAG, the applicant must submit a signed and dated attestation under subsection 28 (2) of the Regulation to accompany the REA application. The NHA report and completed attestation will be included as part of the overall REA application package to the Ministry of Environment, Conservation and Parks (MECP). The following sections provide an overview of the REA Regulation related to the NHA, study approach, and report format.

1.1 REA Regulation – Natural Heritage Assessment

The REA Regulation prescribes the requirements for renewable energy projects based on the class of solar facility. As set out in the table of Section 4 of the REA Regulation, the Project meets the requirements of a Class 3 solar facility (i.e., nameplate capacity >10 kW).

The NHA requirements, as outlined in Section 24 of the REA Regulation, consist of a Records Review (Section 25), Site Investigation (Section 26), and where applicable, an Evaluation of Significance (EoS) (Section 27) to confirm the significance of features where the Project Location¹ is in or within 50 m of a provincial park, conservation reserve or natural feature. An Environmental Impact Study (EIS) [Subsections 37(2)(a) and 38(2)(b)] is required where a significant or provincial significant natural feature is identified. An applicant attestation signed and dated by the qualified person [Section 28, Subsections 37(2)(b)(c) and 38(2)(b)(c)] is also required as part of the application for the issuance of a REA, in accordance with Part B2 of the NHAG (MNR, 2026).

¹ “Project Location” is defined in the REA Regulation as “a part of land and all or part of any building or structure in, on or over which a person is engaging in or proposes to engage in the project and any air space in which a person is engaging in or proposes to engage in the project.”

The REA Regulation defines Natural Features as all or part of the following:

- Area of Natural and Scientific Interest (ANSI) (earth science);
- ANSI (life science);
- Wetland (coastal wetland, northern wetland and southern wetland);
- Wildlife Habitat; and
- Woodland. Note that as per the definition laid out within the REA, Woodland is defined as being located south and east of the Canadian Shield and is therefore not applicable to this Project Location.

1.2 NHA Approach

The following sections include a description of the features that need to be confirmed in or within 50 m of the Project Location. An assessment of Species at Risk² (SAR) is not part of the NHA. Provincially protected SAR will be discussed in the Approvals and Permitting Requirements Document (APRD) and MECP *Species Conservation Act* (SCA) permitting processes separately.

Species listed under Schedule 1 of the Species at Risk Act (SARA) or on the Protected Species in Ontario (PSO) list under the SCA, 2025 and/or are identified as at risk (Special Concern or higher) by the Committee on the Status of Species at Risk in Ontario (COSSARO), are considered Species of Conservation Concern (SoCC) for the purposes of this report. Consultation with Environment and Climate Change Canada (ECCC) may be required for species listed in Schedule 1, including aquatic species and migratory birds listed in the *Migratory Birds Convention Act* (MBCA), 1994 and that are also listed in Schedule 1.

1.2.1 Provincial Plan Areas

A Records Review was completed to determine whether the Project Location is in or within 50 m of a provincial plan area, i.e., Greenbelt Plan, Oak Ridges Moraine Conservation Plan (ORMCP), Niagara Escarpment Plan (NEP), and Lake Simcoe Protection Plan.

1.2.2 Provincial Parks and Conservation Reserves

Provincial Parks and conservation reserves are protected under the *Provincial Parks and Conservation Reserves Act, 2006*. Renewable energy projects are generally prohibited within these areas, unless they meet the exceptions listed in Section 19 of the Act. Projects that meet the requirements of the *Provincial Parks and Conservation Reserves Act* are subject to an NHA. The confirmation on the presence/absence of provincial parks and conservation reserves on and within 120 m of the Project Location is the responsibility of the MECP.

² SAR include species that are designated as Extirpated, Endangered or Threatened and listed on the PSO List (O. Reg. 60/26) made under the SCA, 2025.

This NHA report reviews whether the Project Location is in or within 50 m of a provincial park or conservation reserve and a determination will be made in the Records Review (Section 2). If there are no Provincial Parks or Conservation Reserves identified during the Records Review, no further consideration or verification of presence/absence is required.

1.2.3 **Natural Features**

The REA Regulation defines natural features to include all or part of an ANSI (Earth Science or Life Science), wetland (Coastal, Northern or Southern), woodland, and wildlife habitat. As part of the NHA, an assessment and determination on the presence/absence and significance (if applicable) of a natural feature in or within 50 m of the Project Location is required. Each of the natural features to be assessed is described in the subsequent sections.

1.2.3.1 *Area of Natural and Scientific Interest*

MNR recognizes two types of ANSIs based on natural heritage values related to protection, scientific study or education: Earth Science ANSI and Life Science ANSI. MNR is responsible for identifying and assessing whether they are provincially, regionally, or locally significant. Only provincially significant ANSIs are protected through the REA Regulation.

This NHA report reviews whether the Project Location is in or within 50 m of an Earth Science or Life Science ANSI and a determination made in the Records Review (Section 2). As a general practice, all ANSIs regardless of designation will be identified as part of this NHA and MNR will be consulted for further guidance. If there are no ANSIs identified during the Records Review, no further consideration or verification of presence/absence is required.

1.2.3.2 *Wetland*

The REA Regulation defines wetland as “*land such as a swamp, marsh, bog or fen, other than land that is being used for agricultural purposes and no longer exhibits wetland characteristics, that, is seasonally or permanently covered by shallow water or has the water table close to or at the surface, and has hydric soils and vegetation dominated by hydrophytic or water-tolerant plants.*” The REA Regulation further distinguishes a wetland as a:

- **Coastal Wetland** – defined in the REA Regulation as “*a wetland that is located on Lake Ontario, Lake Erie, Lake Huron, Lake Superior, Lake St. Clair, St. Mary’s River, St. Clair River, Detroit River, Niagara River or St. Lawrence River; or on a tributary to any of these waterbodies and, either in whole or in part, downstream of a line located two kilometers (km) upstream of the 1:100-year floodline.*”
- **Northern Wetland** – defined in the REA Regulation as “*a wetland located north of the northern limit of Ecoregions 5E, 6E and 7E as shown in Figure 1 in the Provincial Planning Statement issued under Section 3 of the Planning Act.*”
- **Southern Wetland** – defined in the REA Regulation as “*a wetland located south of the northern limit of Ecoregions 5E, 6E and 7E as shown in Figure 1 in the Provincial Planning Statement issued under Section 3 of the Planning Act.*”

The Northern Wetland definition is applicable to this Project Location. This NHA report reviews whether the Project Location is in or within 50 m of a wetland. A determination will be made in the Records Review (Section 2) and Site Investigation (Section 3) and whether an EoS and EIS are required.

1.2.3.3 Wildlife Habitat

The REA Regulation defines wildlife habitat as “*an area where plants, animals and other organisms live or have the potential to live and find adequate amounts of food, water, shelter and space to sustain their population, including an area where a species concentrates at a vulnerable point in its annual or life cycle and an area that is important to a migratory or non-migratory species.*”

The MNR provides specific guidance on identifying and assessing wildlife habitat in the Significant Wildlife Habitat (SWH) Criteria Schedules. No specific Ecoregion Schedule currently exists for Ecoregion 5S and therefore the Significant Wildlife Habitat Technical Guide (SWHTG) has been referenced with SWH criteria from Ecoregion 3E (MNR, 2015) and 3W (MNR, 2017) used to supplement this material to assess the site for Candidate SWHs and in the creation of the EoS.

A brief overview of the wildlife habitats to be considered in the NHA is provided below, with more specific details provided in Section 3.3.7.2.

The MNR recognizes five main categories of wildlife habitat, each with several wildlife habitat types (further described in Section 3.3.7.2).

- **Seasonal Concentration Areas of Animals** – Defined as “*areas where animals occur in relatively high densities for the species at specific periods in their life cycles and/or in particular seasons*” and areas that are “*localized and relatively small in relation to the area of habitat used at other times of the year*” (MNR, 2010).
- **Rare Vegetation Communities** – Defined as “*areas that contain a provincially rare vegetation community and areas that contain a vegetation community that is rare within the planning area*” (MNR, 2010).
- **Specialized Habitat for Wildlife** – Defined as “*areas that support wildlife species that have highly specific habitat requirements, areas with high species and community diversity, and areas that provide habitat that greatly enhances species’ survival*” (MNR, 2010).
- **Habitat for Species of Conservation Concern** – Defined as “*habitats of species listed in Schedule 1 under the federal SAR Act and species included in Protected Species in Ontario List under the SCA as well as any species currently classified Committee on the COSSARO.*”

More specifically, SoCC include the following:

- ♦ **Globally Rare Species** – These species are assessed by NatureServe and assigned a global conservation status rank (G-rank) of G1 to G3.

- ♦ **Nationally Rare Species** – These species are designated by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) as Endangered or Threatened and not protected in regulation under the SCA.
- ♦ **Provincially Rare Species** – These species are designated by the MNR and assessed under two categories: species listed as Special Concern on the Species at Risk in Ontario (SARO) List; and species that are assigned a provincial (i.e., sub-national) conservation status rank of S1 to S3 and are not on the SARO List. There are species that can be found in both categories.
- ♦ **Regionally Rare Species** – These species are not assigned a formal designation; however, they have been recognized as declining within a planning jurisdiction by government and/or non-government authorities.
- ♦ **Conservation Priority Species** – These include priority species that are recognized in government and/or non-government conservation plans and assigned a conservation objective.
- **Animal Movement Corridors** – defined as “*elongated, naturally vegetated parts of the landscape used by animals to move from one habitat to another*” (MNR, 2000).

1.2.3.4 Woodland

The REA Regulation defines woodland as “a *treed area, woodlot or forested area, other than a cultivated fruit or nut orchard or a plantation established for the purpose of producing Christmas trees*”, that is located in Ecoregions 6E and 7E as shown in the Provincial Planning Statement issued under Section 3 of the *Planning Act* (King’s Printer for Ontario, 2024).

As this Project Location falls outside of the applicable definition of a woodland, this will not be considered throughout this NHA report.

1.3 Report Format

The report format is provided below, which includes a summary of the regulatory requirements for each section.

- Records Review – Section 2.
- Site Investigation – Section 3.
- Evaluation of Significance (EoS) – Section 4.
- Environmental Impact Study (EIS) – Section 5.

2. Records Review

A Records Review is required as part of the NHA, as outlined in Subsection 25(1) of the REA Regulation. A search for records is required to determine if the Project Location is on or within 50 m of a Provincial Park, Conservation Reserve and Natural Feature (as defined in Section 1.2).

Publicly available records maintained by government and non-government sources were reviewed. Key information sources included: MNR District of Rainy River, Township of Chapple, and other non-government organizations.

The following sources were considered but not discussed further as they are not within the jurisdiction of the Project and do not apply to this Project: Municipal Planning Authority, Local Planning Board, Local Roads Board, Local Services Board, Niagara Escarpment Commission, Greenbelt Plan, and ORMCP.

A compilation of all species identified in the Records Review is provided in Appendix A, and includes the source where the information was obtained for each species, scientific names, conservation rank (global, provincial, regional, and priority species) and at-risk status (national and provincial).

An attestation regarding the completeness of the required information and activities relevant to the Records Review were completed by a qualified person(s) as set out in the NHAG and were undertaken according to requirements, criteria and procedures set out in O. Reg. 359/09 under the EPA and the NHAG for Renewable Energy Projects is available in Appendix B. Associated qualifications of the staff responsible for completing the work is also available in Appendix B.

2.1 REA Regulation – NHA Records Review

Section 25 of the REA Regulation requires proponents of Class 3 solar projects to conduct a Records Review and prepare a report summarizing the results and determinations made whether the Project Location is in or within 50 m of a:

- Provincial Park or Conservation Reserve; and
- Natural Feature.

The following sections have been prepared to meet these requirements and include:

- The methodology used to complete the Records Review, including a summary of the information sources and data analyzed;
- Results of the Records Review; and
- Summary of the determinations made.

2.2 Records Review Methodology

The following background documents and information sources were reviewed for records related to Provincial Parks, Conservation Reserves and Natural Features on and within 50 m of the Project Location. Hatch has queried available desktop resources as described below. Where spatial data is available Hatch has queried areas extending a minimum of 1 km from the Project Location.

2.2.1 Ministry of Natural Resources Records

The following information sources from the MNR were reviewed for records related to Provincial Parks, Conservation Reserves, and Natural Features within 1 km of the Project Location:

- **Ontario Geohub Mapping (Accessed January 27, 2026)** – Ontario Geohub data is maintained by the MNR and provides key provincial geospatial data about Ontario. Shapefiles obtained from the Ontario Geohub open datasets were obtained and used to prepare a map showing the presence/absence of Provincial Policy Plan areas, Provincial Parks, Conservation Reserves, and Natural Features on and within 1 km of the Project Location (Rainy River District map layer). The data layers reviewed are provided in Section 2.3. At a minimum the following Ontario Geohub datasets were reviewed:
 - ♦ Wildlife Value Areas and Sites;
 - ♦ Significant Ecological Areas;
 - ♦ Wild Rice Stand;
 - ♦ Forest Resource Inventory;
 - ♦ Areas of Natural and Scientific Interest;
 - ♦ Provincially Tracked Species;
 - ♦ Fish Activity Area and Aquatic Resource Area datasets;
 - ♦ Wetlands; and
 - ♦ Natural Heritage Systems.
- **Natural Heritage Information Centre Make a Map (NHIC MaM) (Accessed January 27, 2026)** – The NHIC MaM is a web application that identifies
 - ♦ Provincial Parks.
 - ♦ Conservation Reserves.
 - ♦ Natural Features (i.e., ANSIs, wetlands, woodlands, natural heritage systems related to provincial policy plan areas, such as the Niagara Escarpment, Oak Ridges Moraine and Greenbelt Plans).

- ◆ Occurrences of plant communities, wildlife concentration areas and natural areas, as well as species of conservation concern (i.e., rare species). As mentioned in Section 1.2, SAR are not discussed in this NHA and will be assessed separately in the APRD. The NHIC data is organized into 1 km² map squares. The map squares reviewed and that overlap the Project Location, include: 15VP3396, 15VP3397, 15VP3398. Species identified in these map squares (excluding SAR) are considered as part of the Records Review and listed in Appendix A.
- **Ontario Crown Land Use Policy Atlas (Accessed January 27, 2026)** – The *Ontario Crown Land Use Policy Atlas* (CLUPA) is an interactive web browser that provides boundaries of crown land use areas and associated land use policies. This interactive map was used to determine the presence/absence of crown land within 1 km of the Project Location.

2.2.2 ***Township of Chapple Records (Accessed January 27, 2026)***

The Project Location is situated within the Township of Chapple. The Official Plans (OP) for the Township were reviewed.

- **Township of Chapple Official Plan (Amended in 2013)** – The Township's Natural Heritage Features, Cultural Heritage Resources and Development Constraints were reviewed.
- **Township of Chapple Official Plan – Endangered and Threatened Species.**
- **Township of Chapple Official Plan (Schedule C)** – Natural/Cultural Features and Development Constraints.
- **Township of Chapple Official Plan (Ministerial Approval 2023)** – The Schedules and Figures were reviewed and include:
 - ◆ Schedule A – Land Use Designations;
 - ◆ Schedule B – Wellhead Protection Area; and
 - ◆ Schedule C – Natural/Cultural Heritage and Development.

2.2.3 ***Atlas of the Mammals of Ontario (Accessed January 27, 2026)***

A review of the *Atlas of the Mammals of Ontario* (Dobbyn, 1994) was completed in support of the wildlife habitat assessment. A search was completed for mammals whose ranges overlap with the Project and that are listed in the SWH Criteria Schedules for Ecoregion 3E (MNR, 2015) and 3W (MNR, 2017) or that are considered to be a species of conservation concern. Species considered as part of the Records Review are listed in Appendix A.

2.2.4 ***Ontario Reptile and Amphibian Atlas (Accessed January 27, 2026)***

A review of the *Ontario Reptile and Amphibian Atlas* (Ontario Nature, 2024) and interactive range maps were completed. The Atlas provides known ranges of reptiles and amphibian species in Ontario based on historic and current species occurrences. The information is displayed in 10 x 10 km² map squares. The species documented within map square 15VP39

which overlaps the Project Location were included in the Records Review and considered in respect of the wildlife habitat assessment. Species documented in the map squares are listed in Appendix A.

2.2.5 Important Bird Areas of Canada (Accessed January 27, 2026)

The Important Bird Areas (IBA) Canada website was reviewed to determine whether any IBAs are in or within 1 km of the Project Location. IBAs are discrete sites that support specific groups of birds such as threatened birds, large groups of birds, and birds restricted by range or by habitat. No IBAs were located within the Project footprint or within 1 km of the Project Location.

2.2.6 Ontario Breeding Bird Atlas (Accessed January 27, 2026)

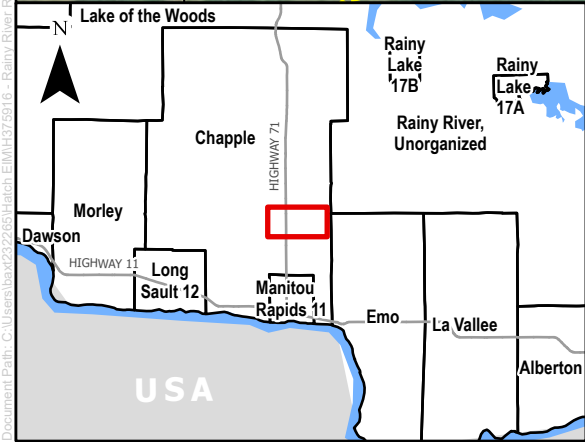
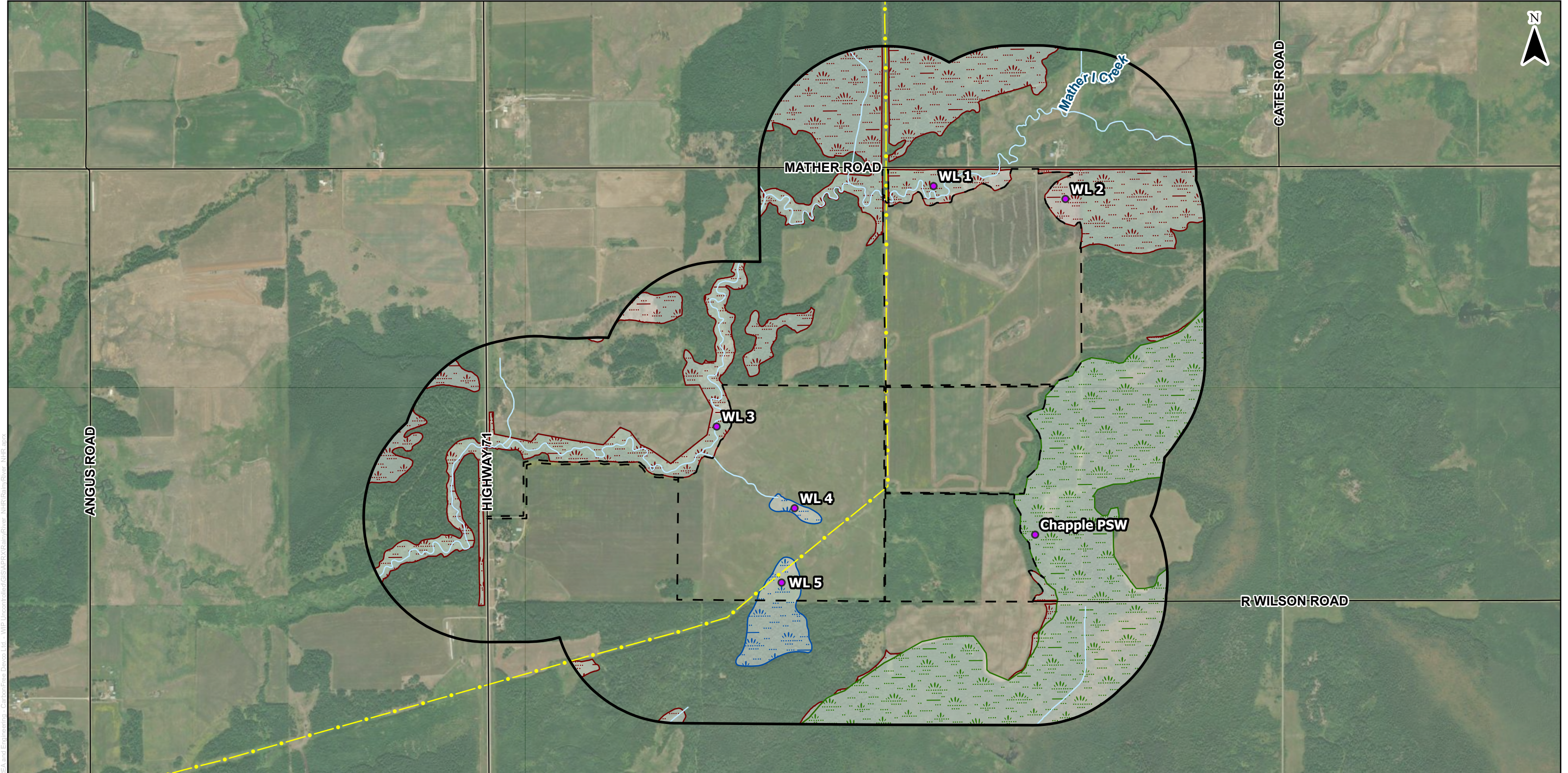
The Ontario Breeding Bird Atlas (OBBA) (Birds Canada *et al.*, 2026) was reviewed to determine which species have the potential to occur on or within 1 km of the Project Location. The OBBA provides a list of bird species that have been observed within a 10 x 10 km² area during surveys completed between 1981 to 1985, 2001 to 2005 and 2021 to 2025. Species that were documented between 2001 and 2005 were considered as part of the Records Review. The OBBA map square that overlaps the Project Location is 15TVP39. The species observed within this map square (between 2001 and 2005) are considered as part of the wildlife habitat assessment and listed in Appendix A.

2.2.7 Ontario Butterfly Atlas (Accessed January 27, 2026)

The Ontario Butterfly Atlas was reviewed to determine which species have the potential to occur on or within 1 km of the Project Location. The Ontario Butterfly Atlas provides a list of butterfly species that have been observed within a 10 x 10 km² map square. The map square that overlaps the Project Location is 15VP39. The species observed within this map square are considered as part of the wildlife habitat assessment and listed in Appendix A.

2.3 Records Review Results

A Records Review was conducted in order to determine the presence/absence of Provincial Parks, Conservation Reserves and Natural Features in or within 1 km of the Project Location. The results of the Records Review and determinations made are provided in the subsequent sections and illustrated in Figure 2-1.



LEGEND

- Wetland
- Road
- Transmission Line
- Watercourse
- Project Location
- Study Area (500m Buffer)
- Chapple Official Plan Wetland
- Unevaluated Wetland (MNR)
- Provincially Significant Wetland (MNR)

NOTES:

- Produced by Hatch, contains information licensed under the Open Government Licence – Ontario
- Spatial referencing: NAD 1983 UTM Zone 15N
- Chapple Official Plan Wetlands digitized from the Township of Chapple's Final Official Plan, 2013

0 250 500 1,000 m

1:15,000

PROJECT:		CarbonFree Rainy River Project – Natural Heritage Assessment			
FIGURE TITLE:		Site Investigation Desktop Wetlands			
CLIENT:		CarbonFree Rainy River LTD			
DWG BY:	CHK BY:	FIG NO.:	REV NO.:		
V. BAXTER	C. SEHL				
DATE:	PAGE:				
13/04/26	1	2-1	1		

2.3.1 Provincial Plan Areas

The Project Location is not in or within a Provincial Plan area (i.e., NEP, Greenbelt Plan, ORMCP), as shown in Table 2-1. Verifying the results of the Records Review as it relates to policy plan areas is not required as the Project is outside of these plan areas. Therefore, no further consideration or assessment is required in this NHA as it relates to the NEP, Greenbelt Plan, ORMCP and associated Natural Features. Generally the Project Location falls within the Agricultural Heartland (G2572) General Land Use areas.

Table 2-1: Summary of Data Reviewed for Provincial Plan Areas

Information Source	Provincial Plan Areas (NEP, Greenbelt Plan, ORMCP)			
	In Project Location (Y/N)	Within 1 km of the Project Location (Y/N)	Description	Data Reviewed
Ministry of Natural Resources (MNR)				
GEO Mapping	N	N	N/A	CLUPA datasets
Crown Land Use Policy Atlas	N	N	N/A	Crown Land Use Data layer

2.3.2 Provincial Parks and Conservation Reserves

The REA Regulation requires a determination on the presence/absence of provincial parks and conservation reserves on and within 1 km of the Project Location. The information sources and data reviewed to make the determinations are provided in Table 2-2.

As shown in Table 2-2 below, there are no Provincial Parks or Conservation Reserves in or within 1 km of the Project Location. Verifying the results of the Records Review as it relates to Provincial Parks and Conservation Reserves is not required. As these features are not present, they are not subject to a Site Investigation. Therefore, no further consideration or assessment is required in this NHA.

Table 2-2: Summary of Data Reviewed for Provincial Parks and Conservation Reserves

Information Source	Provincial Parks and Conservation Reserves			
	In Project Location (Y/N)	Within 1 km of the Project Location (Y/N)	Description	Data Reviewed
Ministry of Natural Resources and (MNR)				
GEO Mapping	N	N	N/A	CLUPA datasets, Provincial Parks Regulated dataset, Conservation Reserve dataset, Natural Heritage Area dataset
NHIC MaM	N	N	N/A	Provincial Park, and Conservation Reserve layers

Information Source	Provincial Parks and Conservation Reserves			
	In Project Location (Y/N)	Within 1 km of the Project Location (Y/N)	Description	Data Reviewed
Crown Land Use Policy Atlas	N	N	N/A	Crown Land Use Data layer
Township of Chapple				
Township of Chapple Official Plan	N	N	N/A	Entirety of plan including - Environmental Protection Areas

2.3.3 Natural Features

A Records Review was completed to determine presence/absence of Natural Features (as described in Section 1.2.3) in or within 1 km of the Project Location. Confirmed³ provincially significant (i.e., ANSIs, wetlands) or significant natural features (i.e., woodlands, wildlife habitat) are also identified, where found.

2.3.3.1 Earth Science and Life Science ANSI

As shown in Table 2-3, there are no Earth Science or Life Science ANSIs in or within 1 km of the Project Location. As the MNR is responsible for identifying and evaluating the significance of ANSIs, confirmation of presence/absence and field verification is not required. Therefore, no further consideration or assessment is required in this NHA.

Table 2-3: Summary of Data Reviewed for Earth Science and Life Science ANSIs

Information Source	Earth Science and Life Science ANSIs			
	In Project Location (Y/N)	Within 1 km of the Project Location (Y/N)	Description	Data Reviewed
Ministry of Natural Resources and (MNR)				
GEO Mapping	N	N	N/A	ANSI dataset
NHIC MaM	N	N	N/A	ANSI layer
Township of Chapple				
Township of Chapple	N	N	N/A	Schedule C - Natural / Cultural Features and Development Constraints

2.3.3.2 Wetlands

As shown in Table 2-4 and Figure 2-1, there are wetlands in and within 1 km of the Project Location. Site Investigations as described in Section 3 were completed to verify the

³ Confirmed provincially significant ANSIs are identified by MNR.

information obtained during the Records Review and determine the presence of wetlands not previously mapped. Corrections and evaluations of these wetlands are further described in Section 3 and Section 4.

Table 2-4: Summary of Data Reviewed for Wetlands

Information Source	Wetlands			
	In Project Location (Y/N)	Within 1 km of the Project Location (Y/N)	Description	Data Reviewed
Ministry of Natural Resources and (MNR)				
GEO Mapping	Y	Y	N/A	Wetland dataset
Rainy River District Data	Y	Y	N/A	Wetland layer
NHIC MaM	Y	Y	Both unevaluated and evaluated mapped wetlands, including Provincially Significant Wetland (PSW)	Wetland layer
Township of Chapple				
Township of Chapple Official Plan	Y	Y	Wetlands and Significant Wetlands	Land Use Designations Map (Schedule A) and Natural / Cultural Features and Development Constraints (Schedule C)

2.3.3.3 Wildlife Habitat

The results of the Records Review are shown in Table 2-5 below and Figure 2-1. Wildlife habitat is present in and within 1 km of the Project Location based on the broad definition in the REA Regulation. While most records searched do not provide specific wildlife habitat information (as defined in Section 1.2.3.3), the broadly defined term provided in the REA Regulation suggests that all lands meet the definition. As such, it is not possible to scope out wildlife habitat at the Records Review stage. Therefore, Site Investigations were completed to determine presence/absence of wildlife habitat (as described in Section 1.2.3.3) and more specifically the wildlife habitat types listed in the SWH Criteria Schedules for Ecoregion 3E (MNR, 2015) and 3W (MNR, 2017). Species identified in the Records Review (Appendix A) were considered in respect of potential wildlife habitat to assist in focusing Site Investigation surveys.

Table 2-5: Summary of Data Reviewed for Wildlife Habitat

Information Source	Wildlife Habitat			
	In Project Location (Y/N)	Within 1 km of the Project Location (Y/N)	Description	Data Reviewed
Ministry of Natural Resources and (MNR)				
GEO Mapping	N	Y	White-tailed Deer Yard (Stratum 1) – Overwintering Yards were identified just outside of the Project Location (within 50 m).	The following datasets were reviewed: Nesting Site, Breeding Area, Den Site, Feeding Area Wildlife, FRI Wetland, Mast Producing Area, Natural Heritage Area, NHS Area, Nursery Area Wildlife, Resting Area, Significant Ecological Area, Staging Area Wildlife, Travel Corridor Wildlife, Wilderness Area, Wintering Area.
NHIC MaM	Y (Possible NHIC species)	Y (Possible NHIC species)	No specific wildlife habitat information is available.	NHA MaM.
Township of Chapple				
Township of Chapple Official Plan	N	N	No specific wildlife habitat information is available. Wetlands, and ANSIs are considered as supporting wildlife habitat.	Chapple OP Schedules and Figures.
Non-Government Species-Related Documents				
Atlas of the Mammals of Ontario	Possible	Possible	No wildlife habitat information available. However, mammals whose ranges overlap the Project Location are considered in respect of potential wildlife habitat.	Species range maps.
Ontario Reptile and Amphibian Atlas (ORAA)	Possible	Possible	No wildlife habitat information available. However, species recorded within the ORAA map square that overlaps the Project Location are considered in respect of potential wildlife habitat.	ORAA map square 15VP39 (and associated species).
Important Bird Area (IBA) of Canada	N	N	There are no IBAs within a 50 km radius of the Project Location. The closest IBA (ON144 - Lake of the Woods Sand Spit Archipelago) is located 55 km Northwest of the Project Location.	IBA web viewer.
Ontario Breeding Bird Atlas (OBBA)	Possible	Possible	No wildlife habitat information available. However, species recorded within the OBBA map square that overlaps the Project Location are considered in respect of potential wildlife habitat.	OBBA map square 15TVP39 (and associated species).

2.3.3.4 Species of Conservation Concern

Species identified in the Records Review (Appendix A) were considered in respect of potential wildlife habitat to assist in focusing Site Investigation surveys. Table 2-6 below outlines SoCC's with potential to exist within or utilize the Project Location and adjacent areas based on information contained within the desktop resources listed above.

Table 2-6: Summary of Species of Conservation Concern

SoCC ID Number	Common Name	Scientific Name	SARA	PSO	COSSARO	S-Rank	Source
Birds							
SoCC-01	American Coot	<i>Fulica americana</i>				S3B, S4N	OBBA
SoCC- 02	American White Pelican	<i>Pelecanus erythrorhynchos</i>			SC	S3B, S4M	OBBA
SoCC-03	Bank Swallow	<i>Riparia riparia</i>	THR			S4B	OBBA
SoCC-04	Barn Swallow	<i>Hirundo rustica</i>	THR		SC	S4B	OBBA
SoCC-05	Black Tern	<i>Chlidonias niger</i>				S3B,S4M	OBBA
SoCC-06	Black-billed Magpie	<i>Pica hudsonia</i>				S2	OBBA
SoCC-07	Blue-winged Teal	<i>Spatula discors</i>				S3B, S4M	OBBA
SoCC-08	Bobolink	<i>Dolichonyx oryzivorus</i>	THR		THR	S4B	OBBA
SoCC-09	Brewer's Blackbird	<i>Pica hudsonia</i>				S2	OBBA
SoCC-10	Canada Warbler	<i>Cardellina canadensis</i>	THR		SC	S5B	OBBA
SoCC-11	Common Nighthawk	<i>Chordeiles minor</i>			SC	S4B	OBBA
SoCC-12	Dickcissel	<i>Spiza americana</i>				S2M	OBBA
SoCC-13	Eastern Meadowlark	<i>Sturnella magna</i>	THR		THR	S4B, S3N	OBBA
SoCC-14	Eastern Whip-poor-will	<i>Antrostomus vociferus</i>	THR		SC	S4B	OBBA
SoCC-15	Eastern Wood-Pewee	<i>Contopus virens</i>			SC	S4B	OBBA
SoCC-16	Evening Grosbeak	<i>Coccothraustes vespertinus</i>			SC	S4	OBBA
SoCC-17	Golden-winged Warbler	<i>Vermivora chrysoptera</i>	THR	SC	SC	S3B	OBBA
SoCC-18	Least Bittern	<i>Ixobrychus exilis</i>	THR		SC	S4B	OBBA
SoCC-19	Lesser Yellowlegs	<i>Tringa flavipes</i>		THR	THR	S3, S4B, S5M	OBBA
SoCC-20	Olive-sided Flycatcher	<i>Contopus cooperi</i>			SC	S4B	OBBA
SoCC-21	Purple Martin	<i>Progne subis</i>				S3B	OBBA
SoCC-22	Red-headed Woodpecker	<i>Melanerpes erythrocephalus</i>	END		END	S3	OBBA
SoCC-23	Rusty Blackbird	<i>Euphagus carolinus</i>			SC	S4B, S3N	OBBA
SoCC-24	Short-eared Owl	<i>Asio flammeus</i>	THR		THR	S4B, S2, S3N	OBBA

SoCC ID Number	Common Name	Scientific Name	SARA	PSO	COSSARO	S-Rank	Source
SoCC-25	Upland Sandpiper	<i>Bartramia longicauda</i>				S2B	OBBA
SoCC-26	Western Meadowlark	<i>Sturnella neglecta</i>				S1B	OBBA
SoCC-27	Wood Thrush	<i>Hylocichla mustelina</i>	THR			S4B	OBBA
SoCC-28	Yellow Rail	<i>Coturnicops noveboracensis</i>			SC	S4, S5B	OBBA
Mammals							
SoCC-29	Eastern Red Bat	<i>Lasiurus borealis</i>		END	END	S3	Recovery Strategy / COSEWIC
SoCC-30	Eastern Small-Footed Myotis	<i>Myotis leibii</i>			END	S2, S3	Recovery Strategy / COSEWIC
SoCC-31	Hoary Bat	<i>Lasiurus cinereus</i>		END	END	S3	Recovery Strategy / COSEWIC
SoCC-32	Little Brown Myotis	<i>Myotis lucifugus</i>	END	END	END	S3	Recovery Strategy / COSEWIC
SoCC-33	Northern Myotis	<i>Myotis septentrionalis</i>	END	END	END	S3	Recovery Strategy / COSEWIC
SoCC-34	Tri-Coloured Bat	<i>Perimyotis subflavus</i>	END	END	END	S3	Recovery Strategy / COSEWIC
SoCC-35	Silver-Haired Bat	<i>Lasionycteris noctivagans</i>		END	END	S3	Recovery Strategy / COSEWIC

2.4 Summary of Records Review

A summary of the results of the Records Review and determinations made is provided in Table 2-7. A Site Investigation is required to confirm the findings of the Records Review and determine if any corrections are required or if there are additional features not previously identified. As shown in Table 2-7, there are no Provincial Parks, Conservation Reserves or ANSIs (earth science or life science) in or within 1 km of the Project Location. These features do not need to be verified as their locations are determined and mapped by the provincial government.

Table 2-7: Summary of the Records Review Determinations for the Rainy River Solar Project

Determination to be Made	Yes/No	Site Investigation Required to Verify Records Review Findings?
Is the Project Location in or within 1 km of a Provincial Park or Conservation Reserve?	No	¹ Provincial Park: No ¹ Conservation Reserve: No
Is the Project Location in a Natural Feature?	Yes (Possible)	¹ Earth Science ANSI: No ¹ Life Science ANSI: No Wetland: Yes ² Wildlife Habitat: Yes
Is the Project Location within 1 km of a Natural Feature?	Yes (Possible)	¹ Earth Science ANSI: No ¹ Life Science ANSI: No Wetland: Yes ² Wildlife Habitat: Yes

Notes:

1. Provincial Parks, Conservation Reserves and ANSIs do not need to be field verified if the Records Review confirmed they are not present.
2. No specific wildlife habitats have been identified. However, based on the definition of wildlife habitat in the REA Regulation, all lands in and within 50 m of the Project Location have the potential to support wildlife habitat. Further studies are required to verify presence/absence and types of wildlife habitats present.

3. Site Investigation and Targeted Studies

3.1 Regulatory Requirements

Part IV, Subsection 26(1) of the REA Regulation requires proponents of Class 3 solar projects to conduct an investigation of the air, land and water within 50 m of the Project Location either by visiting the site or by an alternative investigation of the site. Determinations to be made include:

- Whether the results of the analysis summarized in the Records Review are correct or require correction and identifying any required corrections;
- Whether any additional natural features exist, other than those that were identified in the Records Review;
- The boundaries, located within 50 m of the Project Location, of any Natural Feature that was identified in the Records Review or the Site Investigation; and
- The distance from the Project Location to the boundaries of any Natural Feature that was identified in the Records Review or the Site Investigation.

An attestation regarding the required information or activities relevant to the Site Investigation and Targeted Studies were completed by a qualified person(s) as set out in the NHAG and were undertaken according to requirements, criteria and procedures set out in O. Reg. 359/09 under the EPA and the NHAG for Renewable Energy Projects is available in Appendix B. Associated qualifications of the staff executing and overseeing the activities is also available in Appendix B.

A checklist of the report requirements, as prescribed in Subsection 26(3) of the REA Regulation are provided below, in Table 3-1.

Table 3-1: Site Investigation Requirements under the REA Regulation

Site Investigation Report Requirements	Report Section
A summary of any corrections to the Records Review and the determinations made as a result of conducting the Site Investigation and baseline studies.	Section 3.4.3
Information establishing the type of each natural feature identified in the Records Review and in the Site Investigation and Baseline Studies.	Section 3.3
A map showing: 1. All boundaries located within 50 m of the Project Location, of any natural feature that was identified in the Records Review, Site Investigation or Baseline Studies. 2. The location and type of each natural feature identified in relation to the Project Location. 3. All distances required to be determined for any natural feature that was identified in the Records Review, the Site Investigation or Baseline Studies.	Figure 3-1 and Figure 3-2
A summary of the methods used to make observations for the purposes of the Site Investigation and Baseline Studies.	Section 3.2

Site Investigation Report Requirements	Report Section
The name and qualifications of the person conducting the Site Investigation and baseline studies.	Appendix B
If an investigation was conducted by visiting the site: 1. The dates and times of the beginning and completion of the Site Investigation and baseline studies. 2. The duration of the Site Investigation and baseline studies. 3. The weather conditions during the Site Investigation and Baseline Studies. 4. Field notes kept by the person conducting the Site Investigation.	Sections 3.2.1.1 and 3.3.1
If an alternative investigation of the site was conducted: 1. The dates of the collection of the data used in the Site Investigation and baseline studies. 2. An explanation of why the person who conducted the alternative investigation determined that it was not reasonable to conduct the Site Investigation by visiting the site.	Section 3.2.1.2

3.2 Site Investigation Methodology

3.2.1 Site Investigation Type

The REA Regulation distinguishes between two different site investigation types: a physical site investigation and alternative site investigation. The details of the type of site investigation completed for the Project are outlined below.

3.2.1.1 Physical Site Investigation

A physical site investigation was completed for the Project Location, on privately-owned lands subject to purchase for the Project. This included walking throughout the Project Location to investigate the site conditions (air, land and water) and verify the presence/absence of Natural Features. Dates and details of the site investigation and Baseline Studies are provided in Section 3.3.1 below.

3.2.1.2 Alternative Site Investigation

An alternative site investigation was completed for privately-owned lands within 50 m of the Project Location where no access permissions were available. The air, land, water and verification of natural features were assessed from within the Project Location through observations made via binoculars and verification via ground truthing within the Project Location. Alternative Site Investigations involving interpretations including the use of Google Earth's latest and historical imagery (dated June 10, 2025) extended 300 m from the Project Location to assist in determinations regarding Natural Features.

3.2.2 Field Study Methodologies

The methodologies and field studies completed to determine the presence/absence of Natural Features on and within 50 m of the Project Location are provided in the subsequent sections below.

3.2.2.1 *Ecological Land Classification*

Ecological Land Classification (ELC) is required to be completed as part of the Site Investigation to assist in identifying Natural Features, delineating boundaries and informing the types of field studies that may be required and in order to determine sensitive features present for SoCC, SAR, and SWH.

As the Project sits within the Northwestern portion of the province, the Forest Ecosystem Classification for Northwestern Ontario was adopted (Banton *et al.*, 2009). Ecological Land Classification: Southern Ontario (Lee, 2008) was used to describe meadow communities given the descriptions offered more detail to explain habitat in respect to Grassland Birds.

Google Earth imagery was reviewed prior to the site visit to map out vegetation communities for field verification. The minimum size for mapping polygons is 0.5 ha based on the ELC protocol. Vegetation communities were characterized based on dominant species observed and appropriate ELC codes were assigned to each polygon and habitat based on these criteria.

3.2.2.2 *Wetlands*

A determination of the presence/absence of wetlands in and within 50 m of the Project Location is required. Wetlands identified through the Records Review and any additional wetlands not previously recorded were verified and their boundaries were delineated.

Similar to what was described for ELC, a review of Google Earth imagery was completed to map out any wetlands not identified through the Records Review. All wetlands in and within 50 m of the Project Location were characterized following the protocols established in the Ontario Wetland Evaluation System (OWES) Northern Manual (MNR, 2022).

The size requirement for evaluating wetlands is typically ≥ 2 ha⁴ (OWES protocol); however, wetlands as small as 0.5 ha can be evaluated if there is some ecological significance for doing so (e.g., presence/habitat of species at risk). Site investigations completed for this Project considered wetlands above 0.5 ha for targeted surveys associated with potential SWH. Where no candidate SWH has identified only wetlands ≥ 2 ha were carried forward to an evaluation of significance. Wetlands ≥ 2 ha within 50 m of the Project Location will be treated as significant. The Project Location will be adjusted to accommodate a 50 m setback from the feature.

The mobile application (Field Maps for ArcGIS) was used in the field to verify and refine pre-mapped boundaries and any additional wetlands not previously identified. Wetland indicator species and the 50-50 rule (i.e., 50% wetland species and 50% upland vegetation) were used to determine the wetland boundaries. All flora and fauna observed within the wetland were documented. Wetlands were classified based on the dominant vegetation form.

⁴ In general, wetlands smaller than 2 ha are not evaluated unless they provide important ecological benefit (e.g., SARs, rare species, specialized wildlife habitat). Where an unevaluated wetland is identified and development is not proposed within the wetland itself, the wetland can be treated as provincially significant and conduct an EIS.

Photographs of all wetlands identified were also taken. All wetland units regardless of size were considered for targeted studies associated with wildlife habitat. Corrections to the Records Review will only apply to wetlands ≥ 2 ha.

3.2.2.3 *Wildlife Habitat*

An assessment of wildlife habitat was completed following the SWH Criteria Schedules for Ecoregion 3E (MNR, 2015) and 3W (MNR, 2017). The MNR recognizes five main categories of wildlife habitat (seasonal concentration areas of animals, rare vegetation communities, specialized habitat for wildlife, habitats for SoCC, and animal movement corridors), each with several wildlife habitat types. Indicator species, ELC requisite ecosites and habitat criteria were used to assess the presence/absence of candidate Significant Wildlife Habitat (cSWH).

To assist in the identification of cSWH and generalized cSWH, all incidental wildlife species encountered during the Site Investigation were recorded, as well as any features associated with the provision of wildlife habitat. Wildlife habitat features (e.g., tree cavities, crevices, rock piles, basking sites) were documented throughout the Site Investigation. Observations were also made where disturbance (such as, trail disturbance invasive species, etc.) was noted.

3.2.3 *Wildlife Habitat Studies*

Formal and targeted surveys (e.g., breeding bird surveys, anuran call surveys, grassland bird surveys) were conducted as part of the Site Investigation, all data was collected via Field Maps. Any incidental observations or evidence of wildlife use outside of structured surveys (e.g., scat, tracks, depredated turtle nests) and their locations were recorded using a handheld GPS. Targeted survey types and methodologies were informed by Significant Wildlife Habitat Criteria Schedules for Ecoregion 3E (MNR, 2015) and 3W (MNR, 2017).

3.2.3.1 *Anuran Call Surveys*

Anuran Call Surveys were conducted in accordance with the Marsh Monitoring Program (MMP) (Bird Studies Canada, 2000). Each amphibian survey station is to be visited a minimum of 3 nights, approximately 15 days apart, between May 1 and July 15. Surveys began one half hour after sunset and ended near midnight. The locations of the amphibian call stations were selected based on available potential habitat such as wetlands, lakes, ponds, rivers, streams, and vernal pools, while trying to maintain a minimum of 500 m apart to reduce individuals or choruses being recorded twice. In total, five amphibian surveys stations were completed on the dates presented in Table 3-2.

The three temperature thresholds outlined by the MMP designed to cover the calling initiation period of most Great Lakes frogs and toads were utilized and are described below.

The first visit should coincide with minimum night-time air temperatures of at least 5°C (41°F) and the first or second warm spring shower. The second survey visit should occur with night-time air temperatures of at least 10°C (50°F) and the third visit should coincide with night-time air temperatures of at least 17°C (63°F). Amphibian surveyors are asked to conduct their survey visits on one of the first evenings (after mid-March) with appropriate temperatures.

Each amphibian station was surveyed for 3 minutes, and one of three Call Level Codes was recorded to categorize the intensity of calling activity for each species. The Call Level Codes are adapted from the Ontario Amphibian Road Call Count (Bishop, Pettit, Gartshore, & MacLeod, 1997).

- **Code 1:** Calling individuals can be counted and calls are not simultaneous. In this instance, exact counts can be made of the number of calling individuals and surveyors are asked to record both the code and their count.
- **Code 2:** Calls of individuals can be distinguished but some calling is simultaneous. Under these conditions, an exact count is not possible or expected but the surveyor should be able to make a reliable estimate of the number of individuals calling. Surveyors are asked to record both the code and their count estimate.
- **Code 3:** A full calling chorus with calls continuous and overlapping. Reliable counts and even estimates are unrealistic at this level of calling intensity. No counts are requested.

3.2.3.2 *Bat Snag Assessment and Acoustic Monitoring*

Snag surveys were conducted following the methodology outlined in the Maternity Roost Surveys (Forests/Woodlands) and Species at Risk Bats Survey Note (MECP, 2022). ELC is used to determine presence of mixed wood forests or deciduous forests that may contain suitable roosting features. Surveys were conducted during the leaf-off period (winter and spring 2025) in order to provide adequate viewing of target roost features and are not obstructed by foliage.

The following criteria were used to assess potential maternity colony roost features within the Project boundaries:

- Tallest snag/cavity tree;
- Exhibits cavities/crevices originating from cracks, scars, knot holes or woodpecker cavities;
- Has the largest diameter breast height (dbh);
- Within the highest density of snags/cavity trees (i.e., clusters of snags);
- Species that provide good cavity characteristics/habitat (i.e., white pine, maple, aspen, ash, oak);
- Canopy is more open than cluttered or densely vegetated; and
- Exhibits early stages of decay (decay Class 1-3).

In addition to snag surveys, acoustic monitors were deployed during the maternal roosting season (June). A total of two Acoustic Recording Units were utilized to collect ultrasonic bat data within the Project Location (Figure 3-1). Recording occurred from sunset to sunrise

during the month of June. A biologist experienced in bat acoustic analysis and identification undertook the analysis of the data.

3.2.3.3 Breeding Bird Surveys

Breeding Bird Surveys (BBS) were conducted following the OBBA methodology (OBBA, 2021). All surveys were conducted between sunrise and 5 hours after sunrise, within a 150 m circular station, with the surveyor identifying all birds by sight and/or sound. A total of nine BBS stations were surveyed twice across the Project Location (Figure 3-1) during late June and again in early July.

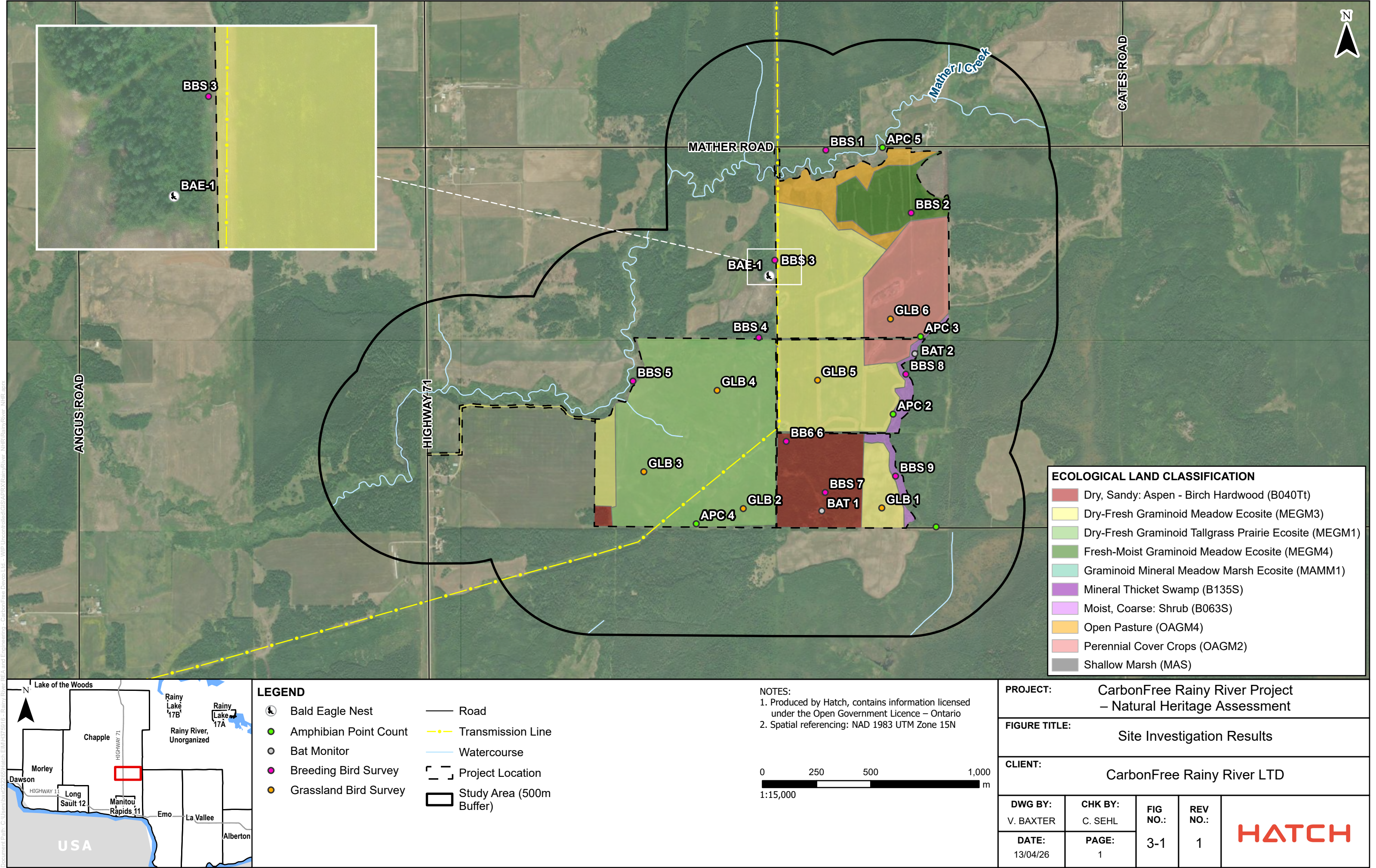
The OBBA methodology requires certain weather conditions to ensure the highest probability of detecting variety and presence/absence of avian species. As a result, surveys were not conducted in thick fog or when winds were >3 on the Beaufort scale (over 19 km/h). The following information was recorded on the data sheets:

- All species names in tabular format with the total number of individuals observed;
- Relative distance to the observer (within 0 to 50 m, 50 to 100 m or greater than 100 m);
- Breeding evidence recorded;
- Any SAR species, location, breeding evidence, and general behaviour; and
- Sampling details (date, surveyor, location, mapping, etc.).

3.2.3.4 Grassland Bird Surveys

Both Eastern Meadowlark (*Sturnella magna*) and Bobolink (*Dolichonyx oryzivorus*) are grassland avian SAR that inhabit similar open grass dominated terrestrial habitats primarily in the form of abandoned or fallow fields as well as active agricultural hayfields. However, due to the location of the Project, Eastern Meadowlark are not expected to be present as their range extent does not exceed past the Eastern Lake Superior shoreline. Western Meadowlark (*Sturnella neglecta*), however, do overlap with the Project Location. This species is not a listed SAR and, therefore, focus was placed on Bobolink presence and suitable habitat within the Project Location.

A map of the survey station locations is shown in Figure 3-1. For the purposes of these surveys, any area greater than 2 ha in size with <25% tree cover and the presence of terrestrial grass or herbaceous vegetation, as informed by the Eastern Meadowlark General Habitat Description document (MECP, 2025) was considered potential habitat. Furthermore, a Habitat Suitability Index (HSI) was developed and outlined within the Recovery strategy for the Eastern Meadowlark in Canada (Environment and Climate Change Canada, 2022). For Eastern Meadowlark, the HSI indicates optimal breeding habitat consisted of dense grasses



of moderate height (12.5 to 35 cm), low shrub cover (<5% preferred, >35% not generally used) and low forb cover with adequate perches present. Ideal vegetation height for nesting was found to be 25 to 50 cm while heights of 10 to 30 cm were found to be ideal for resting within breeding habitat. Accordingly, the Project used the below to inform survey locations:

- Eastern Meadowlark were listed as 'Threatened' on SARA Schedule 1 in November 2017. Eastern Meadowlark habitat preferences include moderately tall grasslands, such as pastures and hayfields, but are also found in alfalfa fields, weedy borders of croplands, roadsides, orchards, airports, shrubby overgrown fields, or other open areas with small trees, shrubs or fence posts are used as elevated song perches (MNR, 2019a).
- Bobolink were listed as 'Threatened' on SARA Schedule 1 in November, 2017. Bobolink habitat preferences include tallgrass prairies, open meadows, and hayfields, building their small nests on the ground in dense grasses and forbs (MNR, 2019b).
- The survey methodology followed the MNR Survey Protocol for Eastern Meadowlark (MNR, 2013). The protocol utilizes a point count survey methodology at locations with appropriate HSI breeding habitat. Desktop research and on-site investigations identified suitable habitat for survey locations, which included the following ELC polygon types:
 - ◆ OAGM1: Open Agriculture – Medium-Mineral Annual Row Crops;
 - ◆ OAGM2: Open Agriculture – Medium Mineral Perennial Cover Type;
 - ◆ MASM1-1: Marsh – Cattail Mineral Shallow Marsh Type; and
 - ◆ MEFM4: Fresh – Moist Forb Meadow Ecosite, Open Graminoid Meadow Type.

Surveys were conducted in the summer when birds were singing and expected to defend their territories. Surveys were repeated three times at evenly spaced intervals throughout the survey period. Due to the potential presence of both SAR species, the ideal timing window for targeted surveys according to the Ontario protocol is between May 15 and July 3 (MNR, 2013). Thus, surveys were completed during this timeframe to account for both species:

- Surveys were conducted in conditions with good visibility, little to no precipitation, and during wind conditions of a maximum of 3 on the Beaufort wind scale (wind speed not exceeding 12 km/h).
- The protocol requires one-point count (200 m fixed radius) to cover a potential area of 12.6 ha of suitable habitat. For the purposes of this project, point count radii and transect widths were reduced to 150 m to align with the OBBA.
- Surveys were conducted between sunrise and concluded 4 hours after sunrise, as per the protocol guidelines.
- Surveys were repeated three times during the determined survey period to provide sufficient data for determining presence/absence of these species.

3.3 Site Investigation Results

The results of the Site Investigation are discussed in the following sections and are intended to fulfill the requirements of the REA Regulation. Maps showing the vegetation communities and natural features documented during the Site Investigation are provided in Figure 3-1 and Figure 3-2 and summarized in the following sections.

3.3.1 Site Investigation Details

The details of the site investigation related to the dates, times and weather conditions are provided in Table 3-2 below and are intended to satisfy the requirements under Subsection 26(3) of the REA Regulation. Weather conditions are based on the weather network results for Emo, Ontario.

Table 3-2: Site Investigation Details – Dates, Times and Weather Conditions

Date	Survey Type	Site Investigator	Start Time (24 hr)	End Time (24 hr)	Duration (hrs)	Weather Conditions			
						Temp (°C)	Wind Speed (Beaufort Scale)	Cloud Cover (%)	Precipitation (mm)
May 26, 2025	Physical Site Investigation (Project Location)	C. Lewis, A. Nerino	20:55	21:55	1	5	0	9	0
May 30, 2025	Physical Site Investigation (Project Location)	C. Lewis, A. Nerino	7:02	8:30	1.5	18	1	50	0
June 3, 2025	Physical Site Investigation (Project Location)	C. Lewis, A. Nerino	21:00	22:30	1.5	16	1	10	0
June 4, 2025	Physical Site Investigation (Project Location)	C. Lewis, A. Nerino	8:00	10:30	2.5	17	2	10	0
June 23, 2025	Physical Site Investigation (Project Location) Alternative Site Investigation (50 m of Project Location)	T. Simpanen, A. Nerino	21:50	23:15	1.25	16	1	50	0
June 24, 2025	Physical Site Investigation (Project Location) Alternative Site Investigation (50 m of Project Location)	T. Simpanen, A. Nerino	7:00	10:15	3.25	19	1	0	0

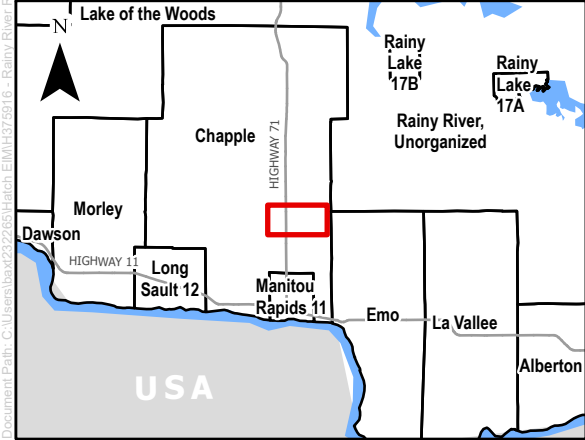
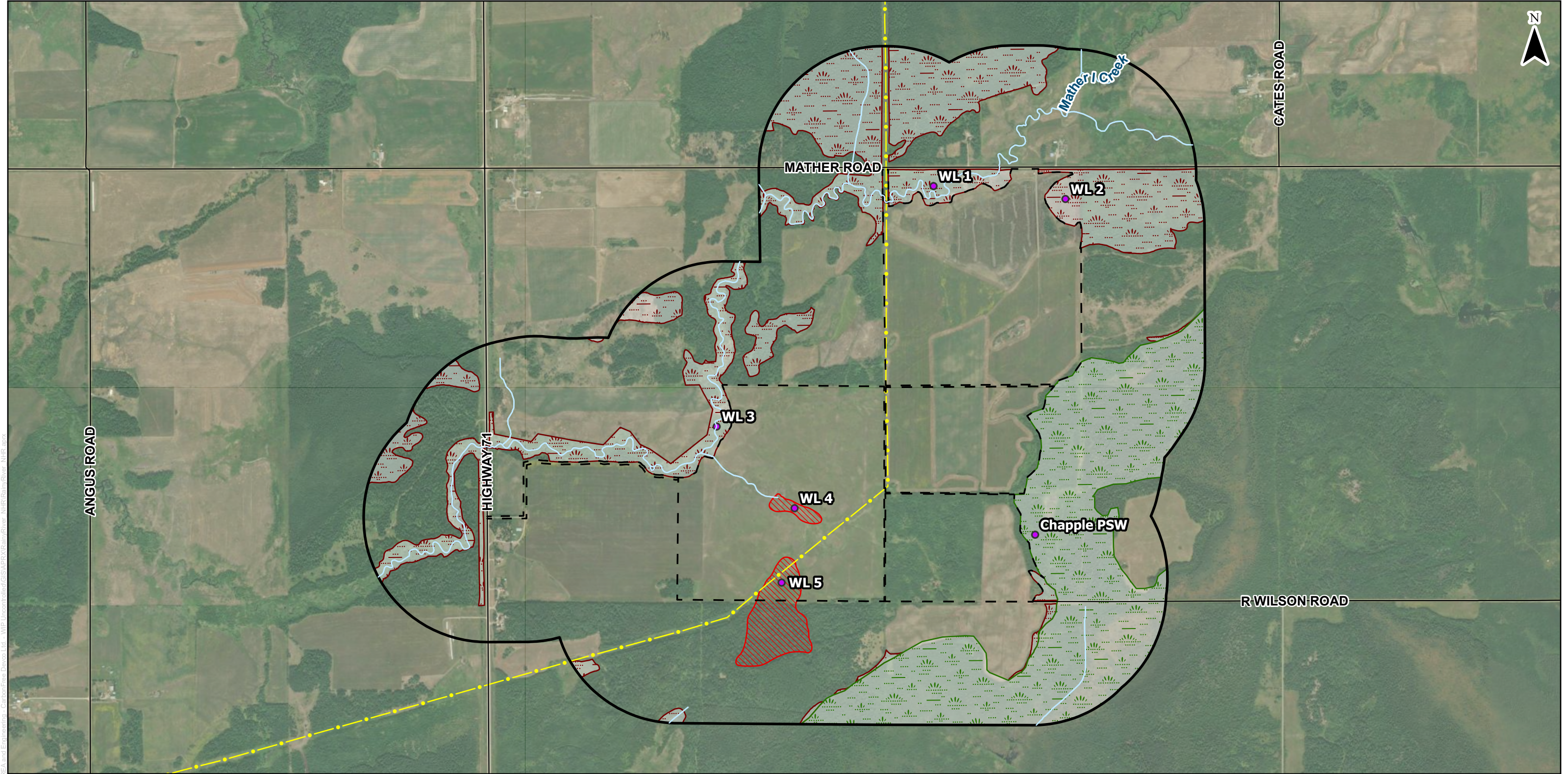
Date	Survey Type	Site Investigator	Start Time (24 hr)	End Time (24 hr)	Duration (hrs)	Weather Conditions			
						Temp (°C)	Wind Speed (Beaufort Scale)	Cloud Cover (%)	Precipitation (mm)
July 8, 2025	Physical Site Investigation (Project Location) Alternative Site Investigation (50 m of Project Location)	T. Simpanen, A. Nerino	7:15	13:30	6.25	17	0	60	0

3.3.2 Breeding Bird Survey Results

Surveys were conducted during the breeding season (May 24 to July 10), and took place on June 24 and July 8, 2025 in order to capture breeding evidence and species composition for birds utilizing the Project Location. As depicted in Figure 3-1, a total of nine point count stations were placed strategically throughout the Project Location in various habitat types to capture as many species as possible. As a result, a total of 37 species were detected during the survey period, including an incidental observation of an adult grouse.

Although species such as Savannah Sparrow (*Passerculus sandwichensis*) was detected throughout the Project Location, these observations were largely made in areas that do not meet the criteria for Open Country Bird Breeding Habitat such as agricultural lands being used for hay or livestock pasture.

In addition to species detected during standardized BBS point counts, an incidental observation of five Ruffed Grouse (*Bonasa umbellus*) is included in Table 3-3 below.



LEGEND

- Wetland
- Road
- Transmission Line
- Watercourse
- Project Location
- Study Area (500m Buffer)
- Unevaluated Wetland (MNR)
- Provincially Significant Wetland (MNR)
- Wetland No Longer Present

NOTES:

- Produced by Hatch, contains information licensed under the Open Government Licence – Ontario
- Spatial referencing: NAD 1983 UTM Zone 15N
- Chapple Official Plan Wetlands digitized from the Township of Chapple's Final Official Plan, 2013

0 250 500 1,000 m
1:15,000

PROJECT:		CarbonFree Rainy River Project – Natural Heritage Assessment			
FIGURE TITLE:		Site Investigation Confirmed Wetlands			
CLIENT:		CarbonFree Rainy River LTD			
DWG BY: V. BAXTER	CHK BY: C. SEHL	FIG NO.:	REV NO.:	HATCH	
DATE: 13/04/26	PAGE: 1	3-2	1		

Table 3-3: Breeding Bird Survey Results

Common Name	Scientific Name	SARA	PSO	SoCC
American Crow	<i>Corvus brachyrhynchos</i>	-	-	
American Goldfinch	<i>Spinus tristis</i>	-	-	
American Robin	<i>Turdus migratorius</i>	-	-	
Bald Eagle	<i>Haliaeetus leucocephalus</i>	-	-	
Black-and-white Warbler	<i>Mniotilta varia</i>	-	-	
Black-billed Magpie	<i>Pica hudsonia</i>	-	-	Y
Black-capped Chickadee	<i>Poecile atricapillus</i>	-	-	
Black-throated Green Warbler	<i>Setophaga virens</i>	-	-	
Blue Jay	<i>Cyanocitta cristata</i>	-	-	
Bobolink	<i>Dolichonyx oryzivorus</i>	THR	-	Y
Brewer's Blackbird	<i>Euphagus cyanocephalus</i>	-	-	Y
Broad-winged Hawk	<i>Buteo platypterus</i>	-	-	
Brown-headed Cowbird	<i>Molothrus ater</i>	-	-	
Chestnut-sided Warbler	<i>Setophaga pensylvanica</i>	-	-	
Common Yellowthroat	<i>Geothlypis trichas</i>	-	-	
Clay-coloured Sparrow	<i>Spizella pallida</i>	-	-	
Gray Catbird	<i>Dumetella carolinensis</i>	-	-	
Eastern Kingbird	<i>Tyrannus tyrannus</i>	-	-	
House Wren	<i>Troglodytes aedon</i>	-	-	
Killdeer	<i>Charadrius vociferus</i>	-	-	
Mourning Warbler	<i>Geothlypis philadelphia</i>	-	-	
Nashville Warbler	<i>Leiothlypis ruficapilla</i>	-	-	
Northern Flicker	<i>Colaptes auratus</i>	-	-	
Ovenbird	<i>Seiurus aurocapilla</i>	-	-	
Pileated Woodpecker	<i>Dryocopus pileatus</i>	-	-	
Red-breasted Nuthatch	<i>Sitta canadensis</i>	-	-	
Red-eyed Vireo	<i>Vireo olivaceus</i>	-	-	
Rose-breasted Grosbeak	<i>Pheucticus ludovicianus</i>	-	-	
Savannah Sparrow	<i>Passerculus sandwichensis</i>	-	-	
Sedge Wren	<i>Cistothorus stellaris</i>	-	-	
Song Sparrow	<i>Melospiza melodia</i>	-	-	
Veery	<i>Catharus fuscescens</i>	-	-	
Western Meadowlark	<i>Sturnella neglecta</i>	-	-	Y

Common Name	Scientific Name	SARA	PSO	SoCC
White-throated Sparrow	<i>Zonotrichia albicollis</i>	-	-	
Winter Wren	<i>Troglodytes hiemalis</i>	-	-	
Yellow Warbler	<i>Setophaga petechia</i>	-	-	
Incidental				
Ruffed Grouse	<i>Bonasa umbellus</i>	-	-	

3.3.3 Grassland Bird Survey Results

Surveys were conducted as outlined Table 3-4 below during May and June 2025 to capture various potential grassland bird species within the Project Location. A total of six survey locations were placed in areas thought to provide suitable habitat. All six stations were surveyed three times during the survey window (May 15 to July 3); with one target species recorded.

Table 3-4: Grassland Bird Survey Results Summary

Date	Site Investigator(s)	Point	Observations	Time (24 hr)	Temp (°C)	Wind Speed (km/h)	Precipitation (mm)
Survey 1							
May 30, 2025	C. Lewis, A. Nerino	1	No target grassland bird species observed.	8:20	18	15	0
		2	No target grassland bird species observed.	7:02	15	15	0
		3	No target grassland bird species observed.	7:16	15	15	0
		4	No target grassland bird species observed.	7:30	16	15	0
		5	Bobolink observed flying throughout area.	7:40	18	15	0
		6	Bobolink heard/observed flying throughout area.	7:55	18	15	0
Survey 2							
June 4, 2025	C. Lewis, A. Nerino	1	No target grassland bird species observed.	9:15	17	19	0
		2	No target grassland bird species observed.	8:08	15	19	0
		3	No target grassland bird species observed.	8:30	15	19	0
		4	No target grassland bird species observed.	8:38	15	19	0

Date	Site Investigator(s)	Point	Observations	Time (24 hr)	Temp (°C)	Wind Speed (km/h)	Precipitation (mm)
		5	Several Bobolink heard/observed flying throughout area.	8:50	17	19	0
		6	Several Bobolink heard, no visual confirmation.	8:55	15	19	0
Survey 3							
June 24, 2025	T. Simpanen, A. Nerino	1	Bobolink observed flying overhead.	7:36	13	10	0
		2	No target grassland bird species observed.	8:08	13	10	0
		3	Bobolink heard calling.	8:28	13	10	0
		4	Bobolink observed.	8:52	13	10	0
		5	Several male and female Bobolink heard/observed.	9:01	15	10	0

3.3.4 Anuran Call Survey Results

Surveys were conducted as outlined in Table 3-5 below during May and June 2025 to capture various potential breeding amphibian species within the Project Location. As depicted in Figure 3-1, a total of five survey locations were placed in areas thought to provide suitable habitat. All five stations were surveyed on three occasions during the survey window (April 15 to June 30); with two species recorded.

Table 3-5: Anuran Survey Results Summary

Date	Site Investigator(s)	Station	Species Detected	Calling Code (1-3)	Start Time (24 hr)	End Time (24 hr)	Weather Conditions			
							Temp (°C)	Wind Speed (Beaufort Scale)	Cloud Cover (%)	Precipitation (mm)
Survey 1										
May 26, 2025	C. Lewis, A. Nerino	1	Spring Peeper	3	21:25	21:28	14	0	90	0
		2	Spring Peeper	1	21:10	21:13	14	0	90	0
		3	Spring Peeper	1	21:05	21:08	14	0	90	0
		5	Spring Peeper	2	20:55	20:58	14	0	80	0

Date	Site Investigator(s)	Station	Species Detected	Calling Code (1-3)	Start Time (24 hr)	End Time (24 hr)	Weather Conditions			
							Temp (°C)	Wind Speed (Beaufort Scale)	Cloud Cover (%)	Precipitation (mm)
Survey 2										
June 3, 2025	C. Lewis, A. Nerino	1	Spring Peeper	2	22:15	22:18	16	1	5	0
		2	None detected	N/A	22:00	22:03	16	1	10	0
		3	Spring Peeper	1	21:50	21:53	16	1	10	0
		4	Spring Peeper	2	21:20	21:23	16	1	10	0
		5	Spring Peeper	3	22:30	22:33	16	1	5	0
Survey 3										
June 23, 2025	T. Simpanen, A. Nerino	1	Spring Peeper	3	22:20	22:23	16	1	50	0
			Gray Treefrog	1	22:20	22:23	16	0	50	0
		2	Spring Peeper	2	22:30	22:33	16	0	50	0
		3	Spring Peeper	2	22:42	22:45	16	0	50	0
		4	Spring Peeper	2	22:10	22:13	16	0	50	0
			Gray Treefrog	2	22:10	22:13	16	0	50	0
		5	Spring Peeper	3	21:50	21:53	16	0	50	0

3.3.5 Bat Maternity Roost and Monitoring Results

A limited number of suitable snags were identified within the Project Location. However, two features were identified to have some potential for roost activities and thus, monitors were placed to determine presence/absence of bat species within the area as shown in Figure 3-1. Table 3-6 below outlines the results of the acoustic monitoring conducted from June 3 to 30, 2025 within the Project Location to assess activity levels and presence/absence of bat species.

Table 3-6: Bat Acoustic Results Summary

Species	Scientific Name	PSO Status	Unit 1	Unit 2	Total All Units (Combined)
Big Brown Bat	<i>Eptesicus fuscus</i>	-	24	26	50
Hoary Bat	<i>Lasiurus cinereus</i>	END	102	34	136
Little Brown Myotis	<i>Myotis lucifugus</i>	END	1	1	2
Silver-haired Bat	<i>Lasionycteris noctivagans</i>	END	81	107	188
Unknown (NoID)	N/A	N/A	73	19	92
Total Counts (All Species)			281	187	468

A total of four bat species were detected during the monitoring period. 'Unknown' are recordings that could not be attributed or narrowed down to the species level as call structure was weak or did not have enough call notes to confirm down to the species level but are distinct from noise files and are within the ultrasonic bat call range. Majority of the bat activity was attributed to Hoary Bat (at Bat 1), and Silver-haired Bat (at Bat 2). During the monitoring period, activity was captured and a higher number of bat passes were recorded during the end of the month, specifically on June 22 and June 28 to 30, 2025. This is thought to be aligned with increases in insect abundance which resulted in opportunities for heavier foraging activity during the end of June. It is unlikely to be a maternal roost feature, rather, it is more likely attributed to activity from a few bats visiting the area for foraging purposes.

3.3.6 ***Ecological Land Classification***

The Project is situated on multiple private properties historically and currently used for agricultural purposes. ELC was carried out during the appropriate growing season, on June 24 and July 8, 2025. Field verification included species inventories (trees, shrubs, vascular plants, rare plants, ground cover, etc.) and characterization of each vegetation community to inform the Project. Additional focus was placed on grassland habitats as this community type is varied and abundant throughout the Project Location. Specialized graminoid and grass identification took place in order to rank and assess the quality of the grasslands throughout the Project Location. In addition, forested communities were characterized similarly by using species abundance and dominance (treed environments). The topography within and surrounding the Project Location is predominately flat with little change in elevation overall.

The Project Location boundaries display varied levels of disturbance based on the activities from agriculture and farming within this area. Patches of residual forest and woodlands exist along the boundaries and edges of the Project Location, with few large woodlots intersecting the boundaries.

Relatively few wetlands are contained within the Project Location, as seen in Figure 3-2. Wetlands 4 and 5 as identified in the Records Review results were determined to be absent based on the results of field investigations as described in Section 3.2.2.2.

The Project Location is a predominantly open grassland bordered by hedgerows, forest and riparian habitats.

Table 3-7: Summary of ELC Communities on and Within 50 m of the Project Location

ELC Community	ELC Code	On Project Location/ Component	Within 50 m of Project Location/ Component	Community Description
Dry-Fresh Graminoid Meadow Ecosite	MEGM3	✓		Open meadow habitat dominated by forbs and grasses.
Dry-Fresh Graminoid Tallgrass Prairie Ecosite	MEGM1	✓		Open pasture/tallgrass habitat dominated by grasses, sparse shrubs sparsely littered throughout this habitat. Short grass patches present from cattle or disturbance.
Dry, Sandy: Aspen – Birch Hardwood	B040Tt	✓	✓ Adjacent to Project Location	Dominated by Trembling Aspen (<i>Populus tremuloides</i>), relatively young age class.
Sparse Treed Fen	B126Tl	✓	✓ Adjacent to Project Location	Peatlands with deep organic deposits (>40 cm) and are influenced by slow, lateral water movement. Fens can be treed, shrubby, or open. Sparsely vegetated and stunted (>10 cm) Tamarack (<i>Larix laricina</i>) and Black spruce (<i>Picea mariana</i>), some shrubs and sedges present.
Perennial Cover Crops	OAGM2	✓		Disturbed soil primarily dominated by Lamb's quarters (<i>Chenopodium album</i> L.).
Shallow Marsh	MAS	✓	✓ Adjacent to Project Location	Portion of habitat contains open slow flowing water within varying width of creek bank. Riparian vegetation dominated by Willow (<i>Salix Spp.</i>) and Speckled Alder (<i>Alnus incana</i>).
Moist, Coarse: Shrub	B063S	✓	✓ Adjacent to Project Location	This is contained within the PSW that overlaps with the Project Location. Primarily vegetated by a thick canopy of Speckled Alder.
Graminoid Mineral Meadow Marsh Ecosite	MAMM1	✓	✓ Adjacent to Project Location	Shallow meadow marsh habitat dominated by sedges, Woolgrass (<i>Scirpus cyperinus</i>), Broadleaf cattail (<i>Typha latifolia</i>).
Open Pasture	OAGM4	✓		Open landscape with shortened grass from cattle grazing and movement.
Mineral Thicket Swamp	B135S	✓		Speckled Alder dominant thicket, notable sedge and facultative wet plant indicator species present.

3.3.7 **Confirmation and Assessment of Natural Features**

The following sections include the natural features to be assessed as part of the NHA. Confirmation of the Records Review (Section 2) findings and any additional natural features discovered during the site investigation are discussed in the following sections.

3.3.7.1 *Wetlands*

The Records Review identified six wetlands in or within 50 m of the Project Location, four of which were confirmed during the site investigation. Wetlands 1 and 3 in Figure 3-2 are associated with Mather I Creek and have been characterized as marsh wetlands. Wetland 2 is isolated and characterized as a marsh wetland. The Chapple PSW is confirmed present to the east of the site and has previously been characterized primarily as a swamp.

Wetland 4 and Wetland 5 as identified in the Records Review are associated with the Chapple Official Plan. These wetlands were confirmed to be absent during the site investigation, with signs of active grazing and farming throughout the area and limited signs of wetland vegetation species in the area. As these features were confirmed to be absent through the site investigation they will not be carried forward to the EoS or EIS.

Figure 3-2 summarizes the results of the Site Investigation wetland delineation activities.

3.3.7.2 *Wildlife Habitat*

The REA Regulation requires determination on whether any wildlife habitats identified through the NHA are significant. The Records Review did not identify any specific wildlife habitat types or confirmed SWH on or within 50 m of the Project Location. However, based on a review of satellite imagery, it was determined that potential wildlife habitat (as defined in the REA Regulation) may be present on and within 50 m of the Project Location.

The definition of wildlife habitat in the REA Regulation includes an area:

- Where plants, animals and other organisms live or have the potential to live and find adequate amounts of food, water, shelter and space to sustain their population, including:
 - ◆ Where a species concentrates at a vulnerable point in its annual or life cycle; and
 - ◆ Important to a migratory or non-migratory species.

The purpose of the Site Investigation was to confirm the existence of cSWH or generalized cSWH and verify the existence of any previously confirmed SWH identified in the Records Review.

All wildlife habitats identified in the SWH Criteria Schedules for Ecoregion 3E (MNR, 2015) and 3W (MNR, 2017) were assessed to determine presence/absence and candidate significance in and within 50 m of the Project Location.

The MNR recognizes five main categories of wildlife habitat (seasonal concentration areas of animals, rare vegetation communities, specialized habitat for wildlife, habitats for SoCC, and animal movement corridors), each with several wildlife habitat types. Indicator species, ELC

requisite ecosites and habitat criteria were used to assess the presence/absence of cSWH or generalized cSWH. An assessment of each of these habitat categories is provided in the following sections.

3.3.7.2.1 Seasonal Concentration Areas of Animals

The Natural Heritage Reference Manual (NHRM) (MNR, 2010) describe seasonal concentration areas of animals as:

- Areas where animals occur in relatively high densities for the species at specific periods in their life cycles and/or in particular seasons; and
- Seasonal concentration areas, which tend to be localized and relatively small in relation to the area of habitat used at other times of the year.

The criteria outlined in the SWH Ecoregion 3E (MNR, 2015) and 3W (MNR, 2017) Criterion Schedule was used to determine the presence/absence and evaluate the significance of seasonal concentration areas within the Project Location. An assessment of each of the habitat types associated with this category is provided in Table 3-8.

3.3.7.2.2 Rare Vegetation Communities

The NHRM (MNR, 2010) describes rare vegetation communities as:

- Areas that contain a provincially rare vegetation community which depend on such habitats for their survival and cannot readily move to or find alternative habitats.
- Areas that contain a vegetation community that is rare within the planning area.

The criteria outlined in the SWH Ecoregion 3E (MNR, 2015) and 3W (MNR, 2017) Criterion Schedule was used to determine the presence/absence and evaluate the significance of rare vegetation communities within the Project Location. An assessment of each of the rare vegetation communities considered rare within Ecoregion 3E and 3W is provided in Table 3-9 below.

Table 3-8: cSWH Assessment for Seasonal Concentration Areas of Animals

Seasonal Concentration Areas of Animals									
cSWH Type	Candidate Significant Wildlife Habitat (cSWH) Criteria				Assessment of cSWH				Carried Forward to EoS (Y/N)
	Indicator Species 3E	Indicator Species 3W	ELC Ecosite Codes	Habitat Criteria	Assessment Details	In Project Location (Y/N)	Within 50 m of Project Location (Y/N)	cSWH Feature ID	
Waterfowl Stopover and Staging Areas (Terrestrial)	American Black Duck, Wood Duck, Green-winged Teal, Blue-winged Teal, Mallard, Northern Pintail, Northern Shoveler, American Wigeon, Gadwall	Brant, Cackling Goose, Canada Goose, Snow Goose, Ross's Goose, Tundra Swan, Trumpeter Swan, Wood Duck, Gadwall, American Wigeon, American Black Duck, Mallard, Blue-winged Teal, Northern Shoveler, Northern Pintail, Green-winged Teal <i>Other:</i> Sandhill Crane	Focus on sites that have appropriate vegetation and highest likelihood of seasonal water accumulation. These include: B060-062, B077-079, B093-095, B109-111 Plus, evidence of annual spring flooding from meltwater or run-off within these ecosites.	- Open areas with sheet water during Spring (mid-March to June) or Fall (September to November). - Fields flooding during spring melt and run-off provide important invertebrate foraging habitat for migrating waterfowl. - Flood plains (flooded riverbanks). - Cultivated fields with waste grains are commonly used by waterfowl, these are not considered SWH.	There are active agricultural fields within and adjacent to the Project that may provide waste grains. While there may be areas within and adjacent to the Project with seasonal flooding, these areas are associated with active farmland. No observations of sheet water that could be used as stopover and staging habitat were observed throughout site visits or within satellite imagery for the area.	N	N	N/A	N
Waterfowl Stopover and Staging Areas (Aquatic)	Canada Goose, Cackling Goose, Snow Goose, American Black Duck, Northern Pintail, Northern Shoveler, American Wigeon, Gadwall, Green-winged Teal, Blue-winged Teal, Hooded Merganser, Common Merganser, Lesser Scaup Greater Scaup, Long-tailed Duck, Surf Scoter, White-winged Scoter, Black Scoter, Ring-necked Duck, Common Goldeneye, Bufflehead, Redhead, Ruddy Duck, Red-breasted Merganser, Brant, Canvasback, Tundra Swan, Trumpeter Swan	Brant, Cackling Goose, Canada Goose, Greater White-fronted, Goose, Snow Goose, Ross's Goose, Tundra Swan, Trumpeter Swan, Wood Duck, Gadwall, American Black Duck, American Wigeon, Mallard, Blue-winged Teal, Northern Shoveler, Northern Pintail, Green-winged Teal, Canvasback, Redhead, Ring-necked Duck, Lesser Scaup, Greater Scaup, Harlequin Duck, Surf Scoter, White-winged Scoter, Black Scoter, Long-tailed Duck, Bufflehead, Common Goldeneye, Common Merganser, Hooded Merganser, Red-breasted Merganser, Ruddy Duck <i>Others:</i> Red-necked Grebe, American Coot, Sandhill Crane, Common Loon, Red-throated Loon Special Concern: Horned Grebe	B142-152	- Ponds, marshes, lakes, bays, coastal inlets, and watercourses used during migration. Sewage treatment ponds and stormwater ponds do not qualify as a SWH; however, a reservoir managed as a large wetland or pond/lake does qualify. - These habitats have an abundant food supply (mostly aquatic invertebrates and vegetation in shallow water). - Sites with Wild Rice have a high likelihood of being a waterbird stopover and staging area.	Wetlands are present in and within 50 m of the Project Location; however, the marsh habitat likely does not support large aggregates of waterfowl due to the size of the features. None of the wetlands in proximity to the Project Location exhibit open water habitat sizable enough to support Waterfowl Stopover and Staging Areas. This habitat type is considered not present.	N	N	N/A	N

Seasonal Concentration Areas of Animals									
cSWH Type	Candidate Significant Wildlife Habitat (cSWH) Criteria				Assessment of cSWH				Carried Forward to EoS (Y/N)
	Indicator Species 3E	Indicator Species 3W	ELC Ecosite Codes	Habitat Criteria	Assessment Details	In Project Location (Y/N)	Within 50 m of Project Location (Y/N)	cSWH Feature ID	
Shorebird Migratory Stopover Area	Black-bellied Plover, American Golden-Plover, Semipalmated Plover, Solitary Sandpiper, Spotted Sandpiper, Semipalmated Sandpiper, Pectoral Sandpiper, White-rumped Sandpiper, Baird's Sandpiper, Least Sandpiper, Stilt Sandpiper, Short-billed Dowitcher, Red-necked Phalarope, Wilson's Phalarope, Whimbrel, Ruddy Turnstone, Sanderling, Dunlin, Wilson's Snipe	Black-bellied Plover, American Golden-Plover, Semipalmated Plover, Killdeer, Whimbrel, Hudsonian Godwit, Marbled Godwit, Ruddy, Turnstone, Stilt Sandpiper, Sanderling, Dunlin, Baird's Sandpiper, Least Sandpiper, White-rumped Sandpiper, Buff-breasted Sandpiper, Pectoral Sandpiper, Semipalmated Sandpiper, Short-billed Dowitcher, Wilson's Snipe, Spotted Sandpiper, Solitary Sandpiper, Greater Yellowlegs, Lesser Yellowlegs, Wilson's Phalarope	B005-006, B160-162, B170-172, B176-178, B186-188, B204, B207, B154-156	- Shorelines of lakes, rivers and wetlands, including beach areas, bars and seasonally flooded, muddy and un-vegetated shoreline habitats. - Great Lakes coastal shorelines, including groynes and other forms of armour rock lakeshores, are extremely important for migratory shorebirds in May to mid-June and early July to October. Will likely require multiple site visits. - Storm water retention ponds, cultivated fields, and sewage lagoons are not considered SWH.	There are no beaches, beach bars, sand dunes in or within 50 m of the Project Location. There are no requisite ecosites found on or within 50 m of the Project Location and no indicator species were confirmed during the time of the Site Investigation. This habitat feature is considered not present.	N	N	N/A	N
Colonially – Nesting Bird Breeding Habitat (Bank and Cliff)	Cliff Swallow	Northern Rough-winged Swallow (this species is not colonial but can be found in Cliff Swallow colonies), Cliff Swallow <u>Threatened:</u> Bank Swallow	Cliff faces, bridge abutments, silos, barns (Cliff Swallows). Habitat found but not limited to the following ecosites: B001-004, B157-159, B173-175	- Any site or areas with exposed soil banks, undisturbed or naturally eroding that is not a licensed/permitted aggregate area. - Does not include man-made structures (bridges or buildings) or recently (2 years) disturbed soil areas, such as berms, embankments, soil or aggregate stockpiles. - Does not include a licensed/permitted Mineral Aggregate Operation.	There were no cliffs or banks observed on or within 50 m of the Project Location that would provide suitable habitat for colonially nesting bird breeding habitat (cliff). This habitat type is considered not present.	N	N	N/A	
Colonially – Nesting Bird Breeding Habitat (Trees/Shrubs)	Great Blue Heron, Bonaparte's Gull, Double-crested Cormorant	Bonaparte's Gull, Black Tern, Double-crested, Cormorant, Great Blue Heron	<u>Swamp</u> – SWM2, SWM3, SWM5, SWM6, SWD1, SWD2, SWD3, SWD4, SWD5, SWD6, SWD7 <u>Fen</u> – FET1 May include a wide variety of tall treed ecosites. Habitat selection based on close proximity to water body or on island: B011-019, B023-028, B033-043, B045-059, B048-059, B064-076, B081-092, B097-108, B113-137, B161-162, B177-178, B222-224	- Great Blue Herons nest in live or dead standing trees in wetlands, lakeshores, islands, and peninsulas. Shrubs and occasionally emergent vegetation may also be used. - Most nests in trees are 11 to 15 m from ground, near the top of the tree. - Bonaparte's Gulls nest in coniferous trees (preferably spruce-fir) near fens, bogs, swamps, ponds or lakes. - Double-crested Cormorants prefer to nest in trees but will nest on the ground as well where trees are limited or have died and fallen.	Though wetlands are present within the Project Location, no wetlands are of sufficient size to support colonial nesting birds. Therefore, this habitat type is considered not present. No observation of colonial nesting bird activity was noted throughout site investigations.	N	N	N/A	

Seasonal Concentration Areas of Animals									
cSWH Type	Candidate Significant Wildlife Habitat (cSWH) Criteria				Assessment of cSWH				Carried Forward to EoS (Y/N)
	Indicator Species 3E	Indicator Species 3W	ELC Ecosite Codes	Habitat Criteria	Assessment Details	In Project Location (Y/N)	Within 50 m of Project Location (Y/N)	cSWH Feature ID	
Colonially – Nesting Bird Breeding Habitat (Ground)	Herring Gull, Ring-billed Gull, Common Tern, Double-crested Cormorant, Brewer's Blackbird	Ring-billed Gull, Herring Gull, Common Tern, Caspian Tern, Double-crested, Cormorant, Brewer's Blackbird <u>Threatened:</u> American White Pelican	Any rocky island or peninsula (natural or artificial) within a lake or large river. B160-165, B169-172, B176-181, B185-188 Close proximity to watercourses in open fields or pastures with scattered trees or shrubs (Brewer's Blackbird). B008-009, B020-021, B030-031, B045-046, B061-062, B078-079, B094-095, B110-111, B142-144 <u>Meadow Marsh</u> – MAM1-6 <u>Shallow Marsh</u> – MAS1-3 <u>Cultural Meadow</u> – CUM	- Nesting colonies of gulls and terns are on islands or peninsulas (natural or artificial) associated with open water or in marshy areas, lakes or large rivers. - Brewer's Blackbird colonies are found loosely on the ground in or in low bushes near streams and irrigation ditches within farmlands. - Double-crested Cormorants prefer to nest in trees but will nest on the ground as well where trees are limited or have died and fallen.	There is no habitat potential for gulls and terns within the Project Location. This habitat feature is considered not present. Habitat potential exists for Brewer's Blackbird within small select areas of the Project Location, however, low quality and is considered not present.	N	N	N/A	
Bald Eagle and Osprey Nesting	Osprey <u>Special Concern Species:</u> Bald Eagle	Osprey <u>Special Concern Species:</u> Bald Eagle <u>Endangered:</u> Golden Eagle	Treed communities directly adjacent to riparian areas – rivers, lakes, ponds and wetlands. Important habitat includes forested ecosites within the vicinity of lakes and rivers that receive large runs of salmonids. Undisturbed mature trees or snags disturbed evenly along shorelines are important. Most individual trees used for perching are "super canopy" trees.	Most sites have been used for several years. Mostly associated with large river systems and lake confluences. Can be important hunting locations in Spring, Fall, or Winter. Storm water facilities, retention ponds, and sewage lagoons are not considered SWH. Nests are associated with lakes, ponds, rivers or wetlands along forested shorelines, islands, or on structures over water. - Osprey nests are usually at the top a tree whereas Bald Eagle nests are typically in super canopy trees in a notch within the tree's canopy. - Nests located on man-made objects are not to be included as SWH (e.g., telephone poles and constructed nesting platforms).	There are four deciduous woodlands on and within 50 m of the Project Location. One Bald Eagle nest was observed during 2025 studies. However, the nest is located adjacent to the Project Location. No Osprey nests were observed within 50 m of the Project Location during the time of the site investigations.	N	Y	BAE-1	Y

Seasonal Concentration Areas of Animals									
cSWH Type	Candidate Significant Wildlife Habitat (cSWH) Criteria				Assessment of cSWH				Carried Forward to EoS (Y/N)
	Indicator Species 3E	Indicator Species 3W	ELC Ecosite Codes	Habitat Criteria	Assessment Details	In Project Location (Y/N)	Within 50 m of Project Location (Y/N)	cSWH Feature ID	
Sharp-tailed Grouse Leks	Sharp-tailed Grouse	Sharp-tailed Grouse	B029-031, B044-046, B060-062, B077-079, B093-095, B109-111, B126, B136-141	- Leks are an important habitat feature required to maintain populations of sharp-tailed grouse. - The lek or dancing ground consists of bare, grassy area as the core of the lekking area and may contain some sparse shrubland. - There is often a knoll or slightly elevated rise in topography associated with the site. This is a better drained site less likely to collect water. - Leks are typically a grassy field/meadow separated by >15 ha from adjacent shrublands and >30 ha from adjacent treed areas. - Field/meadows are to be >15 ha when adjacent to shrubland and >30 ha when adjacent to deciduous stands. - Field/meadows are to be as undisturbed as possible with low intensities of agriculture (light grazing or late haying). - Leks will be used annually if not destroyed by cultivation or invasion of woody plants or tree planting.	Incidental observations of multiple Sharp-tailed Grouse were made during the 2025 site investigations. However, given the size and proximity to other woodland and anthropogenic features, it is unlikely to support Lek habitat.	N	N	N/A	
Bat Hibernaculum	Big Brown Bat, Tri-coloured Bat	Big Brown Bat <u>Endangered:</u> Little Brown Myotis, Northern Long-eared Myotis, Eastern Small-footed Myotis, Tricolored Bat	B158-159, B164-165, B174-175, B180-181 Caves and mine shafts are the important features. Commonly associated as components of either Cliff or Rock Barren ecosites.	- Hibernacula may be found in abandoned caves, addits, mine shafts, underground foundations and karsts. - Active mine sites should not be considered as SWH. - The locations of bat hibernacula are relatively poorly known. - Buildings are not considered to be SWH.	There are no crevices or caves on or within 50 m of the Project Location. This habitat feature is considered not present.	N	N	N/A	N
Bat Maternity Colony	Big Brown Bat, Silver-haired Bat	Big Brown Bat, Silver-haired Bat <u>Endangered:</u> Little Brown Myotis, Northern Long-eared Myotis, Eastern Small-footed Myotis, Tricolored Bat	Maternity colonies considered SWH are found in treed Ecosites. B011-019, B015-109, B023-028, B033-043, B039-043, B048-059, B054-059, B064-076, B081-092, B097-108, B113-125, B126-133, B222-224 Aspen is an important feature in Ecoregion 3E & 3W, primarily the presence of larger diameter trees in older mixed-wood stands.	- Maternity colonies can be found in tree cavities, vegetation and often in buildings (buildings are not considered to be SWH). - Maternity roosts are not found in caves and mines in Ontario. - Maternity colonies located in Mature (dominant trees >80 yrs old) deciduous or mixed forest stands with >10 ha large diameter (>25 cm dbh) wildlife trees. - Female Bats prefer wildlife trees (snags) in early stages of decay, Class 1 or 2 or Class 2 to 4, can be living or with bark mostly intact. - Silver-haired Bats prefer older mixed or deciduous forest and form maternity colonies in tree cavities and small hollows. Older forest areas with at least 21 snags/ha are preferred.	There are woodlands within 50 m of the Project Location. These woodlands are assumed to have potential roosting habitat. As this habitat type is considered generalized, habitat use surveys are not required. Potential negative environmental effects and recommended mitigation measures will be provided for this habitat type in the EIS. Acoustic monitoring was conducted during the month of June to assess presence/absence of potential bat species under the <i>Endangered Species Act</i> guidance.	Y	Y	Bat 1 and Bat 2	Y (Generalized c)

Seasonal Concentration Areas of Animals									
cSWH Type	Candidate Significant Wildlife Habitat (cSWH) Criteria				Assessment of cSWH				Carried Forward to EoS (Y/N)
	Indicator Species 3E	Indicator Species 3W	ELC Ecosite Codes	Habitat Criteria	Assessment Details	In Project Location (Y/N)	Within 50 m of Project Location (Y/N)	cSWH Feature ID	
Turtle Wintering Areas	Midland Painted Turtle <u>Special Concern:</u> Snapping Turtle	Painted Turtle (Western and Midland) <u>Special Concern:</u> Snapping Turtle	<u>Marsh</u> – MA <u>Open Fen</u> – FEO <u>Open Bog</u> – BOO Lakes, wetlands, ponds, and ecosites: B128-142, B145-152	- For most turtles, wintering areas are in the same general area as their core habitat. Water must be deep enough not to freeze and have soft mud substrates. - Over-wintering sites are permanent waterbodies, large wetlands, and bogs or fens with adequate dissolved oxygen. - Year-round persistence of standing or flowing water to depth, or presence of springs to prevent freezing is key. - Man-made ponds such as sewage lagoons or stormwater ponds should not be considered SWH. - Both Midland and Western Painted Turtles are present in 3W.	There are four wetlands that interact with the Project Location, of which, one has open water components (Mather I Creek); however, this channel is narrow and highly vegetated. The depth of the creek is considered shallow and would be subject to freezing during the overwintering period which would not be considered suitable for turtles. Therefore, this feature is considered not present.	N	N	N/A	N
Reptile Hibernacula	Eastern Garter snake, Smooth Green Snake, Northern Ringneck Snake, Northern Redbelly Snake	Eastern Garter snake Northern Redbelly Snake	For all snakes, habitat may be found in any forested ecosite in northern Ontario. Talus, rock barren, crevice and caves are more typically related to these habitats. Many suitable conditions also observed in the very shallow ecosite particularly on fractured bedrock and lower veg cover. Open and Sparse Tall/Low Treed Shrub Systems. B008-028, B128-139, B158-159, B164-165, B167-172, B174-175 B180-181, B183-188	- For snakes, hibernation takes place in sites located below frost lines in burrows, rock crevices and other natural or naturalized locations. - The existence of features that go below frost line; such as rock piles or slopes, old stone fences, and abandoned crumbling foundations assist in identifying candidate SWH. - Observation of congregating snakes on sunny warm days in the spring or fall is a good indicator of a hibernaculum. - Large numbers of roadkill during period of emergence in spring can also be an indicator that a hibernaculum is nearby. - Areas of broken and fissured rock are particularly valuable since they provide access to subterranean sites below the frost line. - Wetlands can also be important over-wintering habitat in conifer or shrub swamps and swales, poor fens, or depressions in bedrock terrain with sparse trees or shrubs with sphagnum moss or sedge hummock ground cover.	There are woodlands in and within 50 m of the Project Location; however, they do not provide suitable hibernacula habitat for snakes due to the lack of rock crevices, burrows and rocky outcrops. Therefore, this feature is considered not present.	N	N	N/A	N

Table 3-9: cSWH Assessment for Rare Vegetation Communities

Rare Vegetation Communities									
cSWH Type	Candidate Significant Wildlife Habitat (cSWH) Criteria				Assessment of cSWH				Carried Forward to EoS (Y/N)
	Indicator Species 3E	Indicator Species 3W	ELC Ecosite Codes	Habitat Criteria	Assessment Details	In Project Location (Y/N)	Within 50 m of Project Location (Y/N)	cSWH Feature ID	
Cliffs and Cliff Rim, including Talus Slopes	N/A	<u>Granitic cliff species:</u> <i>Polypodium virginianum</i>, <i>Deschampsia cespitosa</i>, <i>Umbilicaria</i> sp., <i>Betula papyrifera</i> <u>Basic cliff indicator species:</u> <i>Polypodium virginianum</i>, <i>Woodsia ilvensis</i>, <i>Cystopteris fragilis</i>,<i>Danthonia spicata</i>, <i>Dechampsia flexuosa</i>, <i>Aquilegia canadensis</i>, <i>Campanula gieseckiana</i>, <i>Sibbaldiopsis tridentate</i>, <i>Selaginella rupestris</i>, <i>Cladina rangiferina</i>, <i>Cladina mitis</i>, <i>Vaccinium angustifolium</i>, <i>Arctostaphylos uva-ursi</i>, <i>Diervilla lonicera</i>, <i>Betula papyrifera</i> <u>Drier/warmer diabase cliff species:</u> <i>Umbilicaria</i> sp. <i>Artemisia campestris</i>, <i>Campanula gieseckiana</i>, <i>Heuchera richardsonii</i>, <i>Sibbaldiopsis tridentate</i>, <i>Toxicodendron rydbergii</i>, <i>Parthenocissus inserta</i> <u>Cooler/wetter diabase cliff species:</u> <i>Woodsia glabella</i>, <i>Trisetum spicatum</i>, <i>Saxifraga paniculata</i>, <i>Cystopteris laurentiana</i>, <i>Polygonum viviparum</i>, <i>Solidago uliginosa</i>, <i>Cystopteris fragilis</i> <u>Talus species:</u> <i>Polypodium virginanum</i>, <i>Agrostis scabra</i>, <i>Aralia hispida</i>, <i>Woodisa ilvensis</i>, <i>Aralia nudicaulis</i>, <i>Cladina rangiferina</i>, <i>Cladina mitis</i>, <i>Diervilla lonicera</i>, <i>Alnus viridis</i> ssp. <i>crispa</i>, <i>Prunus pensylvanica</i>, <i>Betula papyrifera</i>, <i>Populus tremuloides</i>	Uncommon to rare in Ecoregion 3E. <u>Cliffs:</u> B157-159, B173-175, B201-203 <u>Talus:</u> B166-168, B182-184	Acidic sites include granitic and sandstones. These sites are nutrient poor, typically with very few plant species. Cliffs: Vertical consolidate bedrock communities with a minimum height of 3 m and a slope of >60° or 173%. They have limited plant growth and species diversification. Ground cover dominated by lichen and bryophytes. Plant communities are tolerant of environmental extremes, well adapted to desiccation, rapid fluctuations in temperature, and low availability of nutrients. Diabase cliffs are relatively richer sites that tend to have more diverse plant communities and a larger array of potential rare species. Cliffs that are warmer and drier than normal have a better likelihood of containing plants with more southern or prairie affinities. Cliffs that have cooler and wetter microclimates than normal have a better likelihood of containing Arctic-Alpine disjuncts. Cliff Rim: Exposed bedrock areas on top of face of cliff. Typically narrow, with very shallow soil and lacking trees (may be stunted). Plant communities are tolerant of environmental extremes, well adapted to desiccation, rapid fluctuations in temperature, and low availability of nutrients. Talus: Rock accumulations at the base of cliffs, or former cobble beaches left behind after lake levels drop. These have a skeletal soil structure, and can have organic accumulations between the rocks. Lichen cover usually extensive. Trees and shrubs are stunted. Herbs and graminoids limited to patches of organic or mineral soil accumulations. Talus slopes can provide unique and isolated habitat for rare plants and vegetation communities that can be significantly impacted by disturbance such as invasive species and/or trampling or removal of the talus.	There are no cliffs or talus slopes on or within 50 m of the Project Location.	N	N	N/A	N

Rare Vegetation Communities									
cSWH Type	Candidate Significant Wildlife Habitat (cSWH) Criteria				Assessment of cSWH				Carried Forward to EoS (Y/N)
	Indicator Species 3E	Indicator Species 3W	ELC Ecosite Codes	Habitat Criteria	Assessment Details	In Project Location (Y/N)	Within 50 m of Project Location (Y/N)	cSWH Feature ID	
Rock Barren	N/A	<u>Rock Barren species:</u> <i>Danthonia spicata</i> , <i>Deschampsia flexuosa</i> , <i>Elymus trachycaulus</i> , <i>Carex pensylvanica</i> , <i>Corydalis sempervirens</i> , <i>Aralis hispida</i> , <i>Agrostis scabra</i> , <i>Aralia nudicaulis</i> , <i>Pteridium aquilinum</i> , <i>Vaccinium angustifolium</i> , <i>Rubus</i> spp., <i>Diervilla lonicera</i> , <i>Betula papyrifera</i> , <i>Pinus banksiana</i> , <i>Populus tremuloides</i>	<u>Calcareous Rock Barren:</u> B179, B180, B181 <u>Precambrian Rock Barren:</u> B163, B164, 164 <u>Basic Rock Barren:</u> B180-181 <u>Acidic Rock Barren:</u> B163-165	Exposed bedrock areas (mostly exposed rock with <5 cm mineral or <10 cm organic material) and <25% vascular vegetation. Rock barrens have limited plant growth and species diversification. Ground cover dominated by lichens and bryophytes. Plant communities are tolerant of environmental extremes, well adapted to desiccation, rapid fluctuations in temperature, and low availability of nutrients. Acidic rock barrens in 3W include granitic and sandstones. These sites are nutrient poor sites with very few plant species. Basic (mainly diabase) rock barrens are relatively richer sites that tend to have more diverse plant communities and a larger array of potential rare species. Exposed bedrock areas (mostly exposed rock with <5cm mineral or <10cm organic material) and <25% vascular vegetation.	There are no rock barrens on or within 50 m of the Project Location.	N	N	N/A	N
Sand Dunes (Including Freshwater Coastal Dunes) Notably: American Dune Grass Type	N/A	Characteristics plant species of sand dunes grasses type in 3W include: <i>Ammophila</i> <i>Breviligulata</i> , <i>Artemisia campestris</i> spp. <i>caudata</i> , <i>Elymus trachycaulus</i> , <i>Leymus mollis</i> , <i>Lathyrus japonicus</i> , <i>Xanthium strumarium</i> , <i>Prunus pumila</i> var. <i>pumila</i> , <i>Hudsonia tomentosa</i> <u>Other species may include:</u> <i>Anemone multifida</i> , <i>Arabidopsis lyrata</i> , <i>Arctostaphylos uva-ursi</i> , <i>Campanula gieseckiana</i> , <i>Cornus stolonifera</i> , <i>Elymus canadensis</i> , <i>Equisetum hyemale</i> , <i>Festuca saximontana</i> , <i>Juniperus communis</i> , <i>Anthoxanthum hirtum</i> , <i>Maianthemum stellatum</i> , <i>Pinus resinosa</i> , <i>Pinus strobus</i> , <i>Polygonella articulata</i> , <i>Pteridium aquilinum</i> , <i>Salix interior</i> , <i>Salix myricoides</i> , <i>Trisetum melicoides</i> <u>Threatened:</u> <i>Pitcher's Thistle</i>	Rare and limited within 3W. B005-B008, B020, B030, B142, B155	Exposed mineral material community often associated with shorelines of lakes or exposed inland mineral material that has been shaped by eolian (wind) processes. Open grassy sand dunes with Indicator Species: American dune grass, beach pea, and sand cherry. Scattered white spruce forest islands may also occur.	There are no sand dunes on or within 50 m of the Project Location.	N	N	N/A	N
Rare Arctic-Alpine Shoreline Plant Communities (Including Great Lakes)	N/A	<u>Arctic Alpine Species:</u> <i>Allium schoenoprasum</i> var. <i>sibiricum</i> , <i>Anemone parviflora</i> , <i>Antennaria rosea</i> , <i>Arenaria humifusa</i> , <i>Arnica cordifolia</i> , <i>Astragalus alpinus</i> , <i>Bistorta vivipara</i> , <i>Calamagrostis purpurascens</i> , <i>Calamagrostis</i>	B161, B162 (can include other ecosites)	Primarily found on the shoreline of Lake Superior on open basic bedrock. Vegetation consists mostly of arctic-alpine species. Inland can be found on rocky shorelines of rivers and streams, cliff tops, canyons, and peatlands. These relict populations are rare and declining and thought to have persisted in suitable habitats following the retreat of the glaciers approximately 11,000 years ago.	There are no arctic-alpine shoreline habitats on or within 50 m of the Project Location.	N	N	N/A	N

Rare Vegetation Communities									
cSWH Type	Candidate Significant Wildlife Habitat (cSWH) Criteria				Assessment of cSWH				Carried Forward to EoS (Y/N)
	Indicator Species 3E	Indicator Species 3W	ELC Ecosite Codes	Habitat Criteria	Assessment Details	In Project Location (Y/N)	Within 50 m of Project Location (Y/N)	cSWH Feature ID	
		<i>stricta</i> ssp. <i>inexpansa</i> , <i>Carex atratiformis</i> , <i>Carex glacialis</i> , <i>Carex scirpoidea</i> , <i>Carex supina</i> , <i>Castilleja septentrionalis</i> , <i>Cerastium alpinum</i> , <i>Chamerion latifolium</i> , <i>Chrysosplenium tetrandrum</i> , <i>Cypripedium passerinum</i> , <i>Cystopteris montana</i> , <i>Draba aurea</i> , <i>Draba cana</i> , <i>Draba cinerea</i> , <i>Dryas drummondii</i> , <i>Dryas integrifolia</i> , <i>Empetrum nigrum</i> , <i>Epilobium hornemannii</i> , <i>Erigeron acris</i> , <i>Erigeron hyssopifolius</i> , <i>Erigeron lonchophyllus</i> , <i>Eriophorum brachyantherum</i> , <i>Eriophorum russeolum</i> , <i>Euphrasia hudsoniana</i> , <i>Euphrasia nemorosa</i> , <i>Euphrasia wettsteinii</i> , <i>Hedysarum alpinum</i> , <i>Huperzia appressa</i> , <i>Huperzia selago</i> , <i>Luzula parviflora</i> , <i>Moehringia macrophylla</i> , <i>Neottia borealis</i> , <i>Oxytropis borealis</i> , <i>Oxytropis splendens</i> , <i>Packera indecora</i> , <i>Packera pauciflora</i> , <i>Pinguicula vulgaris</i> , <i>Poa alpina</i> , <i>Poa glauca</i> , <i>Poa pratensis</i> ssp. <i>alpigena</i> , <i>Potentilla bimundorum</i> , <i>Pyrola grandiflora</i> , <i>Sagina nodosa</i> , <i>Salix myrtilifolia</i> , <i>Salix planifolia</i> , <i>Salix pseudomonticola</i> , <i>Salix pseudomyrsinites</i> , <i>Saxifraga oppositifolia</i> , <i>Saxifraga paniculata</i> , <i>Saxifraga tricuspidata</i> , <i>Selaginella selaginoides</i> , <i>Silene acaulis</i> , <i>Solidago multiradiata</i> , <i>Taraxacum ceratophorum</i> , <i>Tofieldia pusilla</i> , <i>Trichophorum cespitosum</i> , <i>Trisetum spicatum</i> , <i>Vaccinium caespitosum</i> , <i>Vaccinium uliginosum</i> , <i>Viola epipsila</i> , <i>Woodsia alpina</i> , <i>Woodsia glabella</i>		These open environments are maintained in part by the energy associated with river systems, which create a dynamic shoreline environment, particularly in areas where combinations of hydrology, topography and stream gradient are responsible for periodic flooding and associated flood-scour.					
Diverse and Sensitive Orchid Communities	N/A	Orchid indicator species include: <i>Calopogon tuberosus</i> , <i>Cypripedium arietinum</i> , <i>Cypripedium passerinum</i> , <i>Cypripedium reginae</i> , <i>Goodyera oblongifolia</i> , <i>Malaxi monophyllos</i> , <i>Malaxis paludosa</i> , <i>Neottia auriculata</i> , <i>Neottia borealis</i> ,	Will include a wide variety of ecosites. Diverse orchid communities are likely to be found in: B126-139, B222-224	Fungi provide orchids with a carbon source. By consuming the fungi, orchids are able to produce seed via photosynthesis or fungi consumption. In addition to their fungal relationships, many of the indicator and sensitive species or orchids in 3W are associated with hydric sites and are extremely sensitive to water level fluctuations. Horticultural or planted sites are not considered SWH.	Orchid species or their habitats were not identified on or within 50 m of the Project Location.	N	N	N/A	

Rare Vegetation Communities									
cSWH Type	Candidate Significant Wildlife Habitat (cSWH) Criteria				Assessment of cSWH				Carried Forward to EoS (Y/N)
	Indicator Species 3E	Indicator Species 3W	ELC Ecosite Codes	Habitat Criteria	Assessment Details	In Project Location (Y/N)	Within 50 m of Project Location (Y/N)	cSWH Feature ID	
		<i>Neottia Convallarioides</i> , <i>Platanthera hookeri</i> , <i>Platanthera lacera</i> . Other characteristic orchid species of diverse communities may include: <i>Arethusa bulbosa</i> , <i>Calypso bulbosa</i> , <i>Corallorhiza maculate</i> , <i>Corallorhiza striata</i> , <i>Corallorhiza trifida</i> , <i>Cypripedium acaule</i> , <i>Cypripedium parviflorum</i> var. <i>pubescens</i> , <i>Dactylorhiza viridis</i> , <i>Galearis rotundifolia</i> , <i>Goodyera repens</i> , <i>Goodyera tessellata</i> , <i>Liparis loeselii</i> , <i>Malaxis unifolia</i> , <i>Neottia cordata</i> , <i>Platanthera aquilonis</i> , <i>Platanthera clavellata</i> , <i>Platanthera dilatata</i> , <i>Platanthera huronensis</i> , <i>Platanthera obtusata</i> , <i>Platanthera orbiculata</i> , <i>Platanthera psycodes</i> , <i>Pogonia ophioglossoides</i> , <i>Spiranthes lacera</i> , <i>Spiranthes romanzoffiana</i>							
Hardwood Swamps	N/A	N/A	B130, B131, B132, B133	Dominant hardwood canopy that is located within lower topographic positions and subject to flooding. Nutrient regime is rich and substrate is mostly moderately deep too deep with variable textures. All hardwood swamp ecosites are considered significant.	There are no hardwood swamp habitats noted on and within 50 m of the Project Location.	N	N	N/A	N
Rare Treed Type: Red and White Pine Stands	N/A	N/A	B011, B015, B023, B027, B033, B039, B048, B054, B064, B069, B081, B087, B097, B103, B113, B118	Red and White Pine stands attain their northern limit near the northern margin of the Clay Belt. They occur as sporadic, small stands and are generally found on dry, often exposed, and rocky sites. However, these conditions can vary. Red and White Pine stands attain their northern limit in 3W. They occur as sporadic, small stands and are generally found on dry, often exposed, south-facing slopes and rocky sites. However, these conditions can vary.	There are no Red or White Pine stands on or within 50 m of the Project Location.	N	N	N/A	N
Rare Treed Type: Black Ash	Black Ash	Black Ash	B019, B028, B056, B059, B071, B076, B089, B092, B105, B108, B120, B125	Black Ash stands are found within low lying, predominantly alluvial material throughout the Clay Belt.	There are no Black Ash on or within 50 m of the Project Location.	N	N	N/A	N
Rare Treed Type: Elm	Elm Spp.	Elm Spp.	B019, B043, B056, B059, B071, B076, B089, B092, B105, B108, B120, B125	Elm stands are found within low lying, predominantly alluvial material throughout the Clay Belt.	There are no Elm stands on or within 50 m of the Project Location.	N	N	N/A	N
Rare Treed Type: Oak	Oak Spp.	N/A	B017, B019, B028, B041, B043, B057, B059, B072, B076, B090, B092, B106, B108, B121, B125	Hardwood canopy within lower topographic positions. Fresh to moist moisture regimes with variable substrate textures.	There are no Oak stands on or within 50 m of the Project Location.	N	N	N/A	N

Rare Vegetation Communities									
cSWH Type	Candidate Significant Wildlife Habitat (cSWH) Criteria				Assessment of cSWH				Carried Forward to EoS (Y/N)
	Indicator Species 3E	Indicator Species 3W	ELC Ecosite Codes	Habitat Criteria	Assessment Details	In Project Location (Y/N)	Within 50 m of Project Location (Y/N)	cSWH Feature ID	
Rare Treed Type: Red and Sugar Maple	Red and Sugar Maple	Red and Sugar Maple	B018, B019, B028, B042, B043, B058, B059, B073(Mh), B074(Mr), B075, B076, B091, B092, B107, B108, B122(Mh), B123(Mr), B124, B125	Hardwood canopy containing red and/or sugar maple. Generally on warmer-than-normal sites with a higher nutrient regime.	No Red or Sugar maple stands on or within 50 m of the Project Location.	N	N	N/A	N
Rare Treed Type: Mountain Ash (Lake Superior Coastline)	N/A	Mountain Ash	Will include a variety of ecosites.	Old-growth stands of Mountain Ash on the coast of Lake Superior.	No Mountain Ash stands on or within 50 m of the Project Location. Project is not located along the Lake Superior Coastline.	N	N	N/A	
Rare Treed Type: Yellow Birch	Yellow Birch	N/A	B019, B028, B040, B043, B055, B059, B070, B076, B088, B092, B104, B108, B119, B125	Hardwood canopy consisting mostly of yellow birch. Generally on warmer-than-normal sites with a higher nutrient regime.	No Yellow Birch stands on or within 50 m of the Project Location.	N	N	N/A	N
Other Rare Vegetation Communities (Provincially and Regional)	N/A	N/A	<u>S1 – Extremely rare</u> – usually 5 or fewer occurrences in the province, or very few remaining hectares. <u>S2 – Very rare</u> – usually between 5 and 20 occurrences in the province, or few remaining hectares. <u>S3 – Rare to uncommon</u> – usually between 20 and 100 occurrences in the province; may have fewer occurrences, but with some extensive examples remaining. At the time of publication, rare (S1-S3, SH) plant communities in 3W include: American Dune Grass – Beach Pea – Sand Cherry Dune Grassland Type (S2), Basic Open Cliff Type (S3S4), Boreal Acidic Sandstone Open Cliff Type (S2), Great Lakes Arctic-Alpine Basic Open Bedrock Shoreline Type (S3), Open Sandstone Cliff Type (S1).	ELC Ecosite codes that have the potential to be a rare ELC Vegetation Type as outlined in Appendix M. The OMNR/NHIC will have up-to-date listing for rare vegetation communities.	All vegetation communities on and within 50 m of the Project Location are common to the area. There are no rare vegetation communities on or within 50 m of the Project Location.	N	N	N/A	N

3.3.7.2.3 Specialized Habitat for Wildlife

The NHRM (MNR, 2010) describes specialized habitats for wildlife as:

- Areas that support wildlife species that have highly specific habitat requirements.
- Areas with high species and community diversity.
- Areas that provide habitat that greatly enhances species' survival.

The criteria outlined in the SWH Ecoregion 3E (MNR, 2015) and 3W (MNR, 2017) Criterion Schedule was used to determine the presence/absence and evaluate the significance of specialized wildlife habitat within the Project Location. An assessment of each of the habitat types associated with this category is provided in Table 3-10 below.

Table 3-10: cSWH Assessment for Specialized Habitat for Wildlife

Specialized Habitat for Wildlife									
cSWH Type	Candidate Significant Wildlife Habitat (cSWH) Criteria				Assessment of cSWH				Carried Forward to EoS (Y/N)
	Indicator Species 3E	Indicator Species 3W	ELC Ecosite Codes	Habitat Criteria	Assessment Details	In Project Location (Y/N)	Within 50 m of Project Location (Y/N)	cSWH Feature ID	
Waterfowl Nesting Area	American Black Duck, Northern Pintail, Northern Shoveler, Gadwall, Blue-winged Teal, Green-winged Teal, Wood Duck, Hooded Merganser, Common Merganser, Red-breasted Merganser, Mallard, Canada Goose, American Wigeon, Bufflehead, Common Goldeneye	Trumpeter Swan, Wood Duck, Gadwall, American Wigeon, American Black Duck, Blue-winged Teal, Northern Shoveler, Northern Pintail, Green-winged Teal Ring-necked Duck, Bufflehead, Common Goldeneye, Hooded Merganser, Red-breasted Merganser, Common Merganser	All upland habitats located adjacent to these wetland ELC Ecosites are Candidate SWH. B129-135, B140-152, B224 <u>Shallow Marsh</u> – MAS1, MAS2, MAS3 <u>Meadow Marsh</u> – MAM1, MAM2, MAM3, MAM4, MAM5, MAM6 Note: includes adjacency to Provincially Significant Wetlands.	A waterfowl nesting area extends 120 m from a wetland (>0.5 ha) or a wetland (>0.5 ha) and any small wetlands (0.5 ha) within 120 m or a cluster of 3 or more small (<0.5 ha) wetlands within 120 m of each individual wetland where waterfowl nesting is known to occur. - Upland areas should be at least 120 m wide so that predators such as raccoons, skunks, and foxes have difficulty finding nests. - Wood Ducks, Bufflehead, Common Goldeneye, and Hooded Mergansers utilize large diameter trees (>40 cm dbh) in woodlands for cavity nest sites.	There are no wetlands in or within 50 m of the Project Location. Therefore, this habitat type is considered not present.	N	N	N/A	N
Wild Rice Stand	N/A	<i>Zizania palustris</i> (Wild Rice)	B142-145, B148-152	Ponds, marshes, lakes, bays, coastal inlets, and watercourses with wild rice. These habitats have an abundant food supply for waterbirds. Sites with wild rice have a high likelihood of being a waterfowl stopover and staging area.	Wild rice and potential habitat is not present on or within 50 m of the Project Location, therefore this habitat is considered not present.	N	N	N/A	
Woodland Raptor Nesting Habitat	Red-tailed Hawk, Great-horned Owl, Broad-winged Hawk, Sharp-shinned Hawk, Merlin, Coopers Hawk, Northern Goshawk, Great Gray Owl, Long-eared Owl, Common Raven Cavity Nesters/users: Saw-whet Owl, Boreal Owl, Barred Owl, Northern Hawk Owl, American Kestrel (Northern Flying Squirrel use cavities as roosting sites in winter)	Stick nesters/users: Sharp-shinned Hawk , Cooper's Hawk, Northern Goshawk, Broad-winged Hawk, Red-tailed Hawk, Great Horned Owl, Barred Owl, Great Gray Owl, Long-eared Owl, Merlin, Common Raven Cavity Nesters/users: Great Horned Owl, Boreal Owl, Barred Owl, Northern Hawk Owl, Northern Saw-whet Owl, American Kestrel (Note: Bufflehead, Common Goldeneye, Wood Duck, Common Merganser and Hooded Merganser also use tree cavities for nesting. Northern Flying Squirrels use cavities as roosting sites in winter)	May be found in all forested ELC Ecosites. May also be found in: <u>Swamp</u> – SWD, SWC (directly adjacent to riparian areas – rivers, lakes, ponds and wetlands).	All natural or conifer plantation woodland/forest stands. - Stick nests found in a variety of intermediate-aged to mature conifer, deciduous or mixed forests within tops or crotches of trees. Species such as Merlin or Coopers Hawk nest along forest edges sometimes on peninsulas or small off-shore islands. - Some woodland raptors rely on cavity trees for nesting. They do not excavate their own cavities, they rely on natural cavities of sufficient size and those excavated by Pileated Woodpeckers. Larger diameter trees are used most frequently, with nest cavities most often found in trembling aspen. - Nest sites may be used again, or a new nest may be in close proximity to an old nest.	There are deciduous woodlands in and within 50 m of the Project Location. The woodland and do not meet the size criteria for consideration of cSWH and there is no interior forest habitat present. This habitat type is considered to be not present.	N	N	N/A	N

Specialized Habitat for Wildlife									
cSWH Type	Candidate Significant Wildlife Habitat (cSWH) Criteria				Assessment of cSWH				Carried Forward to EoS (Y/N)
	Indicator Species 3E	Indicator Species 3W	ELC Ecosite Codes	Habitat Criteria	Assessment Details	In Project Location (Y/N)	Within 50 m of Project Location (Y/N)	cSWH Feature ID	
Turtle Nesting Areas	Midland Painted Turtle <u>Special Concern Species:</u> Snapping Turtle	Painted Turtle (Western and Midland) <u>Special Concern Species:</u> Snapping Turtle <u>Threatened:</u> Blanding's Turtle	Exposed mineral soil (sand or gravel) areas adjacent (<100 m). <u>Shallow Marsh</u> – MAS1, MAS2, MAS3 <u>Shallow Water</u> – SAS1, SAM1, SAF1 <u>Open Bog</u> – BOO1 <u>Open Fen</u> – FEO1 B003, B006-007, B031, B171-172, B187-188	- Best nesting habitat for turtles are close to water and away from roads and sites less prone to loss of eggs by predation from skunks, raccoons or other animals. - For an area to function as a turtle-nesting area, it must provide sand and gravel that turtles are able to dig in and are located in open, sunny areas. Nesting areas on the sides of municipal or provincial road embankments and shoulders are not SWH. - Sand and gravel beaches adjacent to undisturbed shallow weedy areas of marshes, lakes, and rivers are most frequently used. - These habitats are rare and when identified will often be the only breeding site for local populations of turtles.	The wetlands in and within 50 m of the Project Location do not provide sand or gravel substrates suitable for turtle nesting and are closed canopy with little to no sun exposure. Roadsides on the northern portion of the Project Location do not provide SWH for nesting turtle populations. Therefore, this habitat type is considered not present.	N	N	N/A	N
Seeps and Springs	Selected wildlife species that utilize this feature: Ruffed Grouse, Moose, White-tailed Deer, Black Bear, Northern two-lined Salamander	Selected wildlife species that utilize this feature: Ruffed Grouse, Spruce Grouse, Moose, White-tailed Deer, Black Bear, Blue-spotted Salamander, Spotted Salamander <u>Threatened:</u> Forest-dwelling Woodland Caribou <u>Other species:</u> Brook Trout	Seeps/Springs are areas where groundwater comes to the surface. Often, they are found within headwater areas within forested habitats. Any forested Ecosite within the headwater areas of a stream could have seeps/springs.	Any forested area (with <25% meadow/field/pasture) within the headwaters of a stream or river system. Seeps and springs are important feeding and drinking areas especially in the winter will typically support a variety of plant and animal species.	There are no known seeps or springs within 50 m of the Project Location. No seeps or springs were documented during the Site Investigations. This habitat type is considered not present.	N	N	N/A	N
Aquatic Feeding Habitat	Moose	Moose	Habitat may be found in all forested ecosites adjacent to water.	- Aquatic feeding habitats are an extremely important habitat component for moose and other wildlife as they supply important nutrients. Forest cover adjacent to these areas is important as well to provide for summer thermal cover, screening and escape cover. - MNR maps these locations on Crown Land and rate the site on a scale of 1 to 4, with 4 having the greatest potential. Feeding sites classed 3 or 4 are candidate SWH. - MNR District should be contacted where Class 2 feeding sites are identified as these may be considered significant by MNR if higher quality sites are absent in the surrounding landscape. - Wetlands and isolated embayments in rivers or lakes which provide an abundance of submerged aquatic vegetation such as pondweeds, water milfoil and yellow water lily are preferred sites. Adjacent stands of lowland conifer or mixed woods will provide cover and shade.	Coniferous forested habitats and large open wetlands are absent from in or within 50 m of the Project Location. Therefore, this habitat type is considered not present.	N	N	N/A	N

Specialized Habitat for Wildlife									
cSWH Type	Candidate Significant Wildlife Habitat (cSWH) Criteria				Assessment of cSWH				Carried Forward to EoS (Y/N)
	Indicator Species 3E	Indicator Species 3W	ELC Ecosite Codes	Habitat Criteria	Assessment Details	In Project Location (Y/N)	Within 50 m of Project Location (Y/N)	cSWH Feature ID	
Mineral Licks	Moose, Porcupine	Moose, White-tailed Deer, Porcupine (other species may utilize these sites as well) <u>Threatened:</u> Woodland Caribou	Habitat may be found in all treed ecosites. Most probable in clay ecosites: B110-B125	- Mineral licks are a valuable habitat component but are also very rare on the landscape. - This habitat component is found in upwelling groundwater and the soil around these seepage areas. It typically occurs in areas of sedimentary and volcanic bedrock. In areas of granitic bedrock, the site is usually overlain with calcareous glacial till.	Seeps or spring were not documented within the site and the surrounding area is considered disturbed in conjunction with minimal forest cover. Therefore, this feature is considered not present.	N	N	N/A	N
Denning Sites for Mink, Otter, Gray Wolf, Eastern Wolf, Canada Lynx, Marten, Fisher, Black Bear	Mink, Otter, Gray Wolf, Canada Lynx <u>Special Concern:</u> Eastern Wolf <u>Cavity Users:</u> Marten, Fisher	Mink, Otter, Gray Wolf, Coyote, Canada Lynx, Bobcat, Black Bear, Red Fox <u>Cavity Users:</u> Marten, Fisher <u>Threatened:</u> Algonquin Wolf, Cougar, Gray Fox, and Wolverine	Habitat may be found in all treed ecosites.	- Mink prefer shorelines dominated by coniferous or mixed forests with dens usually underground. Mink will often use old muskrat lodges. They may den in root masses along shorelines of waterbodies. - Otters prefer undisturbed shorelines along waterbodies that support productive fish populations with abundant shrubby vegetation and downed woody debris for denning. They often use old beaver lodges or log jams and crevices in rock piles. - Marten and fisher share the same general habitat, requiring large tracts of coniferous or mixed forests of mature or older age classes. Denning sites are often in cavities in large trees or under large, downed woody debris. - Wolves prefer a more interior forest condition for locating their den sites. Wolves often select sandy sites, sloped for excavation (esker areas should be examined as potentially key sites). Wolf dens are often located in close proximity to wetlands. - Lynx dens are most often associated with the presence of downed woody debris. - Black bears, particularly sub-adults, will often den in the base of hollow trees. In 3E, such trees are rare and primarily consist of large diameter cedar or sometimes large white spruce.	Shorelines and large tracts of forests were not documented or observed within or 50 m outside of the Project Location. Therefore, this feature is considered not present.	N	N	N/A	N
Rendezvous Sites	Gray Wolf <u>Special Concern:</u> Eastern Wolf	N/A	Isolated open areas including bogs, fens, other wetlands, meadows, clearcuts.	- Rendezvous sites may be found in a variety of habitats such as open bogs, burns, clearcuts, beaver meadows, and open forest. - Rendezvous sites are often used by wolf packs during multiple years. - Areas used as rendezvous sites one year may be used as den sites in a subsequent year. - Wolves appear to have a low tolerance for human activity near rendezvous sites.	Rendezvous Sites were not documented within the site and the surrounding area is considered disturbed with active land management, cattle, and farm activities, in conjunction with minimal forest cover for this species to travel between sites. Therefore, this feature is considered not present.	N	N	N/A	N

Specialized Habitat for Wildlife									
cSWH Type	Candidate Significant Wildlife Habitat (cSWH) Criteria				Assessment of cSWH				Carried Forward to EoS (Y/N)
	Indicator Species 3E	Indicator Species 3W	ELC Ecosite Codes	Habitat Criteria	Assessment Details	In Project Location (Y/N)	Within 50 m of Project Location (Y/N)	cSWH Feature ID	
Amphibian Breeding Habitat (Woodland)	Eastern Newt, Blue-spotted Salamander, Spotted Salamander, Four-toed Salamander, Spring Peeper, Wood Frog, American Toad	Eastern Newt, Blue-spotted Salamander, Spotted Salamander, Spring Peeper, Wood Frog, American Toad, Gray Treefrog, Boreal Chorus Frog, Green Frog, Mink Frog, Mudpuppy	All treed upland ecosites, however more likely on fine textured moist ecosites (e.g., B119-125). The wetland breeding ponds (including vernal pools) may be permanent or seasonal, large or small in size and could be located within or adjacent to the woodland. <u>Forest</u> – FOC, FOM FOD <u>Swamp</u> – SWC SWM SWD	- Presence of a wetland, lake or pond (including vernal pools) >500 m² (about 25 m diameter) within or adjacent (within 120 m) to a woodland (no minimum size). Some small wetlands may not be mapped and may be important breeding pools for amphibians. - Woodlands with permanent ponds or those containing water in most years until mid-July are more likely to be used as breeding habitat. - Breeding pools within the woodland or the shortest distance from the forest habitat are more significant because of reduced risk to migrating amphibians and more likely to be used.	No vernal pools were observed on-site within the woodlands that intersect the Project Location. Few woodlands occur within the Project boundaries and are not thought to provide sufficient breeding habitat for amphibians. Therefore, this feature is considered not present.	N	N	N/A	N
Amphibian Breeding Habitat (Wetlands)	Eastern Newt, American Toad, Spotted Salamander, Four-toed Salamander, Blue-spotted Salamander, Gray Treefrog, Boreal Chorus Frog, Northern Leopard Frog, Green Frog, Mink Frog, Wood Frog, Spring Peeper	Eastern Newt, Blue-spotted Salamander, Spotted Salamander, Spring Peeper, Wood Frog, American Toad, Gray Treefrog, Boreal Chorus Frog, Green Frog, Mink Frog, Mudpuppy	Rich swamps and thickets, vernal/seasonal pooling, riparian and variety of wetland interiors and margins. B128-135, B141-152, B223-224 Typically, these wetland ecosites will be isolated (>120 m) from woodland ecosites; however, larger wetlands containing predominantly aquatic species (e.g., Green Frog) may be adjacent to woodlands. <u>Swamp</u> – SW <u>Marsh</u> – MA <u>Fen</u> – FE <u>Bog</u> – BO <u>Open Water</u> – OA <u>Shallow Water</u> – SA	- Wetlands and pools (including vernal pools) >500 m (about 25 m diameter) supporting high species diversity are significant; some small or ephemeral habitats may not be identified on MNR mapping and could be important amphibian breeding habitats. - Wetlands and pools need to persist until mid-July. - Presence of shrubs and logs increase significance of pond for some amphibian species because of available structure for calling, foraging, escape and concealment from predators. - Typically, these wetland ecosites will be isolated (>120 m) from woodland ecosites; however, larger wetlands containing predominantly aquatic species (e.g., Green Frog) may be adjacent to woodlands.	Wetlands present in and within 50 m of the Project Location that was confirmed to provide amphibian breeding habitat, as captured during APC surveys in 2025.	Y	Y	(APC 1 to 5)	Y
Mast Producing Areas	Black Bear, White-tailed Deer, Ruffed Grouse	N/A	All shrub and treed ecosites capable of producing mast.	- Mast is a very important food requirement for many wildlife species. - Significant tree species include mountain ash and pin cherry. Significant shrub species include blueberries, raspberries, beaked hazel, and choke cherry. - Some Oak or other hard-mast producing species may be present in 3E and significance should be evaluated as encountered because of its importance as a food source for various wildlife species. - Recently disturbed sites (fire or logging), large bedrock outcroppings, forest openings or utility corridors >1 ha provide excellent sites for mast producing shrubs. - Permanent open sites providing long-term food sources are more significant.	Minimal target species were identified and do not meet the 50% ground cover requirement. Therefore, this feature is considered not present.	N	N	N/A	N

3.3.7.2.4 Habitat for Species of Conservation Concern

A list of SoCC that have been recorded within 1 km of the Project Location is provided in Appendix A. The habitat guide and criteria outlined in the SWH Ecoregion 3E (MNR, 2015) and 3W (MNR, 2017) Criterion Schedule was used to determine the presence/absence and evaluate the significance of habitat for SoCC recorded within the Project Location. An assessment of each of the habitat guides associated with this category and whether they were identified during the Site Investigation and Targeted Surveys is provided in Table 3-11 below.

Table 3-11: cSWH Assessment for Habitat for Species of Conservation Concern

Habitat for Species of Conservation Concern									
cSWH Type	Candidate Significant Wildlife Habitat (cSWH) Criteria				Assessment of cSWH				Carried Forward to EoS (Y/N)
	Indicator Species 3E	Indicator Species 3W	ELC Ecosite Codes	Habitat Criteria	Assessment Details	In Project Location (Y/N)	Within 50 m of Project Location (Y/N)	cSWH Feature ID	
Marsh Breeding Bird Habitat	American Bittern, Sora, Red-necked Grebe, Pied-billed Grebe, Ring-necked Duck, Lesser Scaup, Ruddy Duck, American Coot, Sandhill Crane, Virginia Rail, Trumpeter Swan <u>Special Concern:</u> Black Tern, Yellow Rail	Trumpeter Swan, Ring-necked Duck, Green-winged Teal, Northern Shoveler, Pied-billed Grebe, Red-necked Grebe, Virginia Rail, Sora, American Coot, Sandhill Crane, Common Loon, American Bittern, Spotted Sandpiper, Sedge Wren, Marsh Wren <u>Special Concern:</u> Black Tern, Yellow Rail	B134-152	- Nesting occurs in wetlands. - All wetland habitat is to be considered as long as there is shallow water with emergent aquatic vegetation present. - Rich wetlands for these bird species are very productive and rare in Northern Ontario landscapes. - Storm water retention ponds and sewage lagoons are not considered SWH.	Wetlands in or within 50 m of the Project Location do not meet the criteria for SWH. Breeding bird surveys did not capture any of the target species. Therefore, this habitat type is considered not present.	N	N	N/A	N
Open Country Bird Breeding Habitat	Vesper Sparrow, Le Conte's Sparrow, Northern Harrier, Savannah Sparrow <u>Special Concern:</u> Short-eared Owl	Upland Sandpiper, Black-billed Magpie, Western Meadowlark, Eastern Bluebird, Vesper Sparrow, Le Conte's Sparrow <u>Special Concern:</u> Short-eared Owl <u>Threatened:</u> Bobolink, Eastern Meadowlark	All Field, Meadow and Sparse Shrub ecosites: B08-09, B020-021, B029-31, B044-046, B060-062, B077-079, B093-095, B109-111, B136-141	- Large field/meadow areas (includes natural and cultural fields and meadows) >30 ha. - Field/meadow not Class 1 or 2 agricultural lands, and not being actively used for farming (i.e., no row cropping or intensive hay or livestock pasturing in the last 5 years). - Field/meadow sites considered significant should have a history of longevity, either abandoned fields, mature hayfields and pasturelands that are at least 5 years or older. - The indicator bird species are area sensitive requiring larger field/meadow areas than the common grassland species.	Meadow communities confirmed breeding presence of Savannah Sparrows only. As per 3W indicator species, Bobolink and Western Meadowlark were identified within the Project Location. However, soil and zoning class indicate these fields and meadows are designated as Classes 1 and 2, which does not meet the criteria to be considered SWH. Thus, this habitat type is considered not present. The majority of Project areas are associated with existing agricultural activities, however, provide nesting habitat during the active season for Bobolink.	N	N	N/A	N
Shrub/Early Successional Bird Breeding Habitat	Clay-coloured Sparrow, Field Sparrow, Ruffed Grouse, Eastern Kingbird, American Woodcock	N/A	All Sparse shrub and Shrub ecosites: B09-010, B021-022, B031-032, B046-047, B062-063, B079-080, B095-096, B111-112, B134-135	This wildlife habitat is declining throughout Ontario and North America. - Large natural field areas succeeding to shrub and thicket habitats >30 ha in size. Shrub land or early successional fields, not Class 1 or 2 agricultural lands, not being actively used for farming (i.e., no row-cropping, hay or live-stock pasturing in the last 5 years). - Larger shrub thicket habitats (>30 ha) are most likely to support and sustain a diversity of these species. - Shrub and thicket habitat sites considered significant should have a history of longevity, either abandoned fields or lightly grazed pasturelands.	While thicket communities exist within the Project Location, these communities do not meet the size requirements to be considered SWH. Additionally, none of the listed species were documented during site investigations, including targeted BBS. Therefore, this habitat type is considered not present.	N	N	N/A	N

Habitat for Species of Conservation Concern								
cSWH Type	Candidate Significant Wildlife Habitat (cSWH) Criteria			Assessment of cSWH				Carried Forward to EoS (Y/N)
	Indicator Species	ELC Ecosite Codes	Habitat Criteria	Assessment Details	In Project Location (Y/N)	Within 50 m of Project Location (Y/N)	cSWH Feature ID	
Special Concern and Rare Wildlife Species All Special Concern and Provincially Rare (S1-S3, SH) plant and animal species. Lists of these species are tracked by the Natural Heritage Information Centre (NHIC).	American Coot (<i>Fulica americana</i>)	All plant and animal element occurrences (EO) within a 1 or 10 km grid. Older EO were recorded prior to GPS being available; therefore, location information may lack accuracy.	When an EO is identified within a 1 or 10 km grid for a Special Concern or provincially Rare species; linking candidate habitat on the site needs to be completed to ELC Ecosites.	Not observed during targeted studies. Habitat for the American Coot is limited on site with only a small tributary of Mather Creek representing the only aquatic area in proximity to the site. The Project has been setback a minimum of 50 m from this feature.	N	N	SoCC-01	N
	American White Pelican (<i>Pelecanus erythrorhynchos</i>)	All plant and animal element occurrences (EO) within a 1 or 10 km grid. Older EO were recorded prior to GPS being available; therefore, location information may lack accuracy.	When an EO is identified within a 1 or 10 km grid for a Special Concern or provincially Rare species; linking candidate habitat on the site needs to be completed to ELC Ecosites.	Not observed during targeted studies. Habitat for the species is limited on site with only a small tributary of Mather Creek representing the only aquatic area in proximity to the site. The Project has been setback a minimum of 50 m from this feature.	N	N	SoCC-02	N
	Bank Swallow (<i>Riparia riparia</i>)	All plant and animal element occurrences (EO) within a 1 or 10 km grid. Older EO were recorded prior to GPS being available; therefore, location information may lack accuracy.	When an EO is identified within a 1 or 10 km grid for a Special Concern or provincially Rare species; linking candidate habitat on the site needs to be completed to ELC Ecosites.	Not observed during targeted studies. Habitat for the species is limited on site with few areas of distinct banks to support nesting colonies. No bank swallow activity was observed during Site Investigations.	N	N	SoCC-03	Y (Carried forward to EIS)
	Barn Swallow (<i>Hirundo rustica</i>)	All plant and animal element occurrences (EO) within a 1 or 10 km grid. Older EO were recorded prior to GPS being available; therefore, location information may lack accuracy.	When an EO is identified within a 1 or 10 km grid for a Special Concern or provincially Rare species; linking candidate habitat on the site needs to be completed to ELC Ecosites.	Not observed during targeted studies. No anthropogenic structures with potential for nesting activities are present within 120 m of the Project Location.	N	N	SoCC-04	Y (Carried forward to EIS)
	Black Tern (<i>Chlidonias niger</i>)	All plant and animal element occurrences (EO) within a 1 or 10 km grid. Older EO were recorded prior to GPS being available; therefore, location information may lack accuracy.	When an EO is identified within a 1 or 10 km grid for a Special Concern or provincially Rare species; linking candidate habitat on the site needs to be completed to ELC Ecosites.	Not observed during targeted studies. Limited habitat exists for Black Tern in proximity to the Project given a distinct lack of open water marsh habitats.	N	N	SoCC-05	N
	Black-billed Magpie (<i>Pica hudsonia</i>)	All plant and animal element occurrences (EO) within a 1 or 10 km grid. Older EO were recorded prior to GPS being available; therefore, location information may lack accuracy.	When an EO is identified within a 1 or 10 km grid for a Special Concern or provincially Rare species; linking candidate habitat on the site needs to be completed to ELC Ecosites.	Observed during targeted studies however no breeding evidence was exhibited. Generally, habitat that could support the species does exist within and within 50 m of the Project Location. Habitat that may support Black billed Magpie is extensive in the general areas surrounding the Project.	Y	Y	SoCC-06	Y (Carried forward to EIS)
	Blue-winged Teal (<i>Spatula discors</i>)	All plant and animal element occurrences (EO) within a 1 or 10 km grid. Older EO were recorded prior to GPS being available; therefore, location information may lack accuracy.	When an EO is identified within a 1 or 10 km grid for a Special Concern or provincially Rare species; linking candidate habitat on the site needs to be completed to ELC Ecosites.	Not observed during targeted studies. Habitat for the species is limited on site with only a small tributary of Mather Creek representing the only aquatic area in proximity to the site. The Project has been setback a minimum of 50 m from this feature.	N	N	SoCC-07	Y (Carried forward to EIS)
	Bobolink (<i>Dolichonyx oryzivorus</i>)	All plant and animal element occurrences (EO) within a 1 or 10 km grid. Older EO were recorded prior to GPS being available; therefore, location information may lack accuracy.	When an EO is identified within a 1 or 10 km grid for a Special Concern or provincially Rare species; linking candidate habitat on the site needs to be completed to ELC Ecosites.	Observed during targeted studies in discrete areas throughout the site. Habitat for this species is generally prevalent in several areas surrounding the Project Location. General mitigation measures are prescribed in the EIS.	Y	Y	SoCC-08	Y (Carried forward to EIS)

Habitat for Species of Conservation Concern								
cSWH Type	Candidate Significant Wildlife Habitat (cSWH) Criteria			Assessment of cSWH				Carried Forward to EoS (Y/N)
	Indicator Species	ELC Ecosite Codes	Habitat Criteria	Assessment Details	In Project Location (Y/N)	Within 50 m of Project Location (Y/N)	cSWH Feature ID	
	Brewer's Blackbird (<i>Euphagus cyanocephalus</i>)	All plant and animal element occurrences (EO) within a 1 or 10 km grid. Older EO were recorded prior to GPS being available; therefore, location information may lack accuracy.	When an EO is identified within a 1 or 10 km grid for a Special Concern or provincially Rare species; linking candidate habitat on the site needs to be completed to ELC Ecosites.	Species encountered and documented during BBS. Thought to be utilizing the area for foraging. Brewer's Blackbird are relatively common in agricultural or cleared areas in northern Ontario. General mitigation measures are prescribed in the EIS.	Y (cSWH)	Y (cSWH)	SoCC-09	Y (Carried forward to EIS)
	Canada Warbler (<i>Cardellina canadensis</i>)	All plant and animal element occurrences (EO) within a 1 or 10 km grid. Older EO were recorded prior to GPS being available; therefore, location information may lack accuracy.	When an EO is identified within a 1 or 10 km grid for a Special Concern or provincially Rare species; linking candidate habitat on the site needs to be completed to ELC Ecosites.	Not observed during targeted studies. Canada Warbler is a habitat generalist preferring mixed and wet forests. Generally habitat exists within and within 50 m of the Project Location that could support Canada Warbler, however none were recorded during targeted studies. General mitigation measures have been provided in the EIS.	N	N	SoCC-10	Y (Carried forward to EIS)
	Common Nighthawk (<i>Chordeiles minor</i>)	All plant and animal element occurrences (EO) within a 1 or 10 km grid. Older EO were recorded prior to GPS being available; therefore, location information may lack accuracy.	When an EO is identified within a 1 or 10 km grid for a Special Concern or provincially Rare species; linking candidate habitat on the site needs to be completed to ELC Ecosites.	Generally prefer habitat associated with open mature woodlands. Although some potential exists within Savannah/agricultural areas associated with the Project Location, typical habitat is largely absent but could occur within 50 m of the Project Location. Mitigation measures surrounding the protection of ground nesting and woodland nesting birds has been incorporated into the EIS.	N	N	SoCC-11	Y (Carried forward to EIS)
	Dickcissel (<i>Spiza americana</i>)	All plant and animal element occurrences (EO) within a 1 or 10 km grid. Older EO were recorded prior to GPS being available; therefore, location information may lack accuracy.	When an EO is identified within a 1 or 10 km grid for a Special Concern or provincially Rare species; linking candidate habitat on the site needs to be completed to ELC Ecosites.	Not observed during targeted studies. This species general breeding range does not extend into northwestern Ontario and is unlikely to be present. General mitigation measures have been provided in the EIS.	N	N	SoCC-12	Y (Carried forward to EIS)
	Eastern Meadowlark (<i>Sturnella magna</i>)	All plant and animal element occurrences (EO) within a 1 or 10 km grid. Older EO were recorded prior to GPS being available; therefore, location information may lack accuracy.	When an EO is identified within a 1 or 10 km grid for a Special Concern or provincially Rare species; linking candidate habitat on the site needs to be completed to ELC Ecosites.	Not observed during targeted studies. Studies for grassland birds. Generally the habitat range for Eastern Meadowlark does not extend to this area of Ontario.	N	N	SoCC-13	Y (Carried forward to EIS)
	Eastern Whip-poor-will (<i>Antrostomus vociferus</i>)	All plant and animal element occurrences (EO) within a 1 or 10 km grid. Older EO were recorded prior to GPS being available; therefore, location information may lack accuracy.	When an EO is identified within a 1 or 10 km grid for a Special Concern or provincially Rare species; linking candidate habitat on the site needs to be completed to ELC Ecosites.	Eastern Whip-Poor-Will generally prefer habitat associated with open mature woodlands. Although some potential exists within Savannah/agricultural areas associated with the Project Location, typical habitat is largely absent but could occur within 50 m of the Project Location. Mitigation measures surrounding the protection of ground nesting and woodland nesting birds has been incorporated into the EIS.	N	N	SoCC-14	Y (Carried forward to EIS)
	Eastern Wood-Pewee (<i>Contopus virens</i>)	All plant and animal element occurrences (EO) within a 1 or 10 km grid. Older EO were recorded prior to GPS being available; therefore, location information may lack accuracy.	When an EO is identified within a 1 or 10 km grid for a Special Concern or provincially Rare species; linking candidate habitat on the site needs to be completed to ELC Ecosites.	Eastern Wood Pewee prefers to nest in the mid canopy of forest edges. This habitat type is prevalent throughout northern Ontario and but limited habitat exists within 50 m of the Project Location. General mitigation measures mitigate impacts to this species have been incorporated into the EIS.	N	N	SoCC-15	Y (Carried forward to EIS)

Habitat for Species of Conservation Concern								
cSWH Type	Candidate Significant Wildlife Habitat (cSWH) Criteria			Assessment of cSWH				Carried Forward to EoS (Y/N)
	Indicator Species	ELC Ecosite Codes	Habitat Criteria	Assessment Details	In Project Location (Y/N)	Within 50 m of Project Location (Y/N)	cSWH Feature ID	
	Evening Grosbeak (<i>Coccothraustes vespertinus</i>)	All plant and animal element occurrences (EO) within a 1 or 10 km grid. Older EO were recorded prior to GPS being available; therefore, location information may lack accuracy.	When an EO is identified within a 1 or 10 km grid for a Special Concern or provincially Rare species; linking candidate habitat on the site needs to be completed to ELC Ecosites.	Not observed during study. Typically found in mixed wood forests dominated by fir and White Spruce. Limited forest habitat exists in Proximity to the Project Location. General mitigation measures have been provided in the EIS.	N	N	SoCC-16	Y (Carried forward to EIS)
	Golden-winged Warbler (<i>Vermivora chrysoptera</i>)	All plant and animal element occurrences (EO) within a 1 or 10 km grid. Older EO were recorded prior to GPS being available; therefore, location information may lack accuracy.	When an EO is identified within a 1 or 10 km grid for a Special Concern or provincially Rare species; linking candidate habitat on the site needs to be completed to ELC Ecosites.	Not observed during targeted studies. This species is known to nest in young dense shrubs and mature forest and is considered a habitat generalist. This habitat is limited within the Project Location.	N	N	SoCC-17	Y (Carried forward to EIS)
	Least Bittern (<i>Ixobrychus exilis</i>)	All plant and animal element occurrences (EO) within a 1 or 10 km grid. Older EO were recorded prior to GPS being available; therefore, location information may lack accuracy.	When an EO is identified within a 1 or 10 km grid for a Special Concern or provincially Rare species; linking candidate habitat on the site needs to be completed to ELC Ecosites.	Not observed during targeted studies. Habitat for the species is limited on site with only a small tributary of Mather Creek representing the only aquatic area in proximity to the site. The Project has been setback a minimum of 50 m from this feature.	N	N	SoCC-18	Y (Carried forward to EIS)
	Lesser Yellowlegs (<i>Tringa flavipes</i>)	All plant and animal element occurrences (EO) within a 1 or 10 km grid. Older EO were recorded prior to GPS being available; therefore, location information may lack accuracy.	When an EO is identified within a 1 or 10 km grid for a Special Concern or provincially Rare species; linking candidate habitat on the site needs to be completed to ELC Ecosites.	Not observed during targeted studies. Habitat for the species is limited on site with only a small tributary of Mather Creek representing the only aquatic area in proximity to the site. The Project has been setback a minimum of 50 m from this feature.	N	N	SoCC-19	N
	Olive-sided Flycatcher (<i>Contopus cooperi</i>)	All plant and animal element occurrences (EO) within a 1 or 10 km grid. Older EO were recorded prior to GPS being available; therefore, location information may lack accuracy.	When an EO is identified within a 1 or 10 km grid for a Special Concern or provincially Rare species; linking candidate habitat on the site needs to be completed to ELC Ecosites.	Not observed during study. Olive Sided Flycatcher prefers to nest in the mid canopy of forest edges. This habitat type is prevalent throughout northern Ontario and the Project Location. The Project is unlikely to limit forest edge habits or use by this species. General mitigation measures mitigate impacts to this species have been incorporated into the EIS.	N	N	SoCC-20	Y (Carried forward to EIS)
	Purple Martin (<i>Progne subis</i>)	All plant and animal element occurrences (EO) within a 1 or 10 km grid. Older EO were recorded prior to GPS being available; therefore, location information may lack accuracy.	When an EO is identified within a 1 or 10 km grid for a Special Concern or provincially Rare species; linking candidate habitat on the site needs to be completed to ELC Ecosites.	Not observed during targeted studies. Limited natural nesting activities occur in Ontario without human intervention. Natural nesting is limited to secondary use of tree cavities. Limited suitable forest habitat is available for the species in proximity of the Project Location.	N	N	SoCC-21	N
	Red-headed Woodpecker (<i>Melanerpes erythrocephalus</i>)	All plant and animal element occurrences (EO) within a 1 or 10 km grid. Older EO were recorded prior to GPS being available; therefore, location information may lack accuracy.	When an EO is identified within a 1 or 10 km grid for a Special Concern or provincially Rare species; linking candidate habitat on the site needs to be completed to ELC Ecosites.	Not observed during targeted studies. Mature forested habitats expected to support Red-headed Woodpecker nesting and foraging are largely absent from the Project Location, however forested habitat contains some potential to support the species. General mitigation measures have been incorporated into the EIS.	N	N	SoCC-22	Y (Carried forward to EIS)
	Rusty Blackbird (<i>Euphagus carolinus</i>)	All plant and animal element occurrences (EO) within a 1 or 10 km grid.	When an EO is identified within a 1 or 10 km grid for a Special Concern or provincially Rare species; linking candidate habitat on the site needs to be completed to ELC Ecosites.	Not observed during targeted studies. Habitat is limited to wetland areas adjacent to the Project Location. The Project has accommodated a 50 m setback from these features.	N	N	SoCC-23	Y (Carried forward to EIS)

Habitat for Species of Conservation Concern								
cSWH Type	Candidate Significant Wildlife Habitat (cSWH) Criteria			Assessment of cSWH				Carried Forward to EoS (Y/N)
	Indicator Species	ELC Ecosite Codes	Habitat Criteria	Assessment Details	In Project Location (Y/N)	Within 50 m of Project Location (Y/N)	cSWH Feature ID	
		Older EO were recorded prior to GPS being available; therefore, location information may lack accuracy.						
	Short-eared Owl (<i>Asio flammeus</i>)	All plant and animal element occurrences (EO) within a 1 or 10 km grid. Older EO were recorded prior to GPS being available; therefore, location information may lack accuracy.	When an EO is identified within a 1 or 10 km grid for a Special Concern or provincially Rare species; linking candidate habitat on the site needs to be completed to ELC Ecosites.	Not observed during targeted studies. Some potential for foraging habitat exists associated with the Project Location. Mitigation measures to minimize potential impacts to the species have been incorporated into the EIS.	N	N	SoCC-24	Y (Carried forward to EIS)
	Upland Sandpiper (<i>Bartramia longicauda</i>)	All plant and animal element occurrences (EO) within a 1 or 10 km grid. Older EO were recorded prior to GPS being available; therefore, location information may lack accuracy.	When an EO is identified within a 1 or 10 km grid for a Special Concern or provincially Rare species; linking candidate habitat on the site needs to be completed to ELC Ecosites.	Not observed during targeted studies. Although the grassland areas of the Project Location hold some potential for foraging alvar type habitats are typically more suitable for the species. Grassland areas associated with cattle grazing similar the Project Location are prevalent in the area. Mitigation measures to minimize potential impacts to the species have been incorporated into the EIS.	N	N	SoCC-25	Y (Carried forward to EIS)
	Western Meadowlark (<i>Sturnella neglecta</i>)	All plant and animal element occurrences (EO) within a 1 or 10 km grid. Older EO were recorded prior to GPS being available; therefore, location information may lack accuracy.	When an EO is identified within a 1 or 10 km grid for a Special Concern or provincially Rare species; linking candidate habitat on the site needs to be completed to ELC Ecosites.	Species encountered and documented during Surveys and on-site investigations. Thought to be utilizing the area for foraging and possible breeding (not confirmed during BBS surveys). Grassland areas associated with cattle grazing similar the Project Location are prevalent in the area. Mitigation measures to minimize potential impacts to the species have been incorporated into the EIS.	Y (cSWH)	Y	SoCC-26	Y (Carried forward to EIS)
	Wood Thrush (<i>Hylocichla mustelina</i>)	All plant and animal element occurrences (EO) within a 1 or 10 km grid. Older EO were recorded prior to GPS being available; therefore, location information may lack accuracy.	When an EO is identified within a 1 or 10 km grid for a Special Concern or provincially Rare species; linking candidate habitat on the site needs to be completed to ELC Ecosites.	Not observed during targeted studies. Large mature forests have largely been avoided in selection of the Project Location. General mitigation measures to protect the species have been incorporated into the EIS.	N	N	SoCC-27	Y (Carried forward to EIS)
	Yellow Rail (<i>Coturnicops noveboracensis</i>)	All plant and animal element occurrences (EO) within a 1 or 10 km grid. Older EO were recorded prior to GPS being available; therefore, location information may lack accuracy.	When an EO is identified within a 1 or 10 km grid for a Special Concern or provincially Rare species; linking candidate habitat on the site needs to be completed to ELC Ecosites.	Not observed during targeted studies. Habitat for the species is limited on site with only a small tributary of Mather Creek representing the only aquatic area in proximity to the site. The Project has been setback a minimum of 50 m from this feature. Nesting for this species is largely limited to the Hudson Bay Lowlands.	N	N	SoCC-28	N
	Eastern Red Bat (<i>Lasiurus borealis</i>)	All plant and animal element occurrences (EO) within a 1 or 10 km grid. Older EO were recorded prior to GPS being available; therefore, location information may lack accuracy.	When an EO is identified within a 1 or 10 km grid for a Special Concern or provincially Rare species; linking candidate habitat on the site needs to be completed to ELC Ecosites.	This species was not captured during acoustic surveys for bat species.	N	N	SoCC-29	N
	Eastern Small-Footed Myotis (<i>Myotis leibii</i>)	All plant and animal element occurrences (EO) within a 1 or 10 km grid. Older EO were recorded prior to GPS being available; therefore, location information may lack accuracy.	When an EO is identified within a 1 or 10 km grid for a Special Concern or provincially Rare species; linking candidate habitat on the site needs to be completed to ELC Ecosites.	This species was not captured during acoustic surveys for bat species.	N	N	SoCC-30	N

Habitat for Species of Conservation Concern								
cSWH Type	Candidate Significant Wildlife Habitat (cSWH) Criteria			Assessment of cSWH				Carried Forward to EoS (Y/N)
	Indicator Species	ELC Ecosite Codes	Habitat Criteria	Assessment Details	In Project Location (Y/N)	Within 50 m of Project Location (Y/N)	cSWH Feature ID	
	Hoary Bat (<i>Lasiurus cinereus</i>)	All plant and animal element occurrences (EO) within a 1 or 10 km grid. Older EO were recorded prior to GPS being available; therefore, location information may lack accuracy.	When an EO is identified within a 1 or 10 km grid for a Special Concern or provincially Rare species; linking candidate habitat on the site needs to be completed to ELC Ecosites.	ELC studies and snag observations indicated limited potential for maternity roost habitat is present within the Project Location. Acoustic studies did confirm some presence of the species likely supporting foraging habitat.	Y	Y	SoCC-31	Y (Carried forward to EIS)
	Little Brown Myotis (<i>Myotis lucifugus</i>)	All plant and animal element occurrences (EO) within a 1 or 10 km grid. Older EO were recorded prior to GPS being available; therefore, location information may lack accuracy.	When an EO is identified within a 1 or 10 km grid for a Special Concern or provincially Rare species; linking candidate habitat on the site needs to be completed to ELC Ecosites.	ELC studies and snag observations indicated limited potential for maternity roost habitat is present within the Project Location. Acoustic studies did confirm some presence of the species likely supporting foraging habitat.	Y	Y	SoCC-32	Y (Carried forward to EIS)
	Northern Myotis (<i>Myotis septentrionalis</i>)	All plant and animal element occurrences (EO) within a 1 or 10 km grid. Older EO were recorded prior to GPS being available; therefore, location information may lack accuracy.	When an EO is identified within a 1 or 10 km grid for a Special Concern or provincially Rare species; linking candidate habitat on the site needs to be completed to ELC Ecosites.	This species was not captured during acoustic surveys for bat species.	N	N	SoCC-33	Y (Carried forward to EIS)
	Tri-Coloured Bat (<i>Perimyotis subflavus</i>)	All plant and animal element occurrences (EO) within a 1 or 10 km grid. Older EO were recorded prior to GPS being available; therefore, location information may lack accuracy.	When an EO is identified within a 1 or 10 km grid for a Special Concern or provincially Rare species; linking candidate habitat on the site needs to be completed to ELC Ecosites.	This species was not captured during acoustic surveys for bat species.	N	N	SoCC-34	Y (Carried forward to EIS)
	Silver-Haired Bat (<i>Lasionycteris noctivagans</i>)	All plant and animal element occurrences (EO) within a 1 or 10 km grid. Older EO were recorded prior to GPS being available; therefore, location information may lack accuracy.	When an EO is identified within a 1 or 10 km grid for a Special Concern or provincially Rare species; linking candidate habitat on the site needs to be completed to ELC Ecosites.	ELC studies and snag observations indicated limited potential for maternity roost habitat is present within the Project Location. Acoustic studies did confirm some presence of the species likely supporting foraging habitat.	Y	Y	SoCC-35	Y (Carried forward to EIS)

3.3.7.2.5 Animal Movement Corridors

The NHRM (MNR, 2010) describes animal movement corridors as

- Habitats that link two or more wildlife habitats that are critical to the maintenance of a population of a particular species or group of species.
- Habitats with a key ecological function to enable wildlife to move, with minimum mortality, between areas of significant wildlife habitat or core natural areas.

The criteria outlined in the SWH Ecoregion 3E (MNR, 2015) and 3W (MNR, 2017) Criterion Schedule were used to determine the presence/absence and evaluate the significance of animal movement corridors within the Project Location. An assessment of each of the habitat types associated with this category is provided in Table 3-12 below.

Table 3-12: cSWH Assessment for Animal Movement Corridors

Animal Movement Corridors								
cSWH Type	Candidate Significant Wildlife Habitat (cSWH) Criteria			Assessment of cSWH				Carried Forward to EoS (Y/N)
	Indicator Species 3E	ELC Ecosite Codes	Habitat Criteria	Assessment Details	In Project Location (Y/N)	Within 50 m of Project Location (Y/N)	cSWH Feature ID	
Amphibian Movement Corridors	Eastern Newt, Blue-spotted Salamander, Spotted Salamander, Gray Treefrog, Wood Frog, Boreal Chorus Frog, Spring Peeper, Northern Leopard Frog, Green Frog, Mink Frog, American Toad, Four-toed Salamander	Corridors may be found in all ecosites associated with water. Corridors will be determined based on identifying the significant breeding habitat for these species in Table 1.2.2 of the SWH Criteria Schedules for Ecoregion 3E (MNR, 2015) and Ecoregion 3W (MNR, 2017).	Movement corridors between breeding habitat and summer habitat. Movement corridors must be determined when Amphibian breeding habitat is confirmed as SWH from Table 1.2.2 (MNR, 2015).	Amphibian breeding habitat (woodland) was identified for woodlands within the Project Location. Movement between these woodlands would require travelling through active farmland or areas where predation is considered high (i.e., agricultural lands and open areas). Only areas where movement would occur in naturalized areas with adequate cover and protection from predation or incidental take was considered. As such, this habitat type will be considered not present.	N	N	N/A	N
Cervid Movement Corridors	Moose	Corridors may be found in all treed ecosites.	- Movement corridors must be determined when Moose Aquatic Feeding Area and Mineral Lick Habitat are confirmed from Table 1.2.2 (MNR, 2015). - Corridors typically follow riparian areas, woodlots, and areas of physical geography (ravines or ridges). - Corridors will be multi-functional (i.e., these will function for any smaller mammal species as well).	‘Moose Aquatic Feeding Area’ and ‘Mineral Lick Habitat’ are not present in or within 50 m of the Project Location, resulting in the absence of movement corridors for Moose. Therefore, this feature is considered not present.	N	N	N/A	N
Furbearer Movement Corridors	Mink, Marten, Fisher, Otter, Canada Lynx	All treed Ecosites adjacent to or within shoreline habitats.	- Intact forest corridors are critical for movements within territories for hunting, breeding, and maintenance of populations. For habitat related to denning sites, a corridor to and from the denning site must be maintained as this habitat is extremely important for local populations and is rarely identified. - Mink and Otter den sites are typically found within a riparian area of a lake, river, or stream or wetland. The den site will potentially have a movement corridor associated with it. - Den sites of other furbearer species may be more associated with social, hunting, breeding, or other behaviours. - All den sites identified using Table 1.2.2 (MNR, 2015) under the habitat of ‘Denning Sites for Mink, Otter, Marten, Fisher, and Eastern Wolf’ are considered for an animal movement corridor.	Denning sites of target species were not identified in Table 1.2.2 (MNR, 2015) and are not expected to be present within the Project Location. Therefore, this feature is considered not present.	N	N	N/A	N

3.4 Summary of Site Investigation

3.4.1 Candidate Significant Natural Features

The Site Investigation confirmed the presence of Wetland 1, Wetland 2 and Wetland 3 as well as the Chapple PSW. Wetlands 4 and 5 were determined to be absent and will not be carried forward to the EOS/EIS. Several SoCC were identified and carried forward to the EoS/EIS for consideration.

3.4.2 Generalized Significant Wildlife Habitat

3.4.2.1 Bat Maternity Roost Habitat

Acoustic analysis indicated general usage of the Project Location by bat species. Assumptions can be made regarding the level of activity noted during analysis. It is likely that maternity habitat for Bat species in the Project Location is low or of poor quality. Generally, more activity was captured adjacent to bat acoustic monitoring Unit 2 associated with the Chapple PSW.

3.4.2.2 Bald Eagle and Osprey Nesting Habitat

One Bald Eagle nest was observed on the perimeter of the Project Location. Two adult Bald Eagles were observed during early July, thought to be defending territory and likely utilized the nest during the core breeding season.

Table 3-13: Candidate Significant Natural Features Identified During the Site Investigation

Natural Feature	Figure 3-1 ID	Proximity to Project Location	Assessment	Next Steps
Generalized cSWH				
Bald Eagle and Osprey Nesting, Foraging and Perching Habitat	Bald Eagle Nest	Within 50 m of Project Location	Stick nest (Bald Eagle) observed and confirmed active during breeding season.	Treated as significant and construction mitigation provided in the EIS.
Maternity Roosting Habitats	Bat 1 and Bat 2	Within Project Location	Considered as generalized SWH. Assessments of snag density outline the area is likely not significant. Acoustic recordings indicated more activity surrounding Unit 2.	Treated as significant and construction mitigation provided in the EIS.
Barn Swallow (<i>Hirundo rustica</i>)	SoCC-04	N/A	Not observed during targeted studies. No anthropogenic structures with potential for nesting activities are present within 120m of the Project Location.	General construction mitigation provided in the EIS.

Natural Feature	Figure 3-1 ID	Proximity to Project Location	Assessment	Next Steps
Black-billed Magpie (<i>Pica hudsonia</i>)	SoCC-06	Within Project Location	Observed during targeted studies however no breeding evidence was exhibited. Generally, habitat that could support the species does exist within and within 50 m of the Project Location. Habitat that may support Black billed Magpie is extensive in the general areas surrounding the Project.	Treated as significant and construction mitigation provided in the EIS.
Bobolink (<i>Dolichonyx oryzivorus</i>)	SoCC-08	Within Project Location	Observed during targeted studies in discrete areas throughout the site. Habitat for this species is generally prevalent in several areas surrounding the Project Location. General mitigation measures are prescribed in the EIS.	General construction mitigation provided in the EIS.
Brewer's Blackbird (<i>Euphagus cyanocephalus</i>)	SoCC-09	Within Project Location	Species encountered and documented during BBS. Thought to be utilizing the area for foraging. Brewer's Blackbird are relatively common in agricultural or cleared areas in northern Ontario. General mitigation measures are prescribed in the EIS.	General construction mitigation provided in the EIS.
Canada Warbler (<i>Cardellina canadensis</i>)	SoCC-10	N/A	Not observed during targeted studies. Canada Warbler is a habitat generalist preferring mixed and wet forests. Generally habitat exists within and within 50 m of the Project Location that could support Canada Warbler, however none	General construction mitigation provided in the EIS.

Natural Feature	Figure 3-1 ID	Proximity to Project Location	Assessment	Next Steps
			were recorded during targeted studies. General mitigation measures have been provided in the EIS.	
Common Nighthawk (<i>Chordeiles minor</i>)	SoCC-11	N/A	Generally prefer habitat associated with open mature woodlands. Although some potential exists within Savannah/agricultural areas associated with the Project Location, typical habitat is largely absent but could occur within 50 m of the Project Location. Mitigation measures surrounding the protection of ground nesting and woodland nesting birds has been incorporated into the EIS.	General construction mitigation provided in the EIS.
Dickcissel (<i>Spiza americana</i>)	SoCC-12	N/A	Not observed during targeted studies. This species general breeding range does not extend into northwestern Ontario and is unlikely to be present. General mitigation measures have been provided in the EIS.	General construction mitigation provided in the EIS.
Eastern Meadowlark (<i>Sturnella magna</i>)	SoCC-13	N/A	Not observed during targeted studies. Studies for grassland birds. Generally the habitat range for Eastern Meadowlark does not extend to this area of Ontario.	General construction mitigation provided in the EIS.
Eastern Whip-poor-will (<i>Antrostomus vociferus</i>)	SoCC-14	N/A	Eastern Whip-Poor-Will generally prefer habitat associated with open mature woodlands. Although some potential exists within Savannah/agricultural areas associated with	General construction mitigation provided in the EIS.

Natural Feature	Figure 3-1 ID	Proximity to Project Location	Assessment	Next Steps
			the Project Location, typical habitat is largely absent but could occur within 50 m of the Project Location. Mitigation measures surrounding the protection of ground nesting and woodland nesting birds has been incorporated into the EIS.	
Eastern Wood-Pewee (<i>Contopus virens</i>)	SoCC-15	N/A	Eastern Wood Pewee prefers to nest in the mid canopy of forest edges. This habitat type is prevalent throughout northern Ontario and but limited habitat exists within 50 m of the Project Location. General mitigation measures mitigate impacts to this species have been incorporated into the EIS.	General construction mitigation provided in the EIS.
Evening Grosbeak (<i>Coccothraustes vespertinus</i>)	SoCC-16	N/A	Not observed during study. Typically found in mixed wood forests dominated by fir and White Spruce. Limited forest habitat exists in Proximity to the Project Location. General mitigation measures have been provided in the EIS.	General construction mitigation provided in the EIS.
Golden-winged Warbler (<i>Vermivora chrysoptera</i>)	SoCC-17	N/A	Not observed during targeted studies. This species is known to nest in young dense shrubs and mature forest and is considered a habitat generalist. This habitat is limited within the Project Location.	General construction mitigation provided in the EIS.
Olive-sided Flycatcher (<i>Contopus cooperi</i>)	SoCC-20	N/A	Not observed during study. Olive Sided Flycatcher prefers to nest in the mid canopy of forest edges. This	General construction mitigation provided in the EIS.

Natural Feature	Figure 3-1 ID	Proximity to Project Location	Assessment	Next Steps
			habitat type is prevalent throughout northern Ontario and the Project Location. The Project is unlikely to limit forest edge habits or use by this species. General mitigation measures mitigate impacts to this species have been incorporated into the EIS.	
Purple Martin (<i>Progne subis</i>)	SoCC-21	N/A	Not observed during targeted studies. Limited natural nesting activities occur in Ontario without human intervention. Natural nesting is limited to secondary use of tree cavities. Limited suitable forest habitat is available for the species in proximity of the Project Location.	General construction mitigation provided in the EIS.
Red-headed Woodpecker (<i>Melanerpes erythrocephalus</i>)	SoCC-22	N/A	Not observed during targeted studies. Mature forested habitats expected to support Red-headed Woodpecker nesting and foraging are largely absent from the Project Location, however forested habitat contains some potential to support the species. General mitigation measures have been incorporated into the EIS.	General construction mitigation provided in the EIS.
Short-eared Owl (<i>Asio flammeus</i>)	SoCC-24	N/A	Not observed during targeted studies. Some potential for foraging habitat exists associated with the Project Location. Mitigation measures to minimize potential impacts to the species have been incorporated into the EIS.	General construction mitigation provided in the EIS.

Natural Feature	Figure 3-1 ID	Proximity to Project Location	Assessment	Next Steps
Upland Sandpiper (<i>Bartramia longicauda</i>)	SoCC-25	N/A	Not observed during targeted studies. Although the grassland areas of the Project Location hold some potential for foraging alvar type habitats are typically more suitable for the species. Grassland areas associated with cattle grazing similar the Project Location are prevalent in the area. Mitigation measures to minimize potential impacts to the species have been incorporated into the EIS.	General construction mitigation provided in the EIS.
Western Meadowlark (<i>Sturnella neglecta</i>)	SoCC-26	Within Project Location	Species encountered and documented during Surveys and on-site investigations. Thought to be utilizing the area for foraging and possible breeding (not confirmed during BBS surveys). Grassland areas associated with cattle grazing similar the Project Location are prevalent in the area. Mitigation measures to minimize potential impacts to the species have been incorporated into the EIS.	Treated as significant and construction mitigation provided in the EIS.
Wood Thrush (<i>Hylocichla mustelina</i>)	SoCC-27	N/A	Not observed during targeted studies. Large mature forests have largely been avoided in selection of the Project Location. General mitigation measures to protect the species have been incorporated into the EIS.	General construction mitigation provided in the EIS.
Eastern Red Bat (<i>Lasiurus borealis</i>)	SoCC-29	N/A	This species was not captured during acoustic surveys for bat species.	General construction mitigation provided in the EIS.

Natural Feature	Figure 3-1 ID	Proximity to Project Location	Assessment	Next Steps
Eastern Small-Footed Myotis (<i>Myotis leibii</i>)	SoCC-30	N/A	This species was not captured during acoustic surveys for bat species.	General construction mitigation provided in the EIS.
Hoary Bat (<i>Lasiurus cinereus</i>)	SoCC-31	Within Project Location.	ELC studies and snag observations indicated limited potential for maternity roost habitat is present within the Project Location. Acoustic studies did confirm some presence of the species likely supporting foraging habitat.	General construction mitigation provided in the EIS.
Little Brown Myotis (<i>Myotis lucifugus</i>)	SoCC-32	Within Project Location.	ELC studies and snag observations indicated limited potential for maternity roost habitat is present within the Project Location. Acoustic studies did confirm some presence of the species likely supporting foraging habitat.	General construction mitigation provided in the EIS.
Northern Myotis (<i>Myotis septentrionalis</i>)	SoCC-33	N/A	This species was not captured during acoustic surveys for bat species.	General construction mitigation provided in the EIS.
Tri-Coloured Bat (<i>Perimyotis subflavus</i>)	SoCC-34	N/A	This species was not captured during acoustic surveys for bat species.	General construction mitigation provided in the EIS.
Silver-Haired Bat (<i>Lasionycteris noctivagans</i>)	SoCC-35	Within Project Location.	ELC studies and snag observations indicated limited potential for maternity roost habitat is present within the Project Location. Acoustic studies did confirm some presence of the species likely supporting foraging habitat.	General construction mitigation provided in the EIS.

Natural Feature	Figure 3-1 ID	Proximity to Project Location	Assessment	Next Steps
cSWH				
Amphibian Breeding Habitat (Wetland)	Amphibian Stations 1 to 5.	Within Project Location and within 50 m.	Candidate SWH present. Studies completed.	Carried forward to EoS.
Natural Features				
Wetlands	Wetland 1, 3	Within Project Location and within 50 m.	Confirmed present. Assumed significant.	Adjust Project Location to accommodate 50 m setback.
Chapple Provincially Significant Wetland	Chapple PSW	Within 50 m of Project Location.	Confirmed present. Confirmed significant.	Adjust Project Location to accommodate 50 m setback.

3.4.3 Site Investigation Determinations and Corrections to the Records Review

The REA Regulation requires that the Site Investigation include a summary of any corrections to the Records Review and the determinations made as a result of conducting the Site Investigation. A summary of the results of the Site Investigation and any corrections required to the Records Review are provided in Table 3-14 below.

Table 3-14: Summary of Corrections Required to the Records Review and Determinations Made as a Result of the Site Investigation

Natural Feature	Records Review (Y/N)	Site Investigation (Y/N)	Determinations Made as a Result of Conducting the Site Investigation	Correction Required (Y/N)	Carried Forward to the EoS (Y/N)
Wetlands	Y	Y	There are wetlands in or within 50 m of the Project Location. Including a Provincially Significant Wetland. Wetlands 4 and 5 were determined to be absent as the land was actively used for agricultural activities and didn't exhibit wetland vegetation. The Project Location will be setback 50 m from the present wetland and Chapple PSW.	Y	N
Wildlife Habitat	Possible	Y	There are cSWH and generalized cSWH identified in and/or within 50 m of the Project Location. These generalized cSWH are treated as significant and will be carried forward to the EIS. Targeted surveys took place to further evaluate these features as described in the EoS.	Y	Y

4. Evaluation of Significance

4.1 Regulatory Requirements

Part IV, Subsection 27(3) of the REA Regulation requires proponents of Class 3 solar projects to prepare an EoS report for natural features identified in the Records Review and Site Investigation, that sets out:

- A determination of whether the natural feature is or is not provincially significant (i.e., wetlands and ANSIs) or significant (i.e., wetlands and wildlife habitat);
- A summary of the evaluation criteria or procedures used to make the determinations;
- The name and qualifications of any person who applied to evaluation criteria or procedures; and
- The dates of the beginning and completion of the evaluation.

An attestation regarding the required information or activities relevant to the EoS were completed by a qualified person(s) as set out in the NHAG and were undertaken according to requirements, criteria and procedures set out in O. Reg. 359/09 under the EPA and the NHAG for Renewable Energy Projects is available in Appendix B.

4.2 Evaluation of Significance Methodology

The Records Review and Site Investigation identified generalized candidate SWH. These features have been further studied and as outlined in Section 3.3 and will be further assessed within this EoS in comparison to the defining criteria as outlined in the Ecoregion 3E (MNR, 2015) and 3W (MNR, 2017) SWH Schedules. All SoCC species with potential to occur within 50 m of the Project Location will be carried forward to the EIS with general mitigation measures applied.

4.2.1 Evaluation of Significance Details

The REA Regulation requires that the EoS includes the name and qualifications of the evaluator and beginning and completion dates of the evaluation. These dates are associated with the surveys previously highlighted in Section 3.2.1.1.

The name and qualifications of the evaluator are provided in Appendix B. The methodologies utilized for habitat use studies to confirm the presence/absence of the cSWH types identified during the Site Investigation are present within Section 3.2.

4.3 Evaluation of Candidate Significant Natural Features

The Records Review and Site Investigation identified cSWH in and/or within 50 m of the Project Location. All identified cSWH features identified during the desktop and Site Investigation were further studied utilizing targeted surveys to evaluate their significance.

4.3.1 Amphibian Breeding Habitat (Wetland)

The SWH Ecoregion 3W Criterion Schedule (MNR, 2017) outlines that significant Amphibian Breeding Habitats contain the presence of one or more of the listed newt or salamander

species or three or more of the listed frog/toad species with call level codes of three (as defined by the Marsh Monitoring Program). As described Sections 3.2 and 3.3, anuran call surveys were completed at all wetlands. Only one frog species was documented with a call level code 3 (Spring Peeper) during any of the three site visits. Based on these studies, the Amphibian Breeding Habitat is not considered to be significant and will not be carried forward to the EIS.

4.3.2 *Bald Eagle and Osprey Nesting, Foraging and Perching Habitat*

This habitat type is associated with woodlands. A Bald Eagle nest was observed outside of/adjacent to the Project Location. The Project Location will be adjusted to accommodate a 120 m buffer from the feature and has been modified within Figure 4-1.

4.3.3 *Additional Potential Significant Wildlife Habitat*

Habitat use studies did not confirm SWH related to the following habitat types. Regardless, there is some likelihood of general presence or usage within 50 m of the Project Location. These features will be evaluated generally and carried forward to the EIS to identify appropriate mitigation measures to prevent chance impacts to relevant species or habitats:

- Bat Maternity Colonies – Bat Maternity Roost habitat is considered as potentially present throughout deciduous woodlands. Throughout the Project Location, snag observations were low and ELC ecosites present are not typical of high-quality Maternity Roost Habitat. Acoustic studies completed showed low occurrences throughout the area as described in Section 3.3.5. Based on these observations, maternity roost quality is considered low within forested areas within the Project Location.

4.3.4 *Evaluation of Wetland Significance*

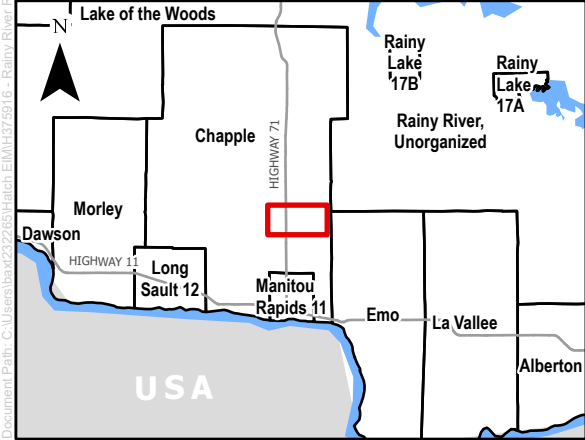
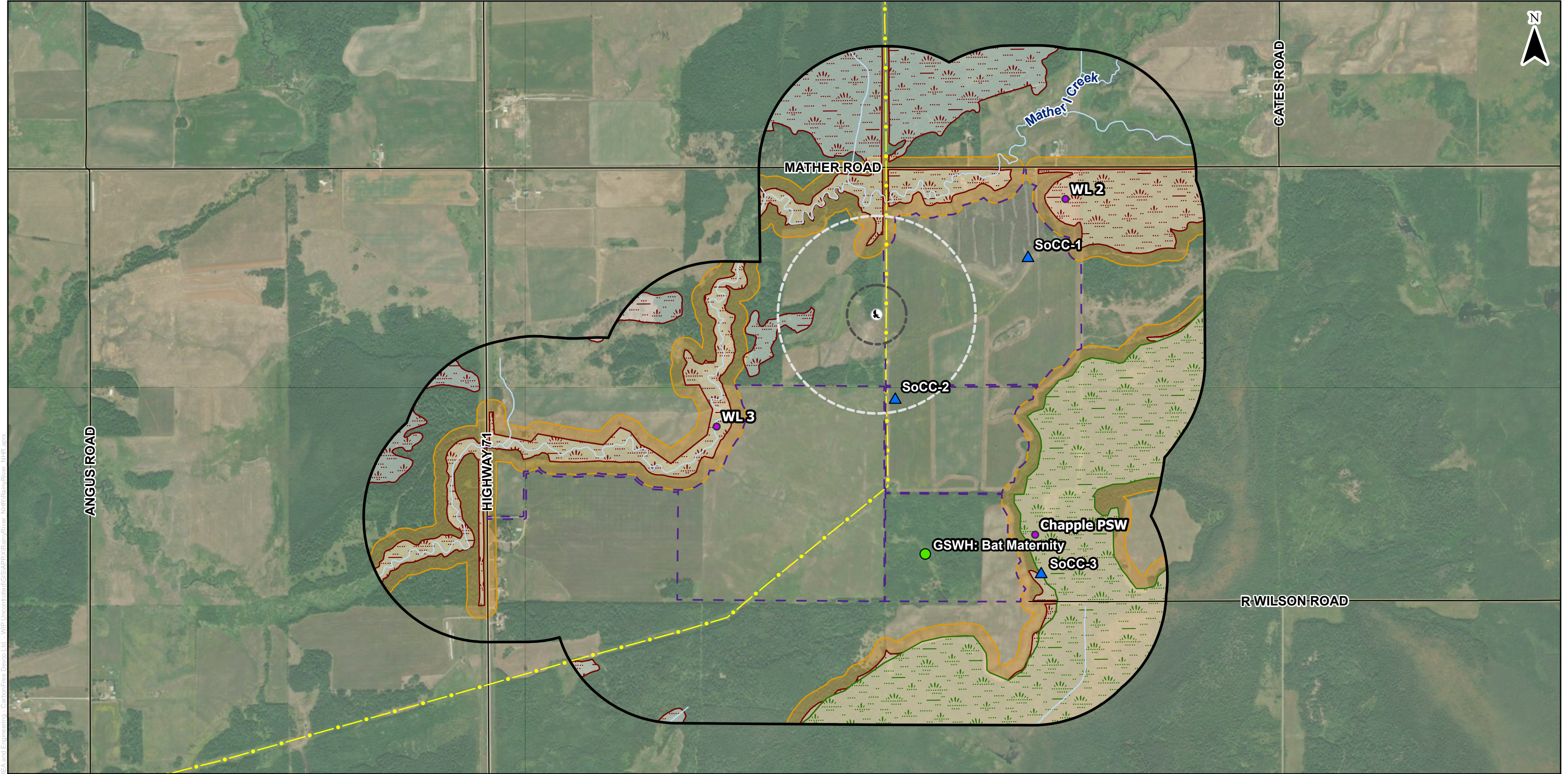
For the purposes of this NHA, all confirmed present wetlands as outlined in Figure 3-2, found to be larger than the minimum 2 ha, will be treated as significant. In all cases the Project Location can be set back 50 m and will not be carried forward into an EIS. The Project Location has been modified to reflect these setbacks in Figure 4-1.

4.4 *Summary of Evaluation of Significance*

The Site Investigation and EoS identified confirmed cSWH and generalized cSWH in and/or within 50 m of the Project Location. These Natural Features are treated as significant and carried forward to the EIS. The EIS will include mitigation measures to avoid and/or minimize potential effects associated with the Project. These features include:

- Bald Eagle Nesting Habitat (confirmed);
- Bat Maternity Roost Habitat (generalized); and
- SoCC Habitats (generalized).

Figure 4-1 outlines the locations of the above-listed features that are treated as significant or confirmed significant. Potential locations of generalized cSWH have been identified in Figure 4-1 as well.



LEGEND

Bald Eagle Nest

GSWH: Bat Maternity

Species of Conservation Concern

Wetland

Road

Transmission Line

Watercourse

Revised Project Location

Study Area (500m Buffer)

Bald Eagle Nest (120m Buffer)

Bald Eagle Nest (400m Buffer)

Unevaluated Wetland (MNR)

Provincially Significant Wetland (MNR)

Wetland (50m Buffer)

NOTES:

1. Produced by Hatch, contains information licensed under the Open Government Licence – Ontario

2. Spatial referencing: NAD 1983 UTM Zone 15N

0 250 500 1,000 m

1:15,000

PROJECT:		CarbonFree Rainy River Project – Natural Heritage Assessment			
FIGURE TITLE:		Evaluation of Significance Results			
CLIENT:		CarbonFree Rainy River LTD			
DWG BY:	CHK BY:	FIG NO.:	REV NO.:		
V. BAXTER	C. SEHL				
DATE:	PAGE:	4-1	1		
13/04/26	1				

5. Environmental Impact Study

5.1 Regulatory Requirements

Section 38(1) of the REA Regulation prohibits the construction, installation or expansion of any component of a solar project within the following locations:

- Within or within 50 m of a Provincially Significant Northern Wetland;
- In or within 50 m of a Provincially Significant ANSI (Earth Science or Life Science);
- In or within 50 m of a SWH; and
- Within 50 m of a Provincial Park or Conservation Reserve.

However, Section 38(2) allows proponents to construct within the locations noted above, subject to the completion of an EIS to assess negative effects and evaluate appropriate mitigation and monitoring measures. Section 38(2) of the REA Regulation indicates that the EIS report must:

- Identify and assess any negative environmental effects of the projects on Natural Features, Provincial Parks or Conservation Reserves referred to in Section 38(1);
- Identify mitigation measures in respect of any negative environmental effects;
- Describe how the environmental effects monitoring plan in the Design and Operations Report addresses any negative environmental effects; and
- Describe how the Project Description Report addresses any negative environmental effects.

This EIS has been prepared to address these requirements for the construction of Project components in and within 50 m of significant natural features identified in the EoS. The EIS has also been prepared in accordance with the guidelines established in the NHAG (MNR, 2026).

An attestation regarding the required information or activities relevant to EIS were completed by a qualified person(s) as set out in the NHAG and were undertaken according to requirements, criteria and procedures set out in O. Reg. 359/09 under the EPA and the NHAG for Renewable Energy Projects is available in Appendix B. Associated qualifications of the staff responsible for completing the work is also available in Appendix B.

5.2 Significant Natural Features

Table 5-1 provides a summary of the Natural Features treated as significant and that require an EIS. An assessment of potential negative environmental effects and recommended mitigation measures to avoid and/or minimize potential effects are provided in Table 5-1. These Significant Natural Features identified are shown in Figure 3-2 and Figure 4-1 where relevant.

Table 5-1: Significant Natural Features Identified in the NHA to be Assessed in the EIS

Natural Feature	Figure 4-1 ID	Proximity to Project Location	Assessment	Next Steps
Generalized cSWH				
Bat Maternity Colonies	Bat Maternity	Within and within 50 m from Project Location (solar facility and distribution line).	Woodland – potential for this habitat type to occur in woodlands in Project Location and within 50 m.	Treated as significant and construction mitigation provided in the EIS.
Bald Eagle and Osprey Nesting, Foraging and Perching Habitat	Bald Eagle Nest	Within and within 50 m from Project Location (solar facility and distribution line).	Woodland – potential for this habitat type to occur in woodlands. Nest was confirmed within 50 m of Project Location during 2025 investigations.	Project Location will be adjusted to accommodate a minimum 120 m setback from feature. Treated as significant and construction mitigation provided in the EIS.
Grassland Nesting Birds	SoCC 8, 12, 13, 25 26	Within and within 50 m from Project Location (solar facility and distribution line).	Potential habitat for Species of Conservation concern exists within or within 50 m of the Project Location.	General mitigation measures provided in the EIS.
Forest Nesting Birds	SoCC 4, 6, 9, 15, 16 20, 21, 22, 27	Within and within 50 m from Project Location (solar facility and distribution line).	Potential habitat for Species of Conservation concern exists within or within 50 m of the Project Location.	General mitigation measures provided in the EIS.
Ground/Shrub Nesting Birds	SoCC 10, 11, 14, 17, 24	Within and within 50 m from Project Location (solar facility and distribution line).	Potential habitat for Species of Conservation concern exists within or within 50 m of the Project Location.	General mitigation measures provided in the EIS.
Bats	SoCC 29-35	Within and within 50 m from Project Location (solar facility and distribution line).	Potential habitat for Species of Conservation concern exists within or within 50 m of the Project Location.	General mitigation measures provided in the EIS.
Natural Features				
Unevaluated Wetlands	Wetland 1	Within and within 50 m from Project Location (solar facility and distribution line).	Confirmed to be present. Treated as Significant.	Project Location will be adjusted to accommodate a minimum 50 m setback from feature. No EIS is therefore required.

Natural Feature	Figure 4-1 ID	Proximity to Project Location	Assessment	Next Steps
Unevaluated Wetlands	Wetland 2	Within and within 50 m from Project Location (solar facility and distribution line).	Confirmed to be present. Treated as Significant.	Project Location will be adjusted to accommodate a minimum 50 m setback from feature. No EIS is therefore required.
Unevaluated Wetlands	Wetland 3	Within and within 50 m from Project Location (solar facility and distribution line).	Confirmed to be present. Treated as Significant.	Project Location will be adjusted to accommodate a minimum 50 m setback from feature. No EIS is therefore required.
Chapple PSW	Chapple PSW	Within 50 m of Project Location.	Confirmed to be present.	Project Location will be adjusted to accommodate a minimum 50 m setback from feature. No EIS is therefore required.

5.3 Existing Conditions of Significant Natural Features

5.3.1 *Bald Eagle Nest Feature*

A Bald Eagle nest was identified within 50 m of the Project Location during the initial site visit at the end of January 2025. The nest was visited again during breeding bird surveys in the summer of 2025 and confirmed to be active. Agricultural activities are currently occurring up to the boundary of the property with signs of earth works, crop management and tilling present within 100 m of the nest. Additionally, the existing transmission line runs immediately parallel to the property line and the nest (less than 50 m). Bald Eagle nesting in northwest Ontario is generally concentrated along lakes or large rivers where abundant fishing opportunities are present. This nest location is atypical in that it falls outside of a 120 m of a riparian area and Mather Creek being the closest water feature (MNR, 2014).

5.3.2 *Bat Maternity Roosting Habitat*

Bat maternity roosting habitat has potential to exist within all mixed or deciduous forest habitat types in Ontario. Snag density studies have indicated that all forest ecosites in proximity to the Project are likely low potential or quality for maternity roosting habitat. The only forested habitat required to be cleared is relatively young Aspen Birch forest with minimal opportunities for suitable snags for maternity roosting. This is supported by acoustic surveys associated with Unit 1 as described in Section 3.3.5.

5.3.3 *Species of Conservation Concern*

5.3.3.1 *Grassland Nesting Birds*

The SoCC Grassland Nesting Bird grouping consists of Bobolink, Dickcissel, Eastern Meadowlark, Upland Sandpiper, and Western Meadowlark. As Site Investigations suggested

Bobolink and Western Meadowlark were present in the area, it is expected that a net loss of suitable breeding habitat for the species will occur in the area as grasslands will be routinely disturbed to during the projects operational phase. However, while Grasslands are typically a limited habitat type in Ontario, the habitat is abundant in extreme Northwestern Ontario given its proximity to Minnesota and Manitoba, regions that are characterized by abundant grasslands. For this reason, it is anticipated that the loss of breeding habitat will not significantly impact grassland nesting birds that inhabit the area. In addition, by clearing grasslands outside of timing windows for Nesting Zone C3, it is expected that potential for direct mortality to grassland birds will be greatly minimized. The Project Location has been selected in part to minimize to the extent possible areas that might serve as grassland bird habitat.

5.3.3.2 *Forest Nesting Birds of Conservation Concern*

The SoCC Forest Nesting Bird grouping consists of Black-billed Magpie, Brewer's Blackbird, Eastern Wood-Pewee, Evening Grosbeak, Olive-sided Flycatcher, Purple Martin, Red-Headed Woodpecker, Barn Swallow (primarily nests on man-made structures in the area) and Wood Thrush. Respecting sensitive breeding bird timing windows for Nesting Zone C3, also accommodating potential for nesting woodland raptors (April 15 to August 31). Given the broad availability of treed habitats in Northwestern Ontario it is expected that the loss of potential nesting features as a result of the project will not negatively impact forest nesting bird populations or have cumulative impacts on the broader landscape for these species. The Project Location has been chosen in part to minimize impacts to mature woodlands.

5.3.3.3 *Ground/Shrub Nesting Birds of Conservation Concern*

The SoCC Shrub Nesting Bird grouping consists of Canada Warbler, Common Nighthawk, Eastern Whip-Poor Will, Golden-Winged Warbler, Short-eared Owl and Wilson's Phalarope. Respecting sensitive breeding bird timing windows for Nesting Zone C3 (April 15 to August 31). Given the broad availability of fallow agricultural land and forests with well-developed shrub layers in the region, it is expected that the loss of potential nesting features as a result of the project will not negatively impact shrub nesting bird populations or have cumulative impacts on the broader landscape for these species.

5.3.4 **Bats**

The SoCC Bat grouping consists of Eastern Small-Footed Myotis, Hoary Bat, Northern Myotis, Tri-Coloured Bat, Silver-Haired Bat, Little Brown Myotis and Eastern Red Bat. SoCC bat habitat is present as limited maternity roost features as described in Section 5.3.3. By respecting timing windows outlined in Section 5.5.4 (the bat maternity roost period of April 15 to August 31) in respect to vegetation, potential for directly mortality to bats will be minimized. Given the broad availability of Maternity Roost Habitat in the region, as well as the primary wooded areas being cleared consisting of pioneer-immature aspen-birch hardwood forest, it is expected that the loss of potential maternity roost features as a result of the project will not negatively impact the local bat population or have cumulative impacts on the broader landscape for these species.

5.4 Project Components and Activities

The following sections briefly describe the construction, operation and decommissioning phases of the Project. The information is taken from the Project Description Report. More detailed information will be provided in the Project Description Report, Construction Plan Report, Design and Operations Report, and Decommissioning Plan Report once created.

5.4.1 Construction

Construction is anticipated to occur over an approximate 24-month period, likely commencing in the first quarter of 2027, pending receipt of requisite permits and approvals. Activities associated with construction are summarized in Table 5-2. Further details regarding construction activities will be provided in the Construction Plan Report.

Table 5-2: General Description of Construction Activities

Activity	Description
Access Road Construction	Activities associated with construction of internal access roads will include: • Vegetation clearing as necessary; • Topsoil removal; • Placement of granular base; • Installation of ditches and culverts, as required; and • Removal of any access roads not required, replacement of topsoil, and seeding.
Site Preparation	Activities associated with the site preparation will include: • Removal of trees and large standing vegetation from areas where PV arrays will be constructed; • Preparation and implementation of a sediment and erosion control plan; and • Determination of locations of topsoil, timber, and vegetation stockpiles (not within 50 m of any identified wetlands or waterbodies).
Installation of Support Structures, PV Modules, Trackers, and Mounting Racks	Activities associated with the installation of support structures will include: • Construction of foundations and/or support structures beneath transformers, inverters and PV panels; • Installation of PV panels on racks mounted on tracking structures; • Installation of steel piles to be driven or screwed into the ground to support tracking structures and PV panels; and • Inspection of foundation construction and support structures prior to installation of PV panels and wiring.
Electrical Cable Installation	Activities associated with underground cable installation will include: • Installation of underground DC cabling from the termination point of the PV array to the inverters and medium-voltage transformers; • Installation of overhead and underground cabling from the inverters as necessary, to connect the PV array to the proposed substation and HONI transmission system; • Utilization of a simple trenching device to install the cables; whereby a slot will be opened, the cable will be laid, and the soil replaced; and • Installation of a short (approximately 50 m) overhead transmission line to enable connection to the existing HONI 115-kV transmission line. This is to be constructed between the substation yard and point of interconnection (POI) with the existing HONI transmission line.

Activity	Description
Substation Construction	Activities associated with the substation construction will include; Excavation of topsoil, installation of ground grid, foundation construction, construction of secondary containment, covering of the area with crushed stone, and installation of the substation transformer and other electrical equipment.
Site Security	Activities associated with site security will include: Installation of perimeter fencing consisting of a chain-link fenced topped with barbed wire and access gates to prevent unauthorized access.

5.4.2 Operation and Maintenance

The Project will operate year-round and generate electricity during daylight hours. The amount of power generated will depend on daily weather conditions and sufficient solar irradiation. The Project will be operated remotely. The project will primarily be monitored remotely. A permanent workforce is not expected to be required on site with the exception of maintenance and inspection staff or security personnel (as needed). To ensure the safety and integrity of the Project, access will be limited to Project personnel and unauthorized public access will be prevented by fences, gates and security procedures. Operationally, there are no significant hazards involved in the operation of the Project, nor are hazardous materials stored on site or created by the Project during its operation. The Project will not generate significant quantities of waste from its operation.

The Project solar PV modules, inverters and transformers and other electrical equipment, wiring and electrical connections will be routinely inspected, typically on a monthly basis. Any broken or malfunctioning PV modules, electrical cabling or components will be repaired or replaced by facility staff. Trash, debris and equipment parts replaced during maintenance and repair activities will be collected and properly stored in waste disposal bins. All waste collected during operation of the Project will be removed in accordance with provincial and municipal requirements. Vegetative ground cover, drainage systems and trees will be monitored and maintained, typically on a monthly basis. If required, water trucks will bring water to supply the water to support vegetative cover.

The Project has been designed to accommodate agricultural land use (agrivoltaics) throughout operations, specifically low-intensity grazing or crop production beneath and between solar, subject to landowner agreements and contractor availability. These activities would not require additional vegetation clearing or ground disturbance beyond that assessed for the Project. In all cases, agrivoltaics activities would be limited to the fenced in areas of the Project Location.

No hazardous chemicals are anticipated to be used for regular maintenance or vegetation abatement activities and will only be considered for management of invasive species, where present. The Project Location, including any drainage features (e.g., grassed swales, culverts) and any sediment and erosion control measures (e.g., riprap protection, rock flow checks) will be visually inspected for any signs of erosion or sedimentation and recorded.

Regular maintenance such as the cleanout of accumulated sediment and/or the removal of any debris blockage would be conducted at that time. The need to clean the solar PV modules will be determined according to local weather conditions, such as the quantity and frequency of rain and snow at the Project Location. At the very most, it is expected that the modules will require cleaning quarterly, but it is possible that cleaning the modules will not be necessary at all. If required, water trucks will bring water to supply the water required. No chemicals will be used for the cleaning of the modules. The transformers will be visually inspected on a quarterly basis and their status recorded. Any faulty equipment that could result in an oil leak will be repaired and any observed leaks will be cleaned up immediately by maintenance personnel. During winter, primary access roads will be ploughed to clear snow to maintain access of personnel to Project facilities.

Unless access is required for annual vegetation control, there will be no activities occurring within the 50 m buffers from any wetland surrounding the Project Location. Further details regarding construction activities will be provided in the Design and Operations Report.

5.4.3 **Decommissioning**

The anticipated lifespan of the Project is approximately 35 years. At that time the Project will be decommissioned or refurbished depending on market conditions and/or technological changes.

If the decision is to discontinue renewable energy generation, the decommissioning process would likely involve the following:

- Removal of the scrap metal and cabling. Where possible, these materials will be recycled, with non-recyclables taken to an approved disposal site;
- Removal of trackers, support structures, and foundations; these materials will be recycled where possible;
- Cleanup and any necessary re-grading; and
- A Decommissioning Plan Report will be developed and published as part of the REA application process.

Further details regarding decommissioning activities will be provided in the Decommissioning Plan Report.

5.5 **Environmental Effects Assessment**

Multiple generalized candidate SWH (cSWH) types (as summarized in Section 5.2) have been identified in and within 50 m of the Project Location and are being treated as significant as part of the EIS. In accordance with the NHAG (MNR, 2026) an assessment of direct and indirect effects to significant natural features. An attestation regarding the required information or activities relevant to the Environmental Effects Monitoring Plan were completed by a qualified person(s) as set out in the NHAG and were undertaken according to requirements, criteria and procedures set out in O. Reg. 359/09 under the EPA and the

NHAG for Renewable Energy Projects is available in Appendix B. Associated qualifications of the staff responsible for completing the work is also available in Appendix B.

5.5.1 ***Species of Conservation Concern***

Potential effects of the Project on SoCC can largely be avoided through seasonal timing windows associated with clearing and tilling land. The grassland habitat for SoCC species is marginal as minimal perching areas and cover is available for these species. Construction will be phased to minimize impacts on grassland birds. All earthworks will commence outside of the grassland bird nesting period to minimize direct effects on resident grassland bird species and prevent direct impacts to active nests.

No impacts to bird SoCC species are expected to occur throughout operation or decommissioning.

5.5.2 ***Bat Maternity Roost Habitat***

Potential effects of the Project on generalized maternity roost habitat can largely be avoided through seasonal timing windows associated with clearing and tilling land. All tree clearing will take place outside of the bat maternity roost period of April 15 to August 31. Generally, potential for maternity roost habitat in the area proposed to be cleared is marginal with limited snags posing opportunities for maternity roosts.

No impacts to bat maternity roost habitat are expected to occur throughout operation or decommissioning.

5.5.3 ***Bald Eagle Nesting Habitat***

As described in Section 4.3.3, Bald Eagle Nesting activity was confirmed to occur within 50 m of the Project Location. Nesting activity is typically tied to riparian areas of lakes, rivers and significant creeks. Mather Creek is the closest water body to the Bald Eagle nest. The Project Location generally avoids areas between the active nest and Mather Creek and, therefore, foraging activities associated with the nesting are not expected to be affected.

Bald Eagle nesting activity is sensitive to disturbance during nesting and feeding periods defined as February 15 to August 15 in northwest Ontario. Flushing of nesting eagles from the nest could occur due to the increased presence of humans, construction equipment, or installation activities during this period. Additionally, noise and maintenance activities occurring during operation of the facility may present an ongoing disturbance to nesting activity during this time period. Indirectly, impacts to resident fish populations within Mather Creek could affect Bald Eagle's changing or increasing effort required to forage.

According to the SWHMist tool (MNR, 2014), SWH associated with Bald Eagle nests extends 400 to 800 m from the active nest where contiguous woodlands are present. The 400 to 800 m depends on lines of site and existing presence of human disturbances. Smaller or larger setbacks may be appropriate depending on the birds' tolerance for human disturbance. Development on lands adjacent to wetlands or waterbodies being used as nesting sites may have little impact on their function, depending on the distance of the development from the

significant habitat (foraging, roosting, flight paths), the types of activity that may occur, and the level of eagle habituation to human disturbance.

In the case of the nest adjacent to the proposed Project, the nearest water body likely to be used as foraging/roosting habitat is Mather Creek. In all cases flight paths between the nest and creek avoid the potential Project. No tree clearing will be completed along the creek as a 50 m setback will be applied from the Project Location to the wetland areas surrounding Mather Creek. An existing transmission line is present within 50 m of the nest feature and agricultural activities are ongoing in all directions surrounding the nest feature, suggesting some level of habituation to human disturbance.

To minimize effects on the nesting feature, the Project Location will be set back 120 m. Major construction such as Site Clearing (earthworks) and foundation installation will be limited to periods outside of the sensitive period (August to February) within 400 m of the Bald Eagle Nest. Tree clearing will largely avoid areas within approximately 800 m of the nesting feature. All tree clearing will take place outside of the most sensitive timing windows associated with Bald Eagle nesting. This is expected to preserve any present roosting or foraging activity that is taking place in the area. Standard sediment and erosion controls will be in place to minimize impacts of potential sedimentation events to riparian areas throughout construction. This is expected to be sufficient to prevent impacts to resident fish populations, minimizing potential indirect effects on Bald Eagle nesting activities.

To minimize impacts during operations, noise generating equipment (substation, transformers and inverters) will be located a minimum of 400 m away from the nest feature. Further noise studies will take place to predict impacts to baseline noise levels in the area and specifically the Bald Eagle Nest Feature. A stormwater management plan and design will be developed and is expected to minimize or prevent changes to the adjacent water levels or quality of Mather Creek.

Further construction monitoring is proposed to take place to understand potential impacts to the feature. Generally, the 400 m restricted area will be removed where the Bald Eagle nest is no longer or not in use during the construction period. Similarly, if visible agitation or disturbance is noted to nesting Bald Eagles, larger construction setbacks may be proposed during the nesting and rearing periods.

5.5.4 Potential Environmental Effects and Mitigation Measures

An assessment of potential environmental effects, recommended mitigation measures, and residual effects during all Project phases is provided in Table 5-4. Characterization and assessment of residual effects following mitigation is also provided, with criteria outlined in Table 5-3 below.

Table 5-3: Environmental Effects Analysis Criteria

Criteria	Description of Threshold Ratings
Magnitude	• Negligible (0): No detectable change from baseline conditions. • Low (1): Differs from the average value for baseline conditions but remains within the range of natural variation and below a guideline or threshold value. • Medium (2): Differs substantially from the average value for baseline conditions and approaches the limits of natural variation, but equal to or slightly above a guideline or threshold value. • High (3): Differs substantially from baseline conditions and is significantly beyond a guideline or threshold value, resulting in a detectable change beyond the range of natural variation.
Geographical Extent (Biophysical)	• Project Location (1): Impact is limited to the Project Location. • Study Area (within 50 m of Project Location) (2): Effect occurs throughout the Study Area. • Beyond Study Area (3): Effect extends beyond the Study Area.
Duration	• Short Term (1): Impact lasts less than 2 years (e.g., during the Construction Phase of the Project). • Medium Term (2): Impact lasts from 2 to 50 years (i.e., encompassing construction and operation phases). • Long Term (3): Impact lasts from 50 to 53 years (i.e., impact lasts into the decommissioning and post-closure phase).
Frequency	• One Time (1): Impact is confined to one discrete event. • Sporadic (2): Impact occurs rarely and at sporadic intervals. • Regular (3): Impact occurs on a regular basis. • Continuous (4): Impact occurs constantly.
Reversibility	• Reversible (1): Impact can be reversed. • Partially Reversible (2): Impact can be partially reversed. • Permanent (3): Impact cannot be reversed, is of permanent duration.
Ecological and Socio-Economic Context	• High (1): The receiving environment or population has a high natural resilience to imposed stresses, and can respond and adapt to the impact. • Neutral (2): The receiving environment or population has a neutral resilience to imposed stresses and may be able to respond and adapt to the impact. • Low (3): The receiving environment or population has a low resilience to imposed stresses, and will not easily adapt to the impact.
Certainty of Knowledge	• High (1): There is a good understanding of the cause-effect relationship and all necessary data are available for the Project. The effectiveness of the mitigation measures is well known. There is a low degree of uncertainty, and variation from the predicted effect is expected to be low. • Moderate (2): The cause-effect relationships are not fully understood, there are a number of unknown external variables, or data for the Project are incomplete. The effectiveness of mitigation measures is moderately well understood. There is a moderate degree of uncertainty; while results may vary, predictions are relatively confident. • Low (3): The cause-effect relationships are poorly understood, there are a number of unknown external variables, and data for the Project are incomplete. The effectiveness of the mitigation measures may not yet be proven. High degree of uncertainty and final results may vary considerably.

Table 5-4: Potential Environmental Effects and Mitigation

Natural Features - Significant or Treated as Significant	Construction Activity	Potential Environmental Effects	Mitigation and Contingency Measures	Residual Environmental Effects Analysis						
				Magnitude	Geographic Extent	Duration	Frequency	Reversibility	Ecological and Socio-Economic Context	Certainty of Knowledge
Bat Maternity Roost Habitat	Construction Phase Site preparation (vegetation clearing, minor grading).	Loss of habitat function following construction of the Project is expected. Incidental take of individuals is possible if clearing takes place within the bat maternity roost window.	- Complete site clearing and grading outside of the active bat maternity period (April 15 to August 31). - Flag project extents to prevent unauthorized access during construction to areas not required to be cleared for the Project.	1	1	2	1	3	1	1
SoCC Grassland Birds	Construction Phase - Site preparation (vegetation clearing, minor grading). - Access roads (water crossings). - Installation of Project Components (e.g., access roads, perimeter fencing, solar panels, underground cables).	Temporary loss of available foraging or nesting habitat. Incidental take of individuals is possible if clearing takes place within the bird nesting window.	- Complete site clearing and grading outside of the active grassland bird, breeding bird nesting period or bat maternity roosting period (April 15 to August 31). - Flag project extents to prevent unauthorized access during construction to areas not required to be cleared for the Project.	1	2	2	1	3	2	1
SoCC Grassland Nesting Birds	Construction Phase - Site preparation (vegetation clearing, minor grading). - Access roads (water crossings). - Installation of Project Components (e.g., access roads, perimeter fencing, solar panels, underground cables).	Temporary loss of available foraging or loss of nesting habitat. Incidental take of individuals is possible if clearing takes place within the bird nesting window.	- Complete site clearing and grading outside of the active grassland bird, breeding bird nesting period or bat maternity roosting period (April 15 to August 31). - Ceasing construction should an active nest be found within the clearing area and waiting for them to clear. - Flag project extents to prevent unauthorized access during construction to areas not required to be cleared for the Project.	1	2	2	1	3	2	2
SoCC Forest Nesting Birds	Construction Phase Site preparation (vegetation clearing, minor grading). Operational Phase Right-of-way maintenance (vegetation clearing).	Temporary loss of available foraging or loss of nesting habitat. Incidental take of individuals is possible if clearing takes place within the bird nesting window.	- Complete site clearing and grading outside of the active grassland bird, breeding bird nesting period or bat maternity roosting period (April 15 to August 31). - Ceasing construction should an active nest be found within the clearing area and waiting for them to clear.	1	2	2	1	2	2	2
SoCC Shrub Nesting Birds	Construction Phase Site preparation (vegetation clearing, minor grading). Operational Phase Right-of-way maintenance (vegetation clearing).	Temporary loss of available foraging or loss of nesting habitat. Incidental take of individuals is possible if clearing takes place within the bird nesting window.	- Complete site clearing and grading outside of the active grassland bird, breeding bird nesting period or bat maternity roosting period (April 15 to August 31). - Ceasing construction should an active roost be found within the clearing area and waiting for them to clear.	1	2	2	1	3	2	2
Bald Eagle/Osprey Nesting	Construction Phase - Site preparation (vegetation clearing, minor grading). - Access roads (water crossings). - Installation of Project Components (e.g., access roads, perimeter fencing, solar panels, underground cables).	Noise and visual disturbance to nest feature	- Setback Project components 120 m from Significant Wildlife habitat (SWH). - Construction timing to avoid work within 400 m of feature within sensitive nesting/rearing periods (February 15 to August 15).	2	2	2	2	2	2	2

Natural Features - Significant or Treated as Significant	Construction Activity	Potential Environmental Effects	Mitigation and Contingency Measures	Residual Environmental Effects Analysis						
				Magnitude	Geographic Extent	Duration	Frequency	Reversibility	Ecological and Socio- Economic Context	Certainty of Knowledge
	Operation Phase - Accessing area for maintenance activities. - Maintenance activities within 400 m of features. Decommissioning Phase - Removal of Project Components (e.g., access roads, perimeter fencing, solar panels, underground cables).	.	- Locating noise generating equipment outside of a 400 m setback from the feature. - Ongoing monitoring of usage or observed disturbance during sensitive nesting or rearing windows. - Ceasing construction should an Osprey or Eagle be found within the clearing area and waiting for them to clear.							

5.6 Environmental Effects Monitoring Plan

In accordance with the REA Regulation, the monitoring plan identifies:

- Performance objectives in respect of the negative environmental effects to natural features;
- Mitigation measures to assist in achieving the performance objectives; and
- A program for monitoring negative environmental effects for the Project duration, including a contingency plan, to be implemented if any mitigation measures fail.

A monitoring plan to verify that proposed mitigation measures are functioning as designed (to meet performance objectives) is provided in Table 5-5. If monitoring efforts indicate that performance objectives are not being met, contingency measures will be used to ensure that remedial action is implemented, as necessary. An attestation regarding the required information or activities relevant to the Environmental Effects Monitoring Plan were completed by a qualified person(s) as set out in the NHAG and were undertaken according to requirements, criteria and procedures set out in O. Reg. 359/09 under the EPA and the NHAG for Renewable Energy Projects is available in Appendix B.

This material will be carried forward into the Projects Construction Plan Report, Design and operations Report and Decommissioning Plan Report.

Table 5-5: Environmental Effects Monitoring Plan

Negative Effect	Mitigation Strategy	Performance Objective	Monitoring Plan					Contingency Measures
			Methodology	Monitoring Locations	Frequency	Rationale	Reporting Requirements	
Erosion and sedimentation resulting in increased turbidity in site runoff.	A sediment and erosion control plan expected to include vegetation retention where possible. Vegetated setbacks of Project components to sensitive features. Sediment and erosion controls (e.g., silt fences, rock check dams, straw bales, erosion control blankets) will be installed and maintained between the Project Location and wetlands or watercourses where work is required within 50 m of wetlands or 120 m of water features.	No long-term erosion from site over and above existing conditions.	Visual monitoring of vegetated areas and drainage features that convey runoff to identify areas of erosion (e.g., rills, gullies). Visual monitoring of ESC measures to ensure they remain effective throughout construction.	Throughout Project Location.	During regular site inspections throughout construction and operation.	Visual monitoring of erosion would identify potential areas of concern.	Maintenance and improvement requirements actioned as needed and reported internally throughout monthly construction monitoring reports. Ongoing status of permanent features reported internally within annual operations report.	Erosion remediated as necessary to ensure no long-term erosion issues.
Potential for adverse surface water, groundwater and soil quality due to accidental spills.	Standard mitigation to prevent spills and minimize magnitude of spills if they occur. For example, refueling at least 50 m from wetlands and water features.	No long-term environmental effects due to spills.	Visual monitoring at transformer locations and monitoring of spill prevention measures.	Throughout Project Location.	During regular site inspections.	Visual monitoring would identify potential areas of concern and ensure that spill prevention and control measures are functioning as designed and protocols are being implemented as specified in plans to meet performance objectives.	All spills and remediation efforts reported throughout monthly construction monitoring reports. Ongoing status reported internally within annual operations report. Reportable spills must be documents and reported to the Ontario Spills Action Centre.	Spill contingency measures implemented as necessary in the event of a spill. Following spill event, response will be reviewed to determine if additional or altered response protocols are necessary to meet performance objectives.
Increases in surface water runoff/change in drainage and hydrological conditions.	Stormwater management measures which may include enhanced vegetated swales, ditch flow controls and filter strips.	Minimal changes in drainage and conditions of receiving wetlands and waterbodies.	Visual assessment of structural stability of mitigation measures and identification of unintended impacts.	Throughout Project Location.	During regular site inspections.	Visual monitoring will confirm that stormwater management measures remain as designed and allow identification of deficiencies.	Reported internally annual operations report.	Stormwater management measures will be remediated as necessary to ensure that they are functioning as designed.
Incidental take of wildlife.	Speeds to be limited on Project Location and maintenance workforce to be made aware of potential for wildlife on the Project Location. Vegetation clearing will be conducted in fall/winter months outside of the nesting period for breeding birds and outside of the bat maternity roosting period.	Minimal occurrences of incidental take.	Visual monitoring of access roads and other site areas will be conducted by maintenance personnel and occasions of incidental take reported as they are identified.	Throughout Project Location.	Ongoing during maintenance activities.	Incidental take will be reported by maintenance staff to personnel responsible for environmental protection if incidents occur.	Any incidental takes on wildlife will be documented internally and reported within monthly construction monitoring reports. No operational requirement. Any incidental takes of species of conservation concern in which case reporting will be immediate to the MECP/Environment Canada.	If incidental take of species of conservation concern are recorded, work will be ceased until a trained biologist can state that no other individuals of the species is present in the work area. Injured wildlife, specifically reptiles, will be taken to a wildlife rehabilitation center.

Negative Effect	Mitigation Strategy	Performance Objective	Monitoring Plan					Contingency Measures
			Methodology	Monitoring Locations	Frequency	Rationale	Reporting Requirements	
Loss of Species of Conservation Concern Habitats	Phasing Project to prevent impacts to SoCC (i.e., clearing outside of the active nesting period).	Minimize impacts to grassland nesting birds.	Earthworks activities in grassland habitats to be phased prior to any nesting activity becoming established. This will be confirmed via biologist where necessary. Vegetation on site may be maintained to a level to minimize grassland bird habitation.	All Project areas.	Ahead of earthworks starting in new locations.	Only tall grass areas are likely to support any grassland bird species including all SoCC observed within the Project area.	Documented internally in construction monitoring reports.	Nest sweep of areas immediately ahead of construction. Delaying construction to outside of nesting period.
Disturbance of Bald Eagle Nesting Activity	Project setbacks, construction timing.	Minimal instances of disturbing Bald Eagle from nest when active.	Ongoing observation when working within 800 m of bald eagle nest.	Bald Eagle Nest and buffer area.	Daily during construction commencement during February 15 to August 15 timeframe. Once setback is established at sufficient distance weekly observations.	If nesting eagle is flushed from its nest several times throughout the day due to noise/disturbance, construction setbacks may need to be reevaluated during sensitive time periods.	Documented internally as needed in monthly construction monitoring reports.	Widening construction setbacks during sensitive nesting and rearing periods.

6. NHA Conclusions

The Project Location is primarily on disturbed pasture, agricultural lands, and regenerative forest habitats. The Project Location is generally characterized as having an abundance of grassland, meadow, and prairie habitat that are utilized as pasturelands for cattle, hay production, and annual row crops. The NHA identified wetlands and cSWH that have prescribed setbacks for protection. Furthermore, an EIS was prepared to address potential negative effects to these features as well as identify monitoring activities to confirm the effectiveness of the recommended mitigation measure. Mitigation measures have been identified to avoid and minimize potential effects. A monitoring plan has also been developed to ensure that performance objectives are met and implement contingency plans if mitigation measures fail. The mitigation measures identified in the Project Description Report and NHA EIS are intended to address potential environmental effects for both significant and non-significant natural features.

Overall, the Project has been sited to avoid sensitive natural features, where possible, particularly wetlands and watercourses, which exist on the edges of the Project boundaries. While there are potential negative environmental effects identified for this Project, the majority of effects can be mitigated through construction phasing and standard Best Management Practices.

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Appendix A

Species Identified in the Records Review

Common Name	Scientific Name	SARA Schedule 1	PSO	COSSARO	S-Rank	Source	COSEWIC
Alder Flycatcher	<i>Empidonax alnorum</i>				S5B	OBBA	
American Bittern	<i>Botaurus lentiginosus</i>				S5B	OBBA	
American Black Duck	<i>Anas rubripes</i>				S4	OBBA	
American Coot	<i>Fulica americana</i>				S3B, S4N	OBBA	
American Crow	<i>Corvus brachyrhynchos</i>				S5	OBBA	
American Goldfinch	<i>Spinus tristis</i>				S5	OBBA	
American Goshawk	<i>Accipiter gentilis</i>				S4B	OBBA	
American Herring Gull	<i>Larus smithsonianus</i>				S4B, S5N	OBBA	
American Kestrel	<i>Falco sparverius</i>				S4	OBBA	
American Redstart	<i>Setophaga ruticilla</i>				S5B	OBBA	
American Robin	<i>Turdus migratorius</i>				S5	OBBA	
American Three-toed Woodpecker	<i>Picoides dorsalis</i>				S4	OBBA	
American White Pelican	<i>Pelecanus erythrorhynchos</i>			SC	S3B, S4M	OBBA	NAR
American Wigeon	<i>Mareca americana</i>				S4B, S4N, S5M	OBBA	
American Woodcock	<i>Scolopax minor</i>				S4B	OBBA	
Baltimore Oriole	<i>Icterus galbula</i>				S4B	OBBA	
Bank Swallow	<i>Riparia riparia</i>	THR			S4B	OBBA	THR
Barred Owl	<i>Strix varia</i>				S5	OBBA	
Barn Swallow	<i>Hirundo rustica</i>	THR		SC	S4B	OBBA	SC
Bay-breasted Warbler	<i>Setophaga castanea</i>				S5B	OBBA	
Bald Eagle	<i>Haliaeetus leucocephalus</i>				S4	OBBA	
Belted Kingfisher	<i>Megaceryle alcyon</i>				S5B, S4N	OBBA	
Black Tern	<i>Chlidonias niger</i>				S3B, S4M	OBBA	
Black-and-white Warbler	<i>Mniotilta varia</i>				S5B	OBBA	
Black-backed Woodpecker	<i>Picoides arcticus</i>				S5	OBBA	
Black-billed Cuckoo	<i>Coccyzus erythrophthalmus</i>				S4, S5B	OBBA	
Black-billed Magpie	<i>Pica hudsonia</i>				S2	OBBA	
Black-capped Chickadee	<i>Poecile atricapillus</i>				S5	OBBA	
Black-throated Blue Warbler	<i>Setophaga caerulescens</i>				S5B	OBBA	
Black-throated Green Warbler	<i>Setophaga virens</i>				S5B	OBBA	
Blackburnian Warbler	<i>Setophaga fusca</i>				S5B	OBBA	
Blue Jay	<i>Cyanocitta cristata</i>				S5	OBBA	
Blue-headed Vireo	<i>Vireo solitarius</i>				S5B	OBBA	
Blue-winged Teal	<i>Spatula discors</i>				S3B, S4M	OBBA	

Bobolink	<i>Dolichonyx oryzivorus</i>	THR	THR	S4B	OBBA	SC
Bonaparte's Gull	<i>Chroicocephalus philadelphia</i>			S5	OBBA	
Boreal Chickadee	<i>Poecile hudsonicus</i>			S4	OBBA	
Boreal Owl	<i>Aegolius funereus</i>			S4	OBBA	
Brewer's Blackbird	<i>Pica hudsonia</i>			S2	OBBA	
Broad-winged Hawk	<i>Buteo platypterus</i>			S5B	OBBA	
Brown Creeper	<i>Certhia americana</i>			S5	OBBA	
Brown Thrasher	<i>Toxostoma rufum</i>			S4B	OBBA	
Brown-headed Cowbird	<i>Molothrus ater</i>			S5	OBBA	
Canada Goose	<i>Branta canadensis</i>			S5	OBBA	
Canada Jay	<i>Perisoreus canadensis</i>			S5	OBBA	
Canada Warbler	<i>Cardellina canadensis</i>	THR	SC	S5B	OBBA	SC
Cape May Warbler	<i>Setophaga tigrina</i>			S5B	OBBA	
Cedar Waxwing	<i>Bombycilla cedrorum</i>			S5	OBBA	
Chestnut-sided Warbler	<i>Setophaga pensylvanica</i>			S5B	OBBA	
Chimney Swift	<i>Chaetura pelagica</i>			S5	OBBA (15VP39)	
Chipping Sparrow	<i>Spizella passerina</i>			S5B, S3N	OBBA	
Clay-colored Sparrow	<i>Spizella pallida</i>			S4B	OBBA	
Cliff Swallow	<i>Petrochelidon pyrrhonota</i>			S4, S5B	OBBA	
Common Goldeneye	<i>Bucephala clangula</i>			S5	OBBA	
Common Grackle	<i>Quiscalus quiscula</i>			S5	OBBA	
Common Loon	<i>Gavia immer</i>			S5	OBBA	
Common Merganser	<i>Mergus merganser</i>			S5	OBBA	
Common Nighthawk	<i>Chordeiles minor</i>		SC	S4B	OBBA	SC
Common Raven	<i>Corvus corax</i>			S5	OBBA	
Common Tern	<i>Sterna hirundo</i>			S4B	OBBA	
Common Yellowthroat	<i>Geothlypis trichas</i>			S5B, S3N	OBBA	
Connecticut Warbler	<i>Oporornis agilis</i>			S5B	OBBA	
Cooper's Hawk	<i>Accipiter cooperii</i>			S4	OBBA	
Dark-eyed Junco	<i>Junco hyemalis</i>			S5	OBBA	
Dickcissel	<i>Spiza americana</i>			S2M	OBBA	
Double-crested Cormorant	<i>Nannopterum auritum</i>			S5B, S4N	OBBA	
Downy Woodpecker	<i>Dryobates pubescens</i>			S5	OBBA	
Eastern Bluebird	<i>Sialia sialis</i>			S5B, S4N	OBBA	
Eastern Kingbird	<i>Tyrannus tyrannus</i>			S4B	OBBA	
Eastern Meadowlark	<i>Sturnella magna</i>	THR	THR	S4B, S3N	OBBA	THR
Eastern Phoebe	<i>Sayornis phoebe</i>			S5B	OBBA	

Eastern Warbling Vireo	<i>Vireo gilvus</i>				S5B	OBBA	
Eastern Whip-poor-will	<i>Antrostomus vociferus</i>	THR		SC	S4B	OBBA	SC
Eastern Wood-Pewee	<i>Contopus virens</i>			SC	S4B	OBBA	SC
European Starling	<i>Sturnus vulgaris</i>				SNA	OBBA	
Evening Grosbeak	<i>Coccothraustes vespertinus</i>			SC	S4	OBBA	SC
Gadwall	<i>Mareca strepera</i>				S4B, S4N, S5M	OBBA	
Golden-crowned Kinglet	<i>Regulus satrapa</i>				S5	OBBA	
Golden-winged Warbler	<i>Vermivora chrysoptera</i>	THR	SC	SC	S3B	OBBA	THR
Grasshopper Sparrow	<i>Ammodramus savannarum</i>				S4B	OBBA	SC
Gray Catbird	<i>Dumetella carolinensis</i>				S5B, S3N	OBBA	
Great Blue Heron	<i>Ardea herodias</i>				S4	OBBA	
Great Crested Flycatcher	<i>Myiarchus crinitus</i>				S5B	OBBA	
Great Gray Owl	<i>Strix nebulosa</i>				S4	OBBA	
Great Horned Owl	<i>Bubo virginianus</i>				S4	OBBA	
Green-winged Teal	<i>Anas crecca</i>				S4B, S4N, S5M	OBBA	
Hairy Woodpecker	<i>Dryobates villosus</i>				S5	OBBA	
Hermit Thrush	<i>Catharus guttatus</i>				S5B, S4N	OBBA	
Hooded Merganser	<i>Lophodytes cucullatus</i>				S5	OBBA	
Horned Lark	<i>Eremophila alpestris</i>				S4	OBBA	
House Finch	<i>Haemorhous mexicanus</i>				SNA	OBBA	
House Sparrow	<i>Passer domesticus</i>				SNA	OBBA	
Indigo Bunting	<i>Passerina cyanea</i>				S5B	OBBA	
Killdeer	<i>Charadrius vociferus</i>				S4B	OBBA	
Least Bittern	<i>Ixobrychus exilis</i>	THR		SC	S4B	OBBA	SC
Least Flycatcher	<i>Empidonax minimus</i>				S5B	OBBA	
LeConte's Sparrow	<i>Ammodramus lecontei</i>				S5B	OBBA	
Lesser Yellowlegs	<i>Tringa flavipes</i>		THR	THR	S3, S4B, S5M	OBBA	THR
Lincoln's Sparrow	<i>Melospiza lincolnii</i>				S5B	OBBA	
Long-eared Owl	<i>Asio otus</i>				S4	OBBA	
Magnolia Warbler	<i>Setophaga magnolia</i>				S5B	OBBA	
Mallard	<i>Anas platyrhynchos</i>				S5	OBBA	
Marsh Wren	<i>Cistothorus palustris</i>				S4B, S3N	OBBA	
Merlin	<i>Falco columbarius</i>				S5	OBBA	
Mourning Dove	<i>Zenaidura macroura</i>				S5	OBBA	
Mourning Warbler	<i>Geothlypis philadelphia</i>				S5B	OBBA	
Nashville Warbler	<i>Leiothlypis ruficapilla</i>				S5B	OBBA	
Northern Cardinal	<i>Cardinalis cardinalis</i>				S5	OBBA	
Northern Flicker	<i>Colaptes auratus</i>				S5	OBBA	

Northern Harrier	<i>Circus hudsonius</i>			S5B, S4N	OBBA	
Northern Hawk Owl	<i>Surnia ulula</i>			S4	OBBA	
Northern House Wren	<i>Troglodytes aedon</i>			S5B	OBBA	
Northern Mockingbird	<i>Mimus polyglottos</i>			S4	OBBA	
Northern Parula	<i>Setophaga americana</i>			S5B	OBBA	
Northern Pintail	<i>Anas acuta</i>			S5B, S4N	OBBA	
Northern Rough-winged Swallow	<i>Stelgidopteryx serripennis</i>			S4B	OBBA	
Northern Saw-whet Owl	<i>Aegolius acadicus</i>			S5	OBBA	
Northern Shoveler	<i>Spatula clypeata</i>			S4B, S4N, S5M	OBBA	
Northern Waterthrush	<i>Parkesia noveboracensis</i>			S5B	OBBA	
Northern Yellow Warbler	<i>Setophaga petechia</i>			S5B	OBBA	
Olive-sided Flycatcher	<i>Contopus cooperi</i>		SC	S4B	OBBA	SC
Osprey	<i>Pandion haliaetus</i>			S5B	OBBA	
Ovenbird	<i>Seiurus aurocapilla</i>			S5B	OBBA	
Palm Warbler	<i>Setophaga palmarum</i>			S5B	OBBA	
Peregrine Falcon	<i>Falco peregrinus</i>			S4	OBBA	SC
Philadelphia Vireo	<i>Vireo philadelphicus</i>			S5B	OBBA	
Pied-billed Grebe	<i>Podilymbus podiceps</i>			S4B, S2N	OBBA	
Pileated Woodpecker	<i>Dryocopus pileatus</i>			S5	OBBA	
Pine Siskin	<i>Spinus pinus</i>			S5	OBBA	
Pine Warbler	<i>Setophaga pinus</i>			S5B, S3N	OBBA	
Purple Finch	<i>Haemorhous purpureus</i>			S5	OBBA	
Purple Martin	<i>Progne subis</i>			S3B	OBBA	
Red Crossbill	<i>Loxia curvirostra</i>			S5	OBBA	
Red-bellied Woodpecker	<i>Melanerpes carolinus</i>			S5	OBBA	
Red-breasted Merganser	<i>Mergus serrator</i>			S5	OBBA	
Red-breasted Nuthatch	<i>Sitta canadensis</i>			S5	OBBA	
Red-eyed Vireo	<i>Vireo olivaceus</i>			S5B	OBBA	
Red-headed Woodpecker	<i>Melanerpes erythrocephalus</i>	END	END	S3	OBBA	END
Red-tailed Hawk	<i>Buteo jamaicensis</i>			S5	OBBA	
Red-winged Blackbird	<i>Agelaius phoeniceus</i>			S5	OBBA	
Ring-billed Gull	<i>Larus delawarensis</i>			S5	OBBA	
Ring-necked Duck	<i>Aythya collaris</i>			S5B, S4N	OBBA	
Rock Pigeon (Feral Pigeon)	<i>Columba livia</i>			SNA	OBBA	
Rose-breasted Grosbeak	<i>Pheucticus ludovicianus</i>			S5B	OBBA	
Ruby-crowned Kinglet	<i>Regulus calendula</i>			S5B, S3N	OBBA	
Ruby-throated Hummingbird	<i>Archilochus colubris</i>			S5B	OBBA	

Ruddy Duck	<i>Oxyura jamaicensis</i>			S3B, S4N, S5M	OBBA	
Ruffed Grouse	<i>Bonasa umbellus</i>			S5	OBBA	
Rusty Blackbird	<i>Euphagus carolinus</i>		SC	S4B, S3N	OBBA	SC
Sandhill Crane	<i>Antigone canadensis</i>			S5B, S3N	OBBA	
Savannah Sparrow	<i>Passerculus sandwichensis</i>			S5B, S3N	OBBA	
Scarlet Tanager	<i>Piranga olivacea</i>			S5B	OBBA	
Sedge Wren	<i>Cistothorus stellaris</i>			S4B	OBBA	
Sharp-shinned Hawk	<i>Accipiter striatus</i>			S5	OBBA	
Sharp-tailed Grouse	<i>Tympanuchus phasianellus</i>			S4	OBBA	
Short-eared Owl	<i>Asio flammeus</i>	THR	THR	S4B, S2, S3N	OBBA	THR
Solitary Sandpiper	<i>Tringa solitaria</i>			S4B, S5M	OBBA	
Song Sparrow	<i>Melospiza melodia</i>			S5	OBBA	
Sora	<i>Porzana carolina</i>			S5B	OBBA	
Spotted Sandpiper	<i>Actitis macularius</i>			S5B	OBBA	
Spruce Grouse	<i>Falcapennis canadensis</i>			S5	OBBA	
Swainson's Thrush	<i>Catharus ustulatus</i>			S5B	OBBA	
Swamp Sparrow	<i>Melospiza georgiana</i>			S5B, S4N	OBBA	
Tennessee Warbler	<i>Leiothlypis peregrina</i>			S5B	OBBA	
Tree Swallow	<i>Tachycineta bicolor</i>			S4, S5B	OBBA	
Trumpeter Swan	<i>Cygnus buccinator</i>			S4	OBBA	
Turkey Vulture	<i>Cathartes aura</i>			S5B, S3N	OBBA	
Upland Sandpiper	<i>Bartramia longicauda</i>			S2B	OBBA	
Vesper Sparrow	<i>Poocetes gramineus</i>			S4B	OBBA	
Veery	<i>Catharus fuscescens</i>			S5B	OBBA	
Virginia Rail	<i>Rallus limicola</i>			S4, S5B	OBBA	
Western Meadowlark	<i>Sturnella neglecta</i>			S1B	OBBA	
White-breasted Nuthatch	<i>Sitta carolinensis</i>			S5	OBBA	
White-throated Sparrow	<i>Zonotrichia albicollis</i>			S5	OBBA	
White-winged Crossbill	<i>Loxia leucoptera</i>			S5	OBBA	
Wilson's Snipe	<i>Gallinago delicata</i>			S5B	OBBA	
Wilson's Warbler	<i>Cardellina pusilla</i>			S5B	OBBA	
Winter Wren	<i>Troglodytes hiemalis</i>			S5B, S4N	OBBA	
Wood Duck	<i>Aix sponsa</i>			S5B, S3N	OBBA	
Wood Thrush	<i>Hylocichla mustelina</i>	THR		S4B	OBBA	SC
Yellow Rail	<i>Coturnicops noveboracensis</i>		SC	S4, S5B	OBBA	SC
Yellow-bellied Flycatcher	<i>Empidonax flaviventris</i>			S5B	OBBA	
Yellow-bellied Sapsucker	<i>Sphyrapicus varius</i>			S5B, S3N	OBBA	

Yellow-rumped Warbler	<i>Setophaga coronata</i>			S5B, S4N	OBBA	
Yellow-throated Vireo	<i>Vireo flavifrons</i>			S4B	OBBA	
American Toad	<i>Anaxyrus americanus</i>			S5	ORRA	
Boreal Chorus Frog	<i>Pseudacris maculata</i>			S5	ORRA	
Gray Treefrog	<i>Hyla versicolor</i>			S5	ORRA	
Northern Leopard Frog	<i>Lithobates pipiens</i>			S5	ORRA	
Red-bellied Snake	<i>Storeria occipitomaculata</i>			S5	ORRA	
Red-sided Gartersnake	<i>Thamnophis sirtalis parietalis</i>			SU	ORRA	
Spring Peeper	<i>Pseudacris crucifer</i>			S5	ORRA	
Wood Frog	<i>Lithobates sylvaticus</i>			S5	ORRA	
Acadian Hairstreak	<i>Satyrium acadica</i>			S4	OBA	
Atlantis Fritillary	<i>Argynnis atlantis</i>			S5	OBA	
Bronze Copper	<i>Tharsalea hyllus</i>			S5	OBA	
Cabbage White	<i>Pieris rapae</i>			SNA	OBA	
Clouded Sulphur	<i>Colias philodice</i>			S5	OBA	
Compton Tortoiseshell	<i>Nymphalis l-album</i>			S5	OBA	
Common Wood-Nymph	<i>Cercyonis pegala</i>			S5	OBA	
Coral Hairstreak	<i>Satyrium titus</i>			S5	OBA	
Dorcas Copper	<i>Tharsalea dorcas</i>			S5	OBA	
Dun Skipper	<i>Euphyes vestris</i>			S5	OBA	
European Skipper	<i>Thymelicus lineola</i>			SNA	OBA	
Great Spangled Fritillary	<i>Argynnis cybele</i>			S5	OBA	
Meadow Fritillary	<i>Boloria bellona</i>			S5	OBA	
Milbert's Tortoiseshell	<i>Aglais milberti</i>			S5	OBA	
Mustard White	<i>Pieris oleracea</i>			S4	OBA	
Northern Crescent	<i>Phyciodes cocyta</i>			S5	OBA	
Painted Lady	<i>Vanessa cardui</i>			S5B	OBA	
Pink-edged Sulphur	<i>Colias interior</i>			S5	OBA	
White Admiral	<i>Limenitis arthemis arthemis</i>			S5	OBA	
Mammals						
Eastern Red Bat	<i>Lasiurus borealis</i>	END	END	S3	Recovery Strategy / COSEWIC	
Eastern Small-Footed Myotis	<i>Myotis leibii</i>		END	S2, S3	Recovery Strategy / COSEWIC	
Hoary Bat	<i>Lasiurus cinereus</i>	END	END	S3	Recovery Strategy / COSEWIC	END
Little Brown Myotis	<i>Myotis lucifugus</i>	END	END	S3	Recovery Strategy / COSEWIC	
Northern Myotis	<i>Myotis septentrionalis</i>	END	END	S3	Recovery Strategy / COSEWIC	END

Tri-Coloured Bat	<i>Perimyotis subflavus</i>	END	END	END	S3	Recovery Strategy / COSEWIC	END
Silver-Haired Bat	<i>Lasionycteris noctivagans</i>		END	END	S3	Recovery Strategy / COSEWIC	

Appendix B

Qualified Persons and Attestation

Attestation pursuant to subsection 28(2) of O. Reg. 359/09 under the *Environmental Protection Act (Ontario)* (“Attestation”)

of CarbonFree Rainy River Ltd. (the “**Applicant**”)

1. Authority to Act

I, Daniel Soper, authorized signatory of the Applicant hereby declare that I have the authority to act on behalf of the Applicant and to sign this attestation on the Applicant’s behalf.

2. Project Description and Location

The proposed project is a utility-scale, ground-mounted solar photovoltaic generating facility with a nameplate capacity of approximately 82 MW. It is located within the municipality of Chapple, Ontario, at approximately 5396889.41N, 433325.29 W. The project location and its surrounding area are further described and mapped in the assessment reports referenced in section 3 below.

3. Required Activities and Qualified Persons

The following assessments, reviews, investigations, reports and plans required to be prepared under O. Reg. 359/09 related to the Natural Heritage Assessment (H375916-0000-840-066-0002) were undertaken and/or completed by the qualified person(s) named below and set out in Table 1. Appendix A to this Attestation includes:

- (i) written confirmation from each qualified person that the assessments, reviews, investigations, reports and plans listed in Table 1 have been prepared and/or completed in accordance with O. Reg 359/09 and the Natural Heritage Assessment Guide; and
- (ii) curricula vitae of the qualified persons listed in Table 1, evidencing the qualifications described therein.

TABLE 1		
Reviewer/ Coordinator of all scopes of work	Chris Sehl (Hatch Ltd)	Bsc in Environmental Sciences and Environmental Biology; Diploma in Environmental Management and Assessment; 10 years of Environmental biology work/field experience. OWES certified; ELC training course completed
Desktop Review.	Taylor Simpanen (Hatch Ltd)	Diploma in Fish and Wildlife Technician; Diploma in Arboriculture and Urban Forestry; 6 years of field and reporting experience. Certifications in ELC, Maritime Wetland Delineation, Ontario

		Benthic identification, Electrofishing (Class 2) and Butternut Health Assessment.
Site Investigation	Taylor Simpanen (Hatch Ltd)	Diploma in Fish and Wildlife Technician; Diploma in Arboriculture and Urban Forestry; Six years of field and reporting experience. Certifications in ELC, Maritime Wetland Delineation, Ontario Benthic identification, Electrofishing (Class 2) and Butternut Health Assessment
	Audrey Nerino (Hatch Ltd)	Bachelor of Environmental Studies; Certificate e of Geomatics; Six years of relevant field experience
	Chris Sehl (Hatch Ltd) – Providing oversight and training associated with identification of potential Significant Wildlife Habitat and Wetland delineation and assessment	Bsc in Environmental Sciences and Environmental Biology; Diploma in Environmental Management and Assessment; 10 years of Environmental biology work/field experience. OWES certified; ELC training course completed
Evaluation of Significance	Chris Sehl (Wetlands), and	Bsc in Environmental Sciences and Environmental Biology; 10 years of Environmental biology work/field experience. OWES certified
	Taylor Simpanen (SWH and SoCC)	Diploma in Fish and Wildlife Technician; Diploma in Arboriculture and Urban Forestry; 6 years of field and reporting experience. Certifications in ELC, Maritime Wetland Delineation, Ontario Benthic identification, Electrofishing (Class 2) and Butternut Health Assessment
	Michael Babin (SWH and SoCC)	Honours in Bachelor of Arts and Science in Ecology and Geography; Diploma in Ecosystem Restoration. Six years of relevant field experience; ELC training course completed
Environmental Impact Study	Chris Sehl (Wetlands)	Bsc in Environmental Sciences and Environmental Biology; 10 years of Environmental biology work/field experience. OWES certified
	Taylor Simpanen (SWH and SoCC)	Diploma in Fish and Wildlife Technician; Diploma in Arboriculture and Urban Forestry; 6 years of field and reporting experience. Certifications in ELC, Maritime Wetland Delineation, Ontario Benthic identification, Electrofishing (Class 2) and Butternut Health Assessment
	Michael Babin (SWH and SoCC)	Honours in Bachelor of Arts and Science in Ecology and Geography; Diploma in Ecosystem Restoration. Six years of relevant field experience; ELC training course completed
Environmental Effects Monitoring Plan	Chris Sehl (Wetlands)	Bsc in Environmental Sciences and Environmental Biology; 10 years of Environmental biology work/field experience. OWES certified
	Taylor Simpanen (SWH and SoCC)	Diploma in Fish and Wildlife Technician; Diploma in Arboriculture and Urban Forestry; 6 years of field and reporting experience. Certifications in ELC, Maritime Wetland Delineation, Ontario Benthic identification, Electrofishing (Class 2) and Butternut Health Assessment

	Michael Babin (SWH and SoCC)	Honours in Bachelor of Arts and Science in Ecology and Geography; Diploma in Ecosystem Restoration. Six years of relevant field experience; ELC training course completed
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4. Statement of Attestation

I do hereby formally attest that the required activities specified herein were completed by a qualified person(s) as set out in the Natural Heritage Assessment Guide and were undertaken according to requirements, criteria and procedures set out in O. Reg. 359/09 under the Environmental Protection Act and the Natural Heritage Assessment Guide for Renewable Energy Projects. I further acknowledge, on behalf of the Applicant, that this Attestation may be made available to the public for consultation purposes as part of an application for a REA.



Signature: _____

Name: Daniel Soper

Position: Authorized signatory

On behalf of: CarbonFree Rainy River Ltd.

Date: June 24, 2026

APPENDIX A

Written Confirmations and Qualifications of Qualified Persons

1. A resume or curriculum vitae (C.V.) of each qualified person identified in Table 1 of the Attestation is included as an addendum to the Natura report required to be prepared under the O. Reg. 359/09.
2. I, the undersigned, as a qualified environmental biologist employed by Hatch Ltd can confirm the assessments, reviews, investigations reports and plans included within the Natural Heritage Assessment (H375916-0000-840-066-0002), as outlined in Table 1 of this Attestation, have been prepared and/or completed in accordance with O. Reg. 359/09 and the Natural Heritage Assessment Guide for Renewable Energy Projects.

Christopher Sehl



Taylor Simpanen



Michael Babin

Babin, Michael

Audrey Nerino



CORE TEAM MEMBER

Michael Babin

NATURAL HERITAGE LEAD



Education & Qualifications

Graduate Diploma, Ecosystem Restoration, Niagara College, 2020
BASC. (Hons), Ecology and Geography, University of Guelph, Guelph, ON, 2019

Experience

6 years

Specialties

Ecology, Biology, Reptiles, Amphibians,
Environmental Assessment, EIS, Vegetation, Plants,
Trees.

Michael is a Biologist/Terrestrial Ecologist working out of the Environment and Sustainability department at Hatch. Michael graduated from the University of Guelph in 2019 with a Bachelor of Arts and Sciences in Ecology and Geography. He later received a graduate diploma in Ecosystem Restoration from Niagara College. Michael began his career shortly after primarily working with Species at Risk including the Eastern Massasauga, Spotted Turtle, Fowler's Toad and more. While continuing to work with Species at Risk, Michael started to expand his career into environmental consulting, primarily within solar and wind power projects, where he has completed several projects in Ontario, Quebec and New Brunswick. During this time, he expanded his knowledge of permitting processes, various aquatic and terrestrial studies as well as environmental policy and legislation.

Michael has demonstrated the ability to manage projects, acquire permits, acquire funding, lead, and contribute to Renewable Energy Approval Technical Studies.

He also has developed an understanding of how to query, access, request, analyze and interpret geospatial data within Ontario. Has completed Data Sensitivity Training with ability to access to restricted data sets pertaining to natural features and wildlife within Ontario. Has relevant knowledge and skills in the use of Ecological Land Classification. Has knowledge of Flora and Fauna ecology/identification in Ontario's Terrestrial and Aquatic Habitats. Has Knowledge and fauna and floral ecology inclusive of use of SWH during various life stages. Has relevant knowledge and is skilled in assessing, developing and monitoring mitigation approaches related to natural features and wildlife. Finally, he also has relevant knowledge and is skilled in developing and applying monitoring protocols, inclusive of an understanding of statistical sampling design.

RELEVANT HATCH PROJECT EXPERIENCE

Rainy River Solar REA- Carbonfree - Leading and undertaking terrestrial and significant wildlife habitat studies pertaining to a renewable energy approval. Lead author of several technical documents typical of the REA process including waterbody assessment reports, natural heritage assessments, environmental impact studies, evaluations of significance and consultation documents.

Kynoch Solar REA – Carbonfree - Leading and undertaking terrestrial and significant wildlife habitat studies pertaining to a renewable energy approval. Lead author of several technical documents typical of the REA process including waterbody assessment reports, natural heritage assessments, environmental impact studies, evaluations of significance and consultation documents. He also actively participated in public consultation meetings and engagement with landowners.

Fort Frances Solar REA- Carbonfree - Leading and undertaking terrestrial and significant wildlife habitat studies pertaining to a renewable energy approval. Lead author of several technical documents typical of the REA process including waterbody assessment reports, natural heritage assessments, environmental impact studies, evaluations of significance and consultation documents.

Odessa and Tamworth Solar REAs - Leading and undertaking terrestrial and significant wildlife habitat studies pertaining to solar projects undergoing various stages of Renewable Energy Approvals. He is actively undertaking evaluations of significance and environmental impact studies for these projects.

Kingston Area Solar REA Feasibility - acted as natural heritage lead for over five properties with potential to serve as IESO bids for Solar Energy. He was responsible for coordinating multidisciplinary teams to identify regulatory constraints and potential SWH to be considered within natural heritage systems.

Prince Wind Farm – Evolgen - Natural heritage lead for site investigations and environmental assessment technical reports pertaining to the first Wind Facility Repowering in Ontario. On this project he developed a scoring method to assist in the micro-siting infrastructure around natural heritage features.



HATCH

Brighton Mountain Wind Farm, JD Irving - Contributions to the writing of Terrestrial Wildlife, Bat and Avian Technical Studies to accompany a large scope EIA for the erection of a Wind Farm in New Brunswick. Michael is also developing survey protocols and undertaking Nighttime Migrant Acoustic Analysis to help inform potential mitigation strategies.

Des Neiges Wind Farm - Leading a team of ten individuals to complete a list of species specific survey requirements (e.g., Bicknell's Thrush) in difficult terrain across several large properties in remote Quebec.

Lake Gibson Allanburg Intake No. 2 – Ontario Power Generation - Historical Data review, Regulatory Review, ELC, SAR Surveys and Groundwater Monitoring to inform a potential small scale hydroelectric facility.

Wainfleet Bog Conservation Area, Ontario, Canada. Biologist - Participated in and lead activities related to groundwater monitoring, surface water monitoring, species at risk mark-recapture studies, invasive species management, overwintering studies, permitting processes, stakeholder communications and more.



CORE TEAM MEMBER

Audrey Nerino

ENVIRONMENTAL SCIENTIST



Education & Qualifications

Honours Bachelor Environmental Studies,
Geography, Lakehead University, 2019
Certificate in Geomatics, Lakehead University,
2019

Experience

6+ years

Specialties

Environmental Assessment, Engagement and
Consultation

Audrey has over six years of experience working with Indigenous partners and stakeholders across multiple projects related to infrastructure, energy, and social development. Her role as an environmental scientist with Hatch has allowed her to gain knowledge of various environmental legislation and regulations through assisting in conducting baseline studies for terrestrial and aquatic ecosystems, including pileated woodpecker cavity surveys, grassland and breeding bird surveys, and amphibian surveys, and assisting in the development of environmental and cultural heritage reviews to support electricity projects in Ontario. She additionally has experience assisting with environmental monitoring and compliance for wind energy projects.

Audrey has gained an understanding of how to query, access, request, analyze, and interpret geospatial data within Ontario. She has completed Data Sensitivity Training to access restricted data sets pertaining to natural features and wildlife within Ontario. She additionally has relevant knowledge and skills in the use of Ecological Land Classification and knowledge of Flora and Fauna ecology/identification in Ontario's Terrestrial and Aquatic Habitats.

RELEVANT PROJECT EXPERIENCE

Rainy River Solar Project Ltd. – Renewable Energy Approval (REA), CarbonFree, Rainy River, ON - Assisted in undertaking terrestrial and significant wildlife habitat studies pertaining to a renewable energy approval, including breeding bird surveys, migratory bird surveys, and anuran surveys. Assisted in authoring technical documents required by the REA process, including waterbody assessment and natural heritage assessment reports. Audrey additionally led the development of consultation report.

Fort Frances Solar Project Ltd. – Renewable Energy Approval (REA), CarbonFree, Rainy River, ON - Assisted in undertaking terrestrial and significant wildlife habitat studies pertaining to a renewable energy approval. Assisted in authoring technical documents required by the REA process including waterbody assessment and natural heritage assessment reports. Audrey additionally led the development of consultation report.

Kynoch Solar Project Ltd. – Renewable Energy Approval (REA), CarbonFree, Kynoch, ON - Assisted in authoring technical documents required by the REA process including waterbody assessment and natural heritage assessment reports. Audrey additionally led the development of consultation report.

Prince Wind Farm, Evolgen, Prince Township, ON - Assisted in undertaking site investigations such as migratory bird surveys for the first Wind Facility Repowering in Ontario. Additionally assisted in translating field data from various site investigations into outputs for reporting.

Brighton Mountain Wind Farm, J.D Irving, Unorganized, NB - Assisted in undertaking environmental compliance monitoring for construction operations and site investigations, including pileated woodpecker cavity surveys.

Highway 17 Realignment and Hewitson Creek Culvert Replacement, Ontario Ministry of Transportation, Wiggins Township, ON - Assisted in performing terrestrial and fisheries field investigations involving terrestrial plant species inventory, stream measurement and profile activities for several watercourses within the project area, and fish habitat analysis over several days.

Micro-Modular Reactor Project at Chalk River, Global First Power, Chalk River, ON - Collected and performed analysis of environmental baseline data to determine whether valued environmental components of Indigenous communities may be impacted by project activities.



HATCH

CORE TEAM MEMBER

Christopher Sehl

ENVIRONMENTAL BIOLOGIST



Education & Qualifications

Post Graduate Diploma, Environmental Management, Niagara College, Niagara on the Lake (Ontario), Canada, 2017

BSc in Environmental Sciences, Majoring in Environmental Biology University of Guelph, Guelph (Ontario), Canada, 2015

Experience

10 years

Specialties

Ontario Wetland Evaluator Certification

Natural Heritage Survey Specialists

Environmental Assessments

Environmental Compliance Monitoring

Chris has been Environmental biologist within the Hatch Environmental Services team for the past nine years. He holds a Bachelor of Science from the University of Guelph where he majored in the Environmental Sciences and a Post Graduate Diploma from Niagara College in Environmental Management and Assessment. Chris has spent his career at Hatch working on renewable energy Projects specializing in natural heritage, species and risk and impact assessments. He is experienced in assessing impacts from various types of construction activities, proposing and monitoring mitigation measures for their effectiveness in the field. Chris has worked and led numerous environmental assessment type projects, baseline field programs, construction monitoring programs and post construction monitoring programs. Chris's areas of expertise include desktop assessments, Species at Risk surveys, environmental assessments, environmental monitoring, fish spawn and community assessments, aquatic habitat assessments, permitting and approvals (Department of Fisheries and Oceans, Ministry of Environment Parks and Conservation, Conservation Authorities and the Ministry of Natural Resources and Forestry), water quality sampling, and soil sampling.

While at Hatch, Chris has gained a wealth of experience working with construction and engineering teams to improve compliance with relevant laws and regulations, permits and best management practices. Recently, Chris was a member of the Owners Engineer team for the Wataynikaneyap Power Transmission Line Project. The Wataynikaneyap Power Transmission Line Project is a 1800 km transmission line construction Project tasked with connecting 17 remote First Nation Groups to the Ontario grids surrounding Pickle Lake and Red Lake in Northwest Ontario. Chris's role involved permit coordination, environmental compliance coordination and report review and creating/managing the Project change request process.

RELEVANT PROJECT EXPERIENCE

Meteorological Tower Crown Land Projects. Invenergy. Several Locations, Ontario Canada - Chris assisted Invenergy in the coordination of on-site environmental surveys and archaeological surveys necessary to receive Land Use Permit for Meteorological Towers. This involved creating and submitting all necessary documents associated with the Approvals, Permitting and Requirements Documents (APRD), reviewing natural heritage information and assisting in site selection, liaising with indigenous communities and the Ministry of Natural Resources and Forestry.

Lake Gibson Hydro Project, Ontario Power Generation, Thorold, Ontario Canada - OPG engaged Hatch to complete necessary environmental assessments and permitting activities associated with their proposed 4 mw Hydroelectric Project in Thorold Ontario. Chris is acting as the deputy Project Manager for the Project and is responsible for the creation of necessary Indigenous, Community and Agency Engagement Plans to be implemented over the lifespan of the Project. The Project is subject to the federal Impact Assessment Act as it will utilize federal, transport Canada owned lands (St Lawrence Seaway Management Corporation).

Marmora Glen Energy Hub Project, Northland Power Inc., and Ontario Power Generation, Ontario, Canada - Chris completed the preliminary aquatic environment habitat characterization for the Project and has participated in the terrestrial, aquatic, Species at Risk and water quality investigations to date on the site. Chris has been an active participant in the generation of the Initial Project Description in support of the Impact Assessment Act process for the Project. The Project seeks to repurpose an



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abandoned mine into a 400 MW closed-loop pumped storage hydroelectric facility, complemented by 30 MW of ground-mounted solar.

Thorold Peaker Project, Northland Power Inc., Thorold, Ontario Canada - Northland Power engaged Hatch to support them in their bid on IESO's Long Term Request for Proposals process for energy capacity projects in Ontario. The proposed Project included a new 200 MW natural gas peaker plant and associated transmission infrastructure. The project included a concept for integration renewable natural gas into the system to reduce the carbon footprint and public perception of the Project. Chris assisted the client in delineating what Federal and Provincial permits and approvals would be required through a regulatory roadmap document. Chris's team also created Northland Powers Community and Indigenous Engagement Plan for the Project as well as contributing to and participating in Northland Power's in person and virtual community public information centres as required within IESO RFP process. As an outcome of the regulatory roadmap process Northland Power decided to progress the required Impact Assessment Act process through the submission of an Initial Project Description document to the Impact Assessment Agency of Canada. The initial Project Description Report was generated by Hatch on a strict timeline to receive feedback from the IAAC prior to Northland Power committing to their bid to IESO. Comments on the Draft Initial project Description document from IAAC were minimal and focused on engagement gaps previously identified by Hatch through their Indigenous Engagement Plan. Hatch was able to finalize the Initial Project Description Report for Northland Power within the ambitious timelines required to support Northland Power's internal gating process.

Wataynikaneyap Power LP, Wataynikaneyap Power Transmission Project, Thunder Bay, Ontario, Canada - Wataynikaneyap Power Transmission Project is a transmission line Project connecting 17 remote First Nation communities in northwestern Ontario. As a part of the Hatch Owners Engineer team for the Project, Chris acts as the Environmental and Permitting lead. This included reviewing and evaluating proposals from prequalified EPCM contract bidders as well as creating and reviewing several construction environmental management plans in line with the Projects approved Environmental Assessments. Chris also participated in creating and presenting the Projects environmental orientation to the EPCM contractor during the Project kick-off event. He plays an ongoing critical role providing oversight into Project permitting activities and monitoring the contractor's environmental compliance with regulatory requirements and the EPCM contract. Chris leads the Project change management team for the Owner and coordinates requests to change the project layout with a team of community engagement specialists and design engineers to ensure proposed new alignments meet existing permits/approvals or permits are amended as appropriate.

Algoma Power Incorporated, Number 4 Expansion and Reroute Project, Deaibrillville, Ontario, Canada - Chris completing a records review for Algoma Power to identify potential gaps in information needed for Project permits. Following this activity Chris acted as a site biologist completing surveys confirm the environmental conditions of the proposed site. Chris also participated in First Nation engagement activities for the five First Nation groups with traditional territory overlapping the proposed Project including working with Michipicoten First Nation during field surveys. Chris also participated in agency consultation and generated permits for the Project. During Project execution, Chris will complete contractor compliance field visits to evaluate whether the chosen contractor is meeting the client's environmental performance standards, permit requirements and general best management practices.

City of Kingston, Kingston Third Crossing, Kingston, Ontario, Canada - Kingston Third Crossing was a successful bridge Project that spanned the Rideau Canal – a Parks Canada National Historic Site. Chris completed a suite of environmental and aquatic surveys in support of the Kingston Third Crossing Project. Chris authored several sections of the Detailed Impact Assessment document created in support of the Canadian Environmental Assessment Act process. Throughout construction, Chris completed regular site inspections in support of Fisheries Act and Parks Canada compliance efforts.

OPG, Waba Dam Rehabilitation Project, Arnprior, Ontario, Canada - Chris assisted in numerous on-site environmental baseline and monitoring surveys. Chris provided support in several permitting facets including Information Gathering Forms for Species at Risk and supporting the Project Description Document. Chris performed on site compliance monitoring of OPG's chosen Contractor, assisted with fish salvage operations and completed sediment and erosion control and site isolation monitoring activities.

German Solar Company. German Solar Projects, several locations Southwestern Ontario, Canada - German Solar Company contracted Hatch to support REA services to assist in obtaining the necessary permits and approvals for 23 solar projects on individual land parcels in southwest Ontario. Chris assisted in creating the Natural Heritage Assessments for the Project, including completing desktop assessments, evaluating present features for Candidate significant wildlife habitats, performing environmental impact studies and recommending setbacks and mitigation measures in line with the Natural Heritage Assessment Guide. Chris carried through this work into the required technical documents (Construction Plan Report, Decommissioning Plan Report). Chris also assisted in compiling required consultation summaries based on public meetings and ministry correspondences, in support of the submission of the REA documents.



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Metrolinx, Metrolinx Rail Expansion, Various locations, Ontario, Canada - Chris has assisted in various terrestrial habitat assessments, SAR surveys and tree/vegetation inventories in support of the Metrolinx Rail expansion Projects. Other terrestrial surveys included the assessment of potential Bat habitat by conducting a Bat Snag Density Survey and Blanding's turtle Visual Encounter Survey in accordance with the Ministry of Natural Resources and Forestry protocols. Given the survey results, suggestions were made to the design engineering team to minimize impact to present species.

Public Works and Government Services Canada, Timiskaming Ontario Dam Replacement, Timiskaming, Ontario, Canada - Chris served as the field crew leader through three years of post-construction monitoring for spawning Walleye, White Sucker, Lake Sturgeon and Lake Whitefish in 2017 and 2018 as required by the clients Fisheries Act Authorization. This involved gill net and egg mat investigations to confirm the presence of the spawning species. Chris also was responsible for authoring the yearly post construction monitoring reports to be submitted to the Ontario Ministry of Natural Resources and Federal Department of Fisheries and Oceans. Chris also led a successful juvenile Sturgeon and Whitefish recruitment study during the Fall of 2019 which included an assessment of 9 km of the Ottawa River.

De Beers Group of Companies, Post Closure Monitoring Activities, Ontario, Canada - In support of a Phase 2 Environmental Site Investigation and Mine Closure Plan being prepared for the De Beers Victor Mine Site, Chris has regularly participated in the Bi-annual Groundwater Monitoring Program. This program involves the sampling of over 40 different groundwater wells and 10 different areas for surface water sampling. While on site Chris was able to support the client as well by performing post-restoration environmental monitoring focused on a nearby stream restoration Project. This work is completed according to an agency accepted (Fisheries and Oceans Canada) post-construction restoration and monitoring plan proposed to the relevant governing agencies (Fisheries and Oceans Canada).

HydroMega, Trenton Lock 1 Hydroelectric Project, Trenton, Ontario, Canada - Chris conducted several baseline targeted terrestrial habitat surveys in support of the Detailed Impacts Analysis (Section 67 of CEAA 2012). Surveys included: turtle nesting surveys, reptile and turtle visual encounter surveys, reptile hibernacula surveys, bat maternity roost surveys, breeding bird call surveys, and anuran call surveys. Chris was also assisted in the creation of the Terms of Reference for the Detailed Impact Analysis Report for this project as well as research and writing of the environmental assessment report.



CORE TEAM MEMBER

Taylor Simpanen

NATURAL HERITAGE LEAD



Education & Qualifications

Fish and Wildlife Technician, Fleming College, Diploma, 2018
Arboriculture and Urban Forestry, Fleming College, Diploma, 2019

Experience

6 years

Specialties

Ecology, Biology, Avian Ecology and Identification, Species at Risk Assessments, Reptiles, Amphibians, Environmental Assessment, EIS, Vegetation, Plants, Trees.

Taylor is a Biologist/Avian Specialist working out of the Environment and Sustainability department at Hatch. Taylor provides expertise in avian, fish, wildlife, and forestry studies, supported by a Fish and Wildlife diploma from Fleming College in Ontario. As part of Hatch's Natural Heritage team, he has conducted Species at Risk (SAR) screenings for renewable energy including over 8 solar facilities, 2 major wind facilities, as well as infrastructure, and rail projects, drawing on more than five years of field experience across Ontario, Alberta, New Brunswick, Nova Scotia, and Quebec. His technical background includes pre and post construction monitoring, including targeted SAR surveys, aquatic and terrestrial assessments, surface water sampling, breeding bird surveys, migration monitoring surveys, bat habitat assessments and acoustic analysis, and baseline natural heritage and water body assessments to support permitting and environmental planning. He has led various field programs, completed habitat suitability assessments, created wildlife mitigation and avoidance guidance, and authored Environmental Impact Assessments (EIA), Renewable Energy Act (REA) reports, and existing environment reports. Taylor also has developed and implemented biological field protocols across numerous projects and holds certifications in Ecological Land Classification, Maritime Wetland Delineation, OBBN, Backpack Electrofishing (Class 2 Crew Lead), and Butternut Health Assessments.

Taylor has demonstrated the ability to manage projects, acquire permits, acquire funding, lead, and contribute to Renewable Energy Approval Technical Studies.

He also has developed an understanding of how to query, access, request, analyze and interpret geospatial data within Ontario. Has completed Data Sensitivity Training with NHIC, granting him the ability to access to restricted data sets pertaining to natural features and wildlife within Ontario. Has relevant knowledge and skills in the use of Ecological Land Classification. Has knowledge of Flora and Fauna ecology/identification in Ontario's Terrestrial and Aquatic Habitats. Taylor also has knowledge of fauna and floral ecology inclusive of use of SWH during various life stages. Has relevant knowledge and is skilled in assessing, developing and monitoring mitigation approaches related to natural features and wildlife. Finally, he also has relevant knowledge and is skilled in developing and applying monitoring protocols, inclusive of an understanding of statistical sampling design.

RELEVANT PROJECT EXPERIENCE

Rainy River Solar REA- Carbonfree. Leading and undertaking terrestrial and significant wildlife habitat studies pertaining to a renewable energy approval. Lead author of several technical documents typical of the REA process including waterbody assessment reports, natural heritage assessments, environmental impact studies, evaluations of significance and consultation documents.

Kynoch Solar REA - Carbonfree. Leading and undertaking terrestrial and significant wildlife habitat studies pertaining to a renewable energy approval. Lead author of several technical documents typical of the REA process including waterbody assessment reports, natural heritage assessments, environmental impact studies, evaluations of significance and consultation documents. He also actively participated in public consultation meetings and engagement with landowners

Fort Frances Solar REA- Carbonfree. Leading and undertaking terrestrial and significant wildlife habitat studies pertaining to a renewable energy approval. Lead author of several technical documents typical of the REA process including waterbody assessment reports, natural heritage assessments, environmental impact studies, evaluations of significance and consultation documents.



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Brandon and Tamworth Solar REAs. Leading and undertaking terrestrial and significant wildlife habitat studies pertaining to solar projects undergoing various stages of Renewable Energy Approvals. He is actively undertaking evaluations of significance and environmental impact studies for these projects.

Prince Wind Farm – Brookfield Renewables. Natural heritage lead for site investigations and environmental assessment technical reports pertaining to the first Wind Facility Repowering in Ontario. On this project he developed a scoring method to assist in the micrositeing infrastructure around natural heritage features.

Brighton Mountain Wind Farm, JD Irving. Contributions to the writing of Terrestrial Wildlife, Bat and Avian Technical Studies to accompany a large scope EIA for the erection of a Wind Farm in New Brunswick. Michael is also developing survey protocols and undertaking Nighttime Migrant Acoustic Analysis to help inform potential mitigation strategies.

Lake Gibson Allanburg Intake #2 – Ontario Power Generation. Historical Data review, Regulatory Review, ELC, SAR Surveys, Breeding Bird Surveys to inform a potential small scale hydroelectric facility.

Bird Studies Canada, Ontario, Canada. Biologist/Census Monitor Technician. Participated in and lead activities related to migratory bird movements, inclusive of SAR to determine population estimates, species abundance and diversity in support of Birds Canada's overall goal of tracking migratory bird movements and population trends.

