Environmental Impact Study – Trail Road Battery Energy Storage System (BESS)

Final Report

August 1, 2025

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Acronyms / Abbreviations

AMO	Atlas of Mammals of Ontario
ANSI	Area of Natural and Scientific Interest
ARU	autonomous recording unit
BESS	Battery Energy Storage System
COSEWIC	Committee on the Status of Endangered Wildlife in Canada
DBH	diameter at breast height
DFO	Fisheries Ocean Canada
ECCC	Environment and Climate Change Canada
EIS	Environmental Impact Study
ELC	Ecological Land Classification
ESA	Endangered Species Act, 2007
ESC	Erosion and Sediment Control
FWCA	Fish and Wildlife Conservation Act, 1997
GEO	Geospatial Ontario
HADD	harmful alteration, disruption, or destruction
IGF	Information Gathering Form
MBCA	Migratory Birds Convention Act, 1994
MBR 2022	Migratory Birds Regulations 2022
MECP	Ministry of the Environment, Conservation and Parks
MNR	Ministry of Natural Resources
MNRF	Ministry of Natural Resources and Forestry
MW	megawatt
NFPA	National Fire Protection Association
NHIC	Natural Heritage Information Centre
NHRM	Natural Heritage Reference Manual
NHS	Natural Heritage System
OBA	Ontario Butterfly Atlas
OBBA	Ontario Breeding Bird Atlas
OFS	Ottawa Fire Services

OP	Official Plan
ORAA	Ontario Reptile and Amphibian Atlas
PDA	Project Development Area
PPS	Provincial Policy Statement, 2024
RfR	Request for Review’
RVCA	Rideau Valley Conservation Authority
SAR	species at risk
SARA	Species at Risk Act, 2002
SCA	Species Conservation Act, 2025
SARO	Species at Risk in Ontario
SOCC	Species of Conservation Concern
SOP	Standard Operating Procedure
SWF	surface water feature
SWH	Significant Wildlife Habitat
SWHTG	Significant Wildlife Habitat Technical Guide
SWM	stormwater management

Glossary

Term	Definition
Adjacent Lands	Adjacent Lands refers to areas outside of the Project Footprint where direct impacts are not anticipated.
Project Area	Project Area refers to the area of field assessments
Project Footprint	Project Footprint includes the approximate area within the Project Area where development is proposed.
Study Area	Study Area refers to all lands, including the approximate Project Footprint and larger Project Area plus adjacent lands within a 120-meter buffer.

1 Introduction

The proposed Trail Road Battery Energy Storage System (BESS) project (the Project) is located off of William McEwan Drive, southwest Ottawa, Ontario on part of Concession 4 Lot 3. The Project is anticipated to be approximately 150 megawatt (MW), with a Project Development Area (PDA) of approximately 3.6 hectares (ha). The PDA encompasses any land, structure, and air space in, on or over which part of the Project is proposed and is described in this report as the approximate Project Footprint with surrounding areas identified as Adjacent Lands. The Study Area refers to all lands, including the approximate Project Footprint and larger Project Area plus adjacent lands within a 120-meter buffer (Figure A1, Appendix A).

This Environmental Impact Study (EIS) identifies natural heritage features and significant natural features within the Study Area, as well as potential environmental effects and mitigation measures to lessen potential impacts of the proposed development on environmental resources. This EIS report was prepared in accordance with applicable policies and regulations described in Section 2 and the City of Ottawa (the City) *Environmental Impact Study Guidelines* (2023).

2 Planning Policies

The following sections discuss the legislation and policy documents that establish the natural heritage context for the Study Area. The policy documents discussed below were used to scope effects assessment, assess the natural heritage features and functions within the Study Area, as well as to determine natural heritage constraints.

2.1 Municipal

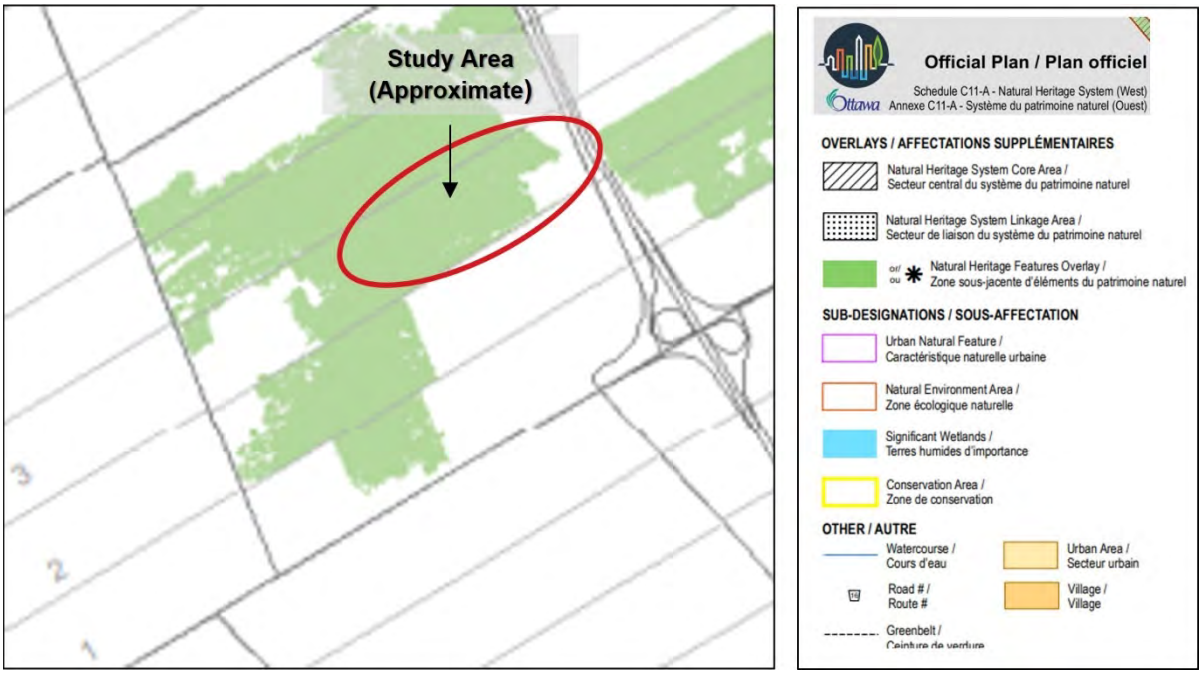
2.1.1 City of Ottawa Official Plan

The City of Ottawa *Official Plan* (OP) was adopted by Council on November 2021. Section 4.8.1 of the OP states that "*the Natural Heritage System and the features within it are subject to a higher standard of protection than features outside*" and defined natural heritage features as the following:

- Significant Wetlands
- Significant Woodlands
- Significant Valleylands
- Significant Wildlife Habitat (SWH)
- habitat for endangered and threatened species (i.e., habitat of Species at Risk [SAR])
- areas of natural and scientific interest (ANSI)
- urban natural features
- natural environment areas
- natural linkage features and corridors
- groundwater features
- surface water features, including fish habitat
- landform features

The Natural Heritage Features Overlay within the Study Area is shown on Figure 1 below, as replicated from Schedule C11-A of the City's OP. The Study Area is not within the City's Natural Heritage System (NHS) Core Area or Linkage Area.

Figure 1 NHS and Natural Heritage Feature Overlay in the Study Area (adapted from the OP)



Section 5.6.4.1 of the OP states that "*the City shall protect natural heritage features for their natural character and ecosystem services*" and that "*development or site alteration proposed in or adjacent to natural heritage features shall be supported by an environmental impact study prepared in accordance with the City's guidelines*." Further, "*development and site alteration shall have no negative impact on the Natural Heritage System and Natural Heritage Features*" and "*shall be consistent with the conclusions and recommendations of an approved environmental impact study*". As shown in Figure 1, a portion of the Study Area is within the Natural Heritage Features Overlay. The proposed development is not expected to encroach within this designated area (Figure A1, Appendix A).

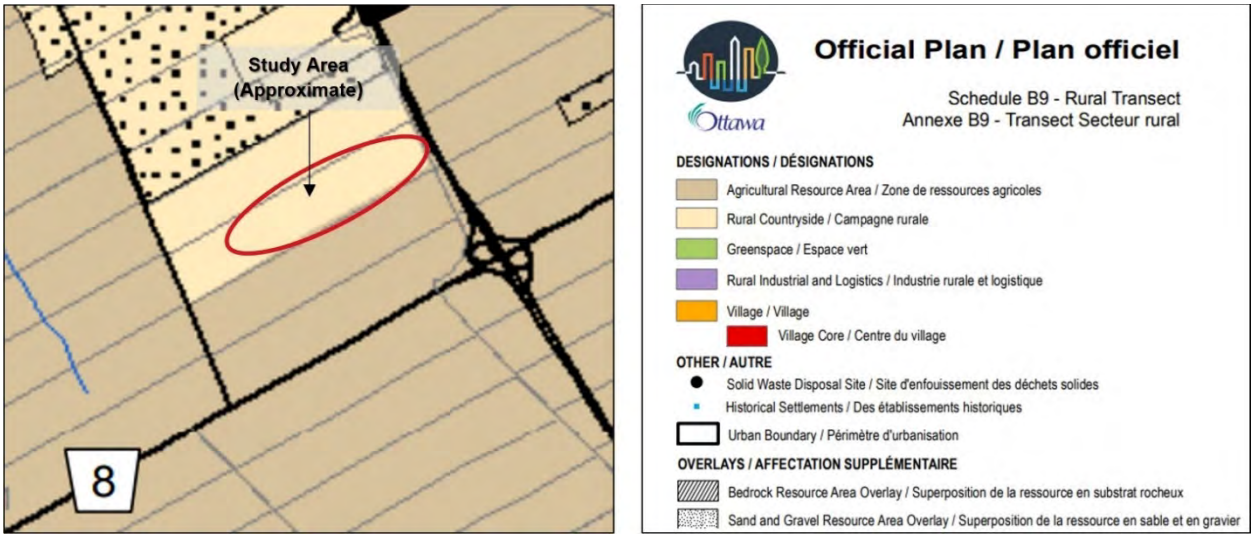
Section 13 of the OP defines surface water features as *"Water-related features on the earth's surface, including headwater drainage features, rivers, stream channels, drains, inland lakes, seepage areas, recharge/discharge areas, springs, wetlands and associated riparian lands that can be defined by their soil moisture, soil type, vegetation or topographic characteristics, including fish habitat."* Section 4.9.3 indicates that "*Where development or site alteration is proposed within or adjacent to headwater drainage features, and the proponent is requesting an exception to the minimum setback identified in Policy 2), the proposal and supporting studies must address the following to the satisfaction of the City: a) Evaluation and description of the project site, sensitivity of the headwater drainage features and sampling methods; b) Assessment and classification of hydrological function, riparian conditions, fish and fish habitat and terrestrial habitat; and c) Management recommendations regarding the need to protect, conserve, mitigate, maintain recharge or maintain/replicate terrestrial linkages of the headwater drainage features and a corresponding recommendation for an appropriate minimum setback.*

Section 49.3 of the OP addresses development limits and restrictions in and near surface water features.

Policy 4.9.3 6 f) ii states that management and minimum setback recommendations for non-significant wetlands greater than 0.5 ha in size shall be determined through an approved Environmental Impact Study, in consultation with the conservation authority and consistent with Policy 5) in Subsection 4.8.1, which state the City shall take a no net loss approach with respect to evaluated wetlands deemed not provincially significant and forest cover outside the urban area and designated villages.

Section 7 of the OP includes policies for the Greenspace designations, which are shown on Schedule B9 with sub-designations also shown on Schedule C11-A. Section 7.3 of the OP states that "*development and site alteration within 120 m of the boundary of a Significant Wetland must demonstrate no negative impacts on the natural features or their ecosystem services within the area*" and that "*development and site alteration within 120 m of the boundary of a Natural Environment Area must demonstrate no negative impacts on the natural features or their ecosystem services within the area*". As shown in Figure 2, the Study Area is within the Rural Countryside designation and does not include lands designated as Greenspace.

Figure 2 Land use designations in the Study Area (adapted from the OP)



2.1.2 City of Ottawa Tree By-Law

The City's Tree Protection By-law (No. 2020-340) came into effect on January 1, 2021. The following trees are protected from injury or removal, except where a tree permit is obtained from the City:

- All City-owned trees throughout the urban and rural area
- All trees 10 centimetre (cm) or more in diameter at breast height (DBH) on private properties within the urban area that are subject to a Planning Act application for Site Plan, Plan of Subdivision, or Plan of Condominium

- All trees 10 cm or more in diameter at breast height on private properties within the urban area that are over 1 hectare (ha) in size
- All distinctive trees, which are trees 30 cm or more in diameter at breast height on private properties within the urban area that are 1 ha or less in size

As the Study Area is located on private land within the rural area, a permit for injury or removal is not required.

2.2 Provincial

2.2.1 Provincial Policy Statement

The *Provincial Policy Statement, 2024* (PPS) was issued under section 3 of the *Planning Act, 1990*; and came into effect October 20, 2024. The PPS provides the framework for provincial planning documents and regulating land use and development planning policies for specific geographic areas within Ontario.

The natural heritage provisions are outlined in section 4.1 of the PPS with a focus on maintaining the diversity, ecological functions, and linkages of natural heritage features and areas, natural heritage systems, surface water and groundwater features over the long term. These provisions restrict development and site alteration in or adjacent to significant natural heritage features and areas (e.g., wetlands, woodlands, valleylands, wildlife habitat and areas of natural and scientific interest) unless it can be demonstrated that there will be no negative impacts on the features and their ecological functions. Additionally, these provisions apply to fish habitat and habitat of endangered and threatened species, except in accordance with provincial and federal requirements. The natural heritage policies are not intended to limit the ability of agricultural uses to continue.

2.2.2 Endangered Species Act

The *Endangered Species Act, 2007* (ESA) applies to species that are designated as extirpated, endangered or threatened and listed on the Species at Risk in Ontario (SARO) List (O.Reg. 230/08). Species and general habitat protection apply to all species, except those designated as special concern, which are not afforded protection under the ESA. Species specific habitat protection is also given to those species with regulated habitat, as identified in O.Reg. 832/21. The ESA also includes specific exemptions from the provisions of the ESA under certain conditions under O.Reg. 242/08 and O. Reg. 830/21. Exemptions and conditions vary by species, type of activity, the date the species was listed and the date the activity commenced.

2.2.3 Species Conservation Act

The *Protect Ontario by Unleashing our Economy Act, 2025* (Bill 5) received Royal Assent on June 5, 2025, and as a result, the Endangered Species Act, 2007 (ESA) was amended and will be in effect until such time as the Species Conservation Act (SCA) is proclaimed. Recent amendments to the ESA include:

- Revised habitat definition replaced the previous definition in the ESA, focused on core elements of habitat such as breeding, rearing, staging, wintering, and hibernation areas.
- “Harass” was removed from the prohibitions.
- The government has discretion to add species to, or remove from, the Species at Risk in Ontario (SARO) List.
- The Species at Risk Conservation Fund will no longer accept funds and there will no longer be an option to pay a charge in lieu of overall benefit.
- Registration for activities authorized under current conditional exemptions will continue using the current registry system.
- Permits, agreements and associated conditions, entered into before the legislation was amended, will continue to apply continuing to use the previous definition of “habitat”.
- Updated compliance and enforcement model to focus on collaborative resolution rather than legal action.

The SCA is anticipated to be enacted in the coming months and is proposed to use a “registration-first approach” with most activities covered by registration. Permit would still be required in some circumstances. Regulations under the SCA, which will provide details of the registration options, are currently under development.

2.2.4 Fish and Wildlife Conservation Act

The Ontario *Fish and Wildlife Conservation Act, 1997* (FWCA) provides protection of wildlife in Ontario including fish, furbearing mammals, game wildlife and specially protected wildlife through regulations for hunting, trapping, and fishing practices. Game and specially protected mammals, birds, reptiles, amphibians, and invertebrates are listed on Schedules 1-11 of the FWCA. Definitions provided for hunting include capturing or harassing wildlife (Section 4.9) and would include activities that collect or handle wildlife for inventories or other scientific purposes, or to relocate wildlife out of harm’s way (e.g., during construction activities), including individuals and eggs. Sections 6 and 6.2.1.4 also provide protection for nest and eggs of specified bird species including raptors, and dens of bears and furbearing animals, and beaver damns. Under the FWCA, the Minister of Natural Resources (MNR) has the authority to authorize activities that would otherwise be prohibited such as the safe capture of wildlife and removal of nests, dens, and dams, and impose conditions on an authorization.

2.2.5 Conservation Authorities Act

The *Conservation Authorities Act, 1990*, was updated in late 2022 with the purpose to provide for the organization and delivery of programs and services that further the conservation, restoration, development, and management of natural resources in watersheds in Ontario.

The Project is within the Rideau Valley Conservation Authority (RVCA) jurisdiction, which administers *Ontario Regulation 41/24: Prohibited Activities, Exemptions and Permits* under section 28 of the

Conservation Authorities Act. The proposed development will not include works within the regulated limits and therefore, a permit is not anticipated.

2.3 Federal

2.3.1 Species at Risk Act

The federal *Species at Risk Act, 2002* (SARA) includes provisions for the protection of species that are classified as extirpated, endangered and threatened on Schedule 1 of the Act. This includes protection of the species and their residence (e.g., nest, den) and critical habitat. Critical habitat is defined as those habitats necessary for the survival or recovery of a listed species, as identified in the recovery strategy or in an action plan for the species. While SARA applies to species on federal land, such as Canadian oceans and waterways, national parks, national wildlife areas, some migratory bird sanctuaries and First Nations reserve lands, it also applies to migratory birds protected under the *Migratory Birds Convention Act*, 1994 and fish, anywhere they occur. Under section 73 of SARA, the competent minister may enter into an agreement or issue a permit authorizing an activity affecting a listed wildlife species, any part of its critical habitat, or the residences of its individuals and provided that the activity meets the following purposes:

1. The activity is scientific research relating to the conservation of the species and conducted by qualified persons.
2. The activity benefits the species or is required to enhance its chance of survival in the wild.
3. Affecting the species is incidental to the carrying out of the activity.

2.3.2 Migratory Birds Convention Act

The *Migratory Birds Convention Act*, *1994* (MBCA) affords protection and conservation to migratory bird populations, individuals, and their nests within all of Canada. Most bird species in Canada are afforded protection, except for a few families (e.g., cormorants, pelicans, grouse, quail, pheasants, ptarmigan, hawks, owls, eagles, falcons, kingfishers, and corvids). The MBCA is the enabling statute for the Migratory Birds Regulations (MBR), which were updated in May 2022 (MBR 2022). Section 6 of the MBR 2022 states that without the authorization of a permit, the disturbance, destruction, or taking of a nest, egg, nest shelter, eider duck shelter, or duck box of a migratory bird, or possession of a migratory bird, carcass, skin, nest, or egg of a migratory bird are prohibited. Under the MBR 2022, nests for 18 bird species (7 of which occur in Ontario) receive year-round protection for a prescribed length of time ranging from 24-36 months (Schedule 1), and all other nests of migratory birds are protected when they contain a live bird or viable egg (S. 5(2)(b)). If a nest of a species identified on Schedule 1 of the MBR 2022 is determined to be empty of live birds or viable eggs, then the nest can be registered under Environment and Climate Change Canada's (ECCC) Abandoned Nest Registry, at which point the prescribed period of inactivity begins.

2.3.3 Fisheries Act

The *Fisheries Act, 1985* (amended on August 28, 2019) is the main federal law governing fisheries in Canada and is administered by Fisheries and Oceans Canada (DFO). *The Fisheries Act* provides for the management and control of fisheries, the conservation and protection of fish, the protection of fish habitat and pollution prevention. Projects that may impact fish, fish habitat, aquatic SAR and aquatic invasive species may be subject to DFO review. The *Fisheries Act* prohibits causing the death of fish and the harmful alteration, disruption, or destruction (HADD) of fish habitat, unless authorized by the Minister of Fisheries, Oceans, and the Canadian Coast Guard. Conditions and circumstances for projects to be exempt from review are listed on DFO's Fish and Fish Habitat Protection Program web pages. Following guidance and criteria provided on DFO's website regarding mitigation, waterbody types and codes of practice, proponents determine whether their projects in or near water will require review by DFO. DFO review is requested through the submission of a 'Request for Review' (RfR) form. Following completion of their review, DFO can proceed in two ways: 1) issue a Letter of Advice indicating that the proposed work complies with the *Fisheries Act* or, 2) refer the project to the Regulatory Review Unit for site specific review. If the project can avoid impacts to fish and fish habitat, project approval is not required. If impacts that cause a HADD cannot be avoided, proponents must apply for a *Fisheries Act* Authorization and may be required to develop a habitat offsetting or compensation plan.

3 Study Approach

3.1 Background Review

The following information sources were reviewed for records of natural heritage features within the Study Area. The results are shown on Figure A1, Appendix A with a list of species provided in Table B1, Appendix B.

- Geospatial Ontario environmental datasets (GEO; n.d.)
- Natural Heritage Information Centre (NHIC; MNR 2025)
- City of Ottawa Official Plan (City of Ottawa 2022a)
- Rideau Valley Conservation Authority (RVCA; 2025)
- Ontario Reptile and Amphibian Atlas (ORAA; 2020
- Atlas of the Mammals of Ontario (AMO; Dobbyn 1994)
- Ontario Breeding Bird Atlas (OBBA; Cadman et al. 2007)
- Ontario Butterfly Atlas (OBA; Toronto Entomologists' 2025a)
- iNaturalist Online Observations (iNaturalist 2025)
- Fisheries and Oceans Canada Aquatic SAR Map (DFO 2025)

3.2 Field Studies

Stantec completed field investigations within the Study Area between April to October 2024, as well as in June 2025. These investigations involved documenting existing conditions and verifying data collected during the background review, including assessments of candidate significant wildlife habitat (SWH), potential for species at risk (SAR), and other natural heritage features. Although no surface water features (SWF) were identified within the City of Ottawa Official Plan Mapping, SWFs in the form of constructed drains were identified through the comprehensive background review.

A summary of targeted field studies is provided in Table 3-1, with study methods discussed in the sections below. All species documented during the field investigations are listed in Appendix B. A photographic record from the field investigations is available in Appendix C.

Table 3-1 Summary of Field Investigations within the Study Area

Survey Type	Date and Time	Weather Conditions	Staff
Ecological Land Classification (ELC)	August 8, 2024 Start Time: 8:00 AM End Time: 4:00 PM	• Temp: 23°C to 26°C • Cloud Cover: Mostly cloudy with periods of sun • Precipitation: None • Wind: 19 km/h E	Brennan Obermayer Bronwen Hennigar

Survey Type	Date and Time	Weather Conditions	Staff
	October 9, 2024 Start Time: 8:00 AM End Time: 4:00 PM	• Temp: 10°C to 12°C • Cloud Cover: Overcast and cool • Precipitation: Drizzle in afternoon (less than 1 ml) • Wind: 12km/h SW	Bronwen Hennigar
Black Ash Survey	October 8, 2024 (and during ELC)	• Temp: 23°C to 26°C • Cloud Cover: Mostly cloudy with periods of sun • Precipitation: None • Wind: 19 km/h E	Brennan Obermayer Bronwen Hennigar
Aquatic Habitat Assessment	October 8, 2024 (conducted concurrently with the ELC Survey)	• Temp: 23C to 26C • Cloud Cover: Mostly cloudy with periods of sun • Precipitation: None • Wind: 19 km/h E	Brennan Obermayer Bronwen Hennigar
	June 12, 2025 (conducted concurrently with the SAR Tree Survey)	• Temp: 26°C to 30°C • Cloud Cover: Limited cloud cover. • Precipitation: None • Wind: 18 km/h NW	Matt Nixon Bronwen Hennigar
Breeding Birds	June 11, 2024 Start Time: 5:00 AM End Time: 9:00 AM	• Temp: 10°C to 15°C • Cloud Cover: Mostly cloudy with periods of sun • Precipitation: None • Wind: 10 km/h NW	Brennan Obermayer Alexis Richardson
	June 26, 2024 Start Time: 5:00 AM End Time: 9:00 AM	• Temp: 19°C to 24°C • Cloud Cover: Mostly cloudy with periods of sun • Precipitation: None • Wind: 15 km/h NW	Brennan Obermayer Alexis Richardson
Bat Acoustic Survey (Autonomous Recording Unit [ARU])	June 1 to July 19, 2024	See Table B2, Appendix B, for complete weather details for these survey dates.	Brennan Obermayer Erica Padvaiskas
Amphibian Call Survey (ARU)	April 26, 2024 to July 18, 2024	See Table B2, Appendix B, for complete weather details for these survey dates.	Brennan Obermayer Erica Padvaiskas

3.2.1 Aquatic Resources

Thomas Baxter (Stoneburner Extension) Municipal Drain that was identified during the background data review within the Project Area was ground-truthed during field work that was completed on October 8, 2024.

The additional unnamed SWF that was identified within the Study Area on the adjacent lands was also investigated from the property boundary. The field investigation included a high-level aquatic habitat assessment to document existing habitat conditions.

Surveys of SWFs also occurred on June 12, 2025, to refine observations from 2024 survey. The SWFs / constructed drains were reviewed as potential headwater drainage features (HDFs).

The characterization of fish habitat within the Study Area was based on the presence/absence of aquatic habitat features. The information was used to identify potential fish habitat constraints associated with the Study Area.

A rapid assessment of the SWFs following the document entitled *Evaluation, Classification, and Management of Headwater Drainage Features Guidelines* (CVC and TRCA 2014), hereafter referred to as *the guidelines* was completed. The guidelines typically employ a multiple survey approach to inform the evaluation, classification and management.

3.2.2 Vegetation Surveys

3.2.2.1 Ecological Land Classification

Vegetation communities were generally characterized following the first approximation of the *Ecological Land Classification System for Southern Ontario* (Lee *et al.*, 1998). The second approximation of ELC (Lee, 2008) was also used when there was no code available for a specific community type in the first approximation.

Prior to undertaking field surveys, vegetation communities were mapped through aerial photograph interpretation, with polygons delineated using ArcGIS. The field inventories included verifying and refining the boundaries mapped during the desktop exercise. Additional data was collected related to disturbances and wildlife species presence within each of the polygons that could be field verified. The vegetation communities were also assessed to determine if candidate SWH was present (this includes rare vegetation community types). Field investigations for ELC were completed on August 8 and October 9, 2024.

3.2.2.2 Black Ash and Butternut Surveys

A search for Black Ash (*Fraxinus nigra*) was completed in August and October 2024, concurrently with the ELC surveys. Another search for Black Ash and Butternut (*Juglans cinerea*) was completed in June 2025 within the Project Footprint. Locations were mapped and polygons of areas with more than one Black Ash were made in applicable habitat. Two biologists searched across the Study Area where the BESS is proposed. Search methods consisted of targeted searches using meandering transects across various habitats for 8-12 hours.

3.2.3 Wildlife Surveys

3.2.3.1 Amphibian Call Surveys

Amphibian call surveys were recorded using ARUs, following the timing and weather conditions outlined in the Ontario Marsh Monitoring Program Participant's Handbook for Surveying Amphibians (BSC and ECCC 2009). ARUs were deployed to record calls for at least ten survey nights with suitable weather during the peak breeding period in the early spring (late April), late spring (late May), and early summer (late June).

Three (3) amphibian ARUs were placed at the Study Area where the BESS is proposed across representative habitats. Later, a qualified biologist (one who has completed amphibian call analysis before) analyzed recorded calls to identify species.

3.2.3.2 Breeding Bird Surveys

Point counts were conducted in representative samples of habitats during the early morning (sunrise to 9:00AM) for ten-minutes in peak breeding season and suitable weather conditions (i.e., no rain or fog, temperatures greater than 0ºC and wind less than 20 km/h). This Modified Standard Operating Procedure (SOP) was based on Bird Census Techniques, second edition (Bibby et al. 2000) and Instructions for Point Counts (OBBA 2021).

One biologist conducted point counts at five locations at the site where the BESS will be located. Each point count station was visited twice during the breeding bird season. A search for Pileated Woodpecker (*Dryocopus pileatus*) nests was also completed.

3.2.3.3 Bat Acoustic Surveys

Wildlife Acoustics' SM4BAT FS ultrasonic ARUs were deployed near candidate roost trees during the maternity roost season. Bat acoustic surveys followed the Survey Protocol for Species at Risk Bats within Treed Habitat- Little Brown Myotis, Northern Myotis, and Tri-colored Bats (MNR 2017) and recorded bat calls for at least ten survey nights with suitable weather conditions.

Nine (9) Wildlife Acoustic SM4BAT FS ARUs were deployed from June to July near candidate maternity bat roost trees across the Study Area where the BESS is proposed. Qualified biologists (who have training in bat call detection and analysis) later analyzed potential bat calls captured on the ARUs using Wildlife Acoustics Kaleidoscope Pro Analysis Software.

3.2.3.4 Incidental Wildlife Observations and Habitat Features

Incidental wildlife observations and wildlife habitat features were documented during the field investigations and include any species observations outside of targeted surveys. This information was collected for inclusion in the SWH assessment. Wildlife habitat features that were documented included, but were not limited to, rock piles, stick nests or other nests of wildlife, burrows, evidence of wildlife such as scat, tracks, and predated nests, among others.

3.3 Significant Wildlife Habitat Assessment

A preliminary screening for confirmed and candidate SWH was completed for the Study Area following the *SWH Criteria Schedules for Ecoregion 6E* (MNRF 2015). The screening was completed based on vegetation communities identified during the site investigation, with results provided in Section 4.6.3

The MNR provides specific guidance on identifying and assessing wildlife habitat in the Significant Wildlife Habitat (SWH) Criteria Schedules for Ecoregion 6E (MNRF 2015). Other guidance documents used as part of the SWH assessment included the Significant Wildlife Habitat Technical Guide (SWHTG; MNR 2000) and Natural Heritage Reference Manual (NHRM; MNR 2010). The MNR recognizes five (5) main categories of wildlife habitat, each with several wildlife habitat types. The general definitions of these habitat types are provided below:

- **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 (SOCC)** – defined as “habitats of species that are designated at the national level as endangered or threatened by COSEWIC, which are not protected in regulation under Ontario’s ESA, 2007; habitats of species listed as special concern under the ESA, 2007 on the SARO List (formerly referred to as “vulnerable” in the SWHTG); and habitats of species that are rare or substantially declining, or have a high percentage of their global population in Ontario” (MNR 2010). More specifically, SOCC include:
  - **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 assessed by COSEWIC as extirpated, endangered (e.g., Monarch), threatened, or special concern but not listed in SARA; species not protected under SARA including those designated as special concern on Schedule 1 or any of the listed species in Schedule 2 and Schedule 3; species on non-federal land listed on Schedule 1 of SARA, other than migratory birds and fish
  - **provincially rare species** – These species are designated and assessed under two categories: species listed as special concern on the SARO List, and species that are assigned a provincial sub-national conservation status rank of S1 to S3. There are species that can be found in both categories.
- **Animal Movement Corridors** – defined as “elongated, naturally vegetated parts of the landscape used by animals to move from one habitat to another” (MNR 2000).

3.4 Species at Risk Screening

This report considers SAR as those classified as extirpated, endangered or threatened and protected under the ESA and/or SARA, as defined below:

- Provincially protected species on the SARO List under Ontario Regulation 230/08.
- Federally listed migratory birds and fish on Schedule 1 of SARA; these species are protected anywhere they occur, including non-federal lands. All other federally listed species are generally (except through an Order) only protected under SARA if they occur on federal lands.

A background review was completed to identify potential SAR previously recorded in proximity to the study area. All identified species were screened for habitat suitability, availability, and likelihood to occur within the approximate Project Footprint. The results of the screening are provided in Section 4.7.

4 Existing Conditions

4.1 Landforms, Soils and Geology

The physiographic region in the Study Area comprises the North Grower Drumlin Field. The North Grower Drumlin Field is characterized by numerous elongated, streamlined hills known as drumlins, formed beneath glacial ice during the last glaciation. These drumlins primarily consist of silty to sandy till deposits, with some containing underlying bedrock. The field's orientation reflects past ice flow directions, and its rolling topography influences local drainage patterns and land use in the region.

Surficial geology in the Study Area consists of coarse-textured glaciomarine deposits, primarily sand, gravel, minor silt and clay Foreshore and basinal deposits. A portion of the Study Area also includes fine-textured glaciomarine deposits, comprising silt and clay, minor sand and gravel. Further, the Study Area is characterized by Oxford formation characterized by brown-grey to green-grey, thin- to thick-bedded, very fine- to medium-grained dolostone. This unit, part of the Beekmantown Group, includes local thin beds of glauconitic shale, interbeds of quartz sandstone, and shaly dolostone, reflecting a complex depositional environment (City of Ottawa 2025).

4.2 Designated Areas

Designated Areas are defined by resource agencies, municipalities, the government and/or the public, through legislation, policies, or approved management plans, to have special or unique value. Such areas may have a variety of ecological, recreational, and/or aesthetic features and functions that are highly valued. Designated areas include provincial land use and environmental plan areas, national and provincial parks, designated federal wildlife/marine areas, Areas of Natural or Scientific Interest (ANSIs) and environmentally sensitive areas.

The majority of the Study Area is within the Natural Heritage Features Overlay, as shown on Schedule C11-A of the City's OP (Figure 1) and is within the City's Rural Countryside designation.The proposed development is expected to encroach within the Natural Heritage Features Overlay.

4.3 Aquatic Resources

4.3.1 Surface Water & Groundwater

The Study Area is located within the Rideau Falls-Rideau River Quaternary Watershed.

A high-level aquatic habitat assessment of Thomas Baxter (Stoneburner Ext.) Drain was conducted concurrently with the ELC survey to document existing conditions within the Project Area (Figure A3, Appendix A) in October 2024. A more detailed aquatic habitat assessment and assessment for potential HDFs was completed on June 12, 2025. Within the overall Study Area, an Unnamed SWF from the southern Property boundary was assessed, as well as the Thomas Baxter (Dynes Branch) Drain, which runs adjacent to the east side of William McEwen Drive.

Thomas Baxter (Stoneburner Extension) Drain shows on background mapping as beginning at the northern boundary of the Project Area and is routed in a west-to-east direction before taking a 90-degree turn to proceed north-to-south, thereby bisecting the property. Upon reaching the southern boundary, it takes another 90-degree turn towards the east, continuing along the edge of the property. The drain takes one additional 90-degree turn towards the south to continue off-property. Within the Study Area, background information (GEO n.d.) does not identify this feature as a watercourse (under the Ontario Hydro Network layer). This feature is identified as a constructed drain rated as a Class F drain, with respect to the DFO drain classification system (GEO n.d.). Class F drains have an intermittent flow regime and are not known to support a specific class of fish species (DFO 2014). Watercourses under the *Conservation Act* is defined as a feature with defined channel, having beds and banks or sides, in which a flow of water regularly or continuously occurs.

Within the Project Area the drainage depression appears to have been constructed alongside access laneways, as well as to assist in directing water levels within the swamp. It appears that the drain was constructed alongside the edge of the southern property boundary to direct water away from the adjacent field and the Unnamed SWF. During the October 2024 no defined feature was observed. Localized pockets if water were observed alongside the access laneway but no connection was identified. Substrates within the drainage depression was primarily fine silt, muck and detritus, which is expected within a wetland/swamp feature, and terrestrial vegetation was present.

At the time of investigations conducted in June 2025, there was no water observed where mapping has identified the Thomas Baxter Drain (Stoneburner Ext) to be within the Project Area and the substrates were dry throughout the general area, although were comprised of mostly fine material. No defined channel or feature was observed, and terrestrial vegetation was dense throughout the area. No channel / feature was observed along the southern edge of the property (where mapping shows it being present). A portion (approximately 100 m section) of the mapped drain along the southern edge of the property is located between two agricultural fields. This section has a limited riparian corridor of 15 m, but no drainage feature was identified during the June 2025 field investigation.

Based on the field investigations the Thomas Baxter Drain (Dynes Branch) appears to be an ephemeral feature with a low gradient that directs excess surface water from the swamp in a southerly direction. No culverts were observed in the drain within the Project Area.

Where Thomas Baxter Drain continues to the south of the Project Area, the channel appears to become defined with minor flow (observed in October 2024 but dry in June 2025), and some limited substrate sorting. The riparian corridor reduces to less than 10 m within this section. In-stream aquatic vegetation was not present and in-stream cover was sparse and provided through organic and woody debris.

The Unnamed SWF is located immediately adjacent to the Project Area, within an active agricultural field and is consistently affected by normal farming procedures. Within the Study Area, background information (GEO n.d.) identifies this feature as a permanent watercourse and the feature is not identified as a constructed drain. At the time of the assessment in October 2024 the SWF was not identifiable with no discernable flow path. This feature was re-investigated from the property boundary in June 2025 and was dry, with the agricultural field being planted. Through review of aerial imagery (Google Earth 2025) it appears that this SWF directs excess surface water from the Project Area overland towards the Thomas Baxter (Also Rideau E) Drain. As the section of Thomas Baxter Drain (Stoneburner Ext) alongside the southern edge of the Project Area was not identified through the field investigations, it is likely that the excess surface water from the Project Area during the spring months is directed through this Unnamed SWF Feature. The Thomas Baxter Drain at the point where the Unnamed SWF connects is identified as a constructed drain rated as a Class E drain, with respect to the DFO drain classification system. Class E drains have a permanent flow regime and support sensitive fish species (DFO 2014).

Within the Study Area, background information (GEO n.d.) does not identify Thomas Baxter (Dynes Branch) Drain as a watercourse (under the Ontario Hydro Network layer) where it runs adjacent to William McEwen Drive. This feature is identified as a constructed drain rated as a Class F drain, with respect to the DFO drain classification system (GEO n.d.). Class F drains have an intermittent flow regime and are not known to support a specific class of fish species (DFO 2014). The drainage ditch alongside William McEwen Drive within the area assessed was dense with Narrow-leaved Cattail and had a limited riparian area due to roads. Substrates were comprised primarily of muck and organic debris and there was limited flow within the drain.

No fish were observed within any of the assessed features during any field investigation.

4.3.2 Fish Habitat

No fish community data were available for the Drains and SWF within the Study Area (GEO n.d.).

As no feature or water was present during investigations in 2025 within the Project Area or greater Study Area, fish community assessments were not completed. No fish were observed within the Thomas Baxter Drain (Stoneburner Extension) where it was assessed within the Project Area. As no watercourse (as defined by the *Conservation Act*) was identified within the Project Area it is unlikely that the Drain (depression within the Project Area) could directly or indirectly support fish given the ephemeral nature and lack of gradient to connect to fish bearing features.

Overall, no fish habitat was identified at the mapped features, or anywhere else within the Study Area.

4.3.3 Headwater Drainage Features

The Thomas Baxter Drain (Stoneburner Extension) within the Project Area was not investigated in April 2025 but for the assessment it is assumed that surface water was present as water was present in the swamp in April 2024. The feature was dry in October 2024 and June 2025. Feature type includes wetland and no defined channel (overland flow only). Riparian habitat within the Project Area is wetland. No fish habitat is present, and it is unlikely that the feature would indirectly support fish (through flow and allochthonous inputs).

The Unnamed SWF located immediately adjacent to the Project Area was not investigated in April 2025 but based on the installing of ARUs (completed in April 2024) no water or defined feature was present. The feature was re-investigated in June 2025 and no feature was present (agricultural field was present). Wetland (swamp) is identified upstream of this feature (in the Project Area and is considered part of the Thomas Baxter Drain (Stoneburner Extension)). The feature as identified on mapping was not present during the field investigations as there was no defined channel (overland flow only). Riparian conditions is agricultural / cropped land. No fish or terrestrial habitat present.

4.4 Vegetation Cover

The Study Area is within the rural landscape and includes a mix of agriculture and naturalized areas, primarily wetland communities with areas of upland forests. The proposed development is primarily located within areas characterized as swamp, Red Maple Mineral Deciduous Swamp Type (SWDM3-1) and may encroach a portion of agricultural land used for row crop production (OAGM1). A summary of vegetation communities documented within the Study Area is provided in Table 4-1 and shown on Figure A2, Appendix A.

Table 4-1 Vegetation Communities within the Study Area

ELC Code	Community Description	Project Development	Adjacent Lands
Constructed			
CVI_1 (Transportation)	William McEwen Drive and Highway 416.	No	Yes
CVI_4 (Power Generation)	Hydro corridor across Study Area, marked by large gaps in the tree cover and a understorey of small trees, shrubs, and herbs underneath the power lines. White Spruce, Eastern-white Pine, and Trembling Aspen dominate the canopy along either side while young Trembling Aspen and Balsam Poplar grow along the corridor edges. Grasses (*Poaceae sp*), Purple Loosestrife, Common Yarrow, Common Milkweed, Riverbank Grape, Common and Glossy Buckthorn, and Sedges (*Carex sp*) grow within the corridor.	No	Yes
CVR_R (Rural Property)	Houses on rural residential property off William McEwen Drive.	Yes	Yes
Agriculture			
OAGM1 (Annual Row Crops)	Polygon appears to consist of planted row crops within agricultural field. Crops appear to be Soybean (*Glycine max*).	Yes	Yes
Parkland			
CGL_2 (Parkland)	Area is mowed lawn near highway 416 and along roadside/shoulders.	No	Yes
Meadow			
CUM1 (Mineral Cultural Meadow Ecosite)	A meadow that appears to be maintained or managed.	No	Yes

ELC Code	Community Description	Project Development	Adjacent Lands
Hedgerow			
THDM3-1 (Buckthorn Deciduous Hedgerow Thicket Type)	Buckthorn dominated hedgerow.	No	Yes
FOCM5 (Naturalized Coniferous Hedgerow Ecosite)	Mixture of planted large White Spruce (Picea glauca) trees and naturalized vegetation. Cattails (*Typha sp*) growing along ditch line from drainage/ runoff of roadway. Canopy species include White Spruce and Eastern-white Pine (*Pinus strobus*). Sub-canopy species include Sugar Maple (*Acer saccharum*), Trembling Aspen (*Populus tremuloides*), Paper Birch (*Betula papyrifera*). Understory species include Common (*Rhamnus cathartica*) and Glossy (*Rhamnus frangula*), Manitoba Maple (*Acer negundo).* Ground layer species include Narrow-leaved Cattail (*Typha angustifolia*), Common Hawkweed (*Hieracium lachenalii*), Grasses (*Poaceae sp*), Sedges (*Carex sp*), Common Yarrow (*Achillea millefolium*), Chicory (*Cichorium intybus*), Bladder Campion (*Silene vulgaris*), Common Milkweed (*Asclepias syriaca*).	No	Yes
FODM11 (Naturalized Deciduous Hedgerow Ecosite)	Naturalized deciduous hedgerows growing between agricultural fields within the Study Area. Tree species include Manitoba Maple, American Elm, Green Ash, and Sugar Maple. Understory species include Willow (*Salix sp*), Glossy and Common Buckthorn, Riverbank Grape, and Red Raspberry. Floor vegetation includes Grasses (*Poaceae sp*), Goldenrod (*Solidago sp*), White Sweet Clover, Red Clover (*Trifolium pratense*), Wild Parsnip.	No	Yes
Woodland			
FODM5-11 (Dry – Fresh Sugar Maple – Hardwood Deciduous Forest Type)	Species include Sugar Maple, American Beech (*Fagus grandifolia*), Northern Red Oak, White Oak (Quercus alba), Ironwood (*Ostrya virginiana*), American Basswood, Black Cherry (*Prunus serotina*), Bitternut Hickory (*Carya cordiformis*), Shagbark Hickory (*Carya ovata*), White Ash (*Fraxinus americana*), Red Maple (*Acer rubrum*). Moderately dry to fresh soil moisture regimes. Shallow soils over bedrock, sands, and loams.	No	Yes

ELC Code	Community Description	Project Development	Adjacent Lands
Wetland			
SWDM3-1 (Red Maple Mineral Deciduous)	Forest dominated by Red Maple, Freeman's Maple, and Sugar Maples. Green Ash, Red Maple, American Elm, and Silver Maple present in sub-canopy. Black Ash (*Fraxinus nigra*) growing in clusters within or near polygon. Additional species include Asters, Glossy Buckthorn, and Sedges. Soils typical of this ecosite include mineral and peaty phase mineral (organic acculturations of 20 – 40 cm). Often these areas have short durations of flooding and substrate is aerated by early to mid-summer. Wetland was evaluated (along with ELC SWDM4-5) and determined to not be provincially significant. Draft wetland evaluation has been prepared and available under separate cover.	Yes	Yes
SWDM4-5 (Poplar Mineral Deciduous Swamp)	Plants include Sensitive Fern (*Onoclea sensibilis),* Poplars (Populus sp), Grey Alder (*Alnus incana*), Red Alder Berry (Sambucus racemosa), Phragmites (*Phragmites australis*), Purple Loosestrife present. Wetland was evaluated (along with ELC SWDM3-1) and determined to not be provincially significant. Draft wetland evaluation has been prepared and available under separate cover.	Yes (access road)	Yes

4.5 Wildlife

4.5.1 Amphibian Surveys

Species recorded in the swamp communities of the proposed BESS site include Spring Peeper (*Pseudacris crucifer*), American Toad (*Anaxyrus americanus*) and Grey Treefrog (*Dryophytes versicolor*). Call count indicate full choruses (e.g., more than 20 individuals) of both Spring Peeper and Grey Treefrog. American Toads were observed in smaller numbers.

There is potential for other early calling species (e.g., Western Chorus Frog (*Pseudacris maculata* pop. 1) and Wood Frog (*Lithobates sylvaticus*) to be present that were missed due to property access constraints that did not allow for April surveys.

4.5.2 Breeding Birds

Breeding bird surveys were completed within the Study Area and included five stations (Figure A3, Appendix A) with data collected on June 11 and June 26, 2024. A total of 47 species were recorded (Appendix B) which included one SOCC and three SAR, discussed in Section 4.6.3 and Section 4.7, respectively.

4.5.3 Bat Surveys

Acoustic bat surveys were completed for the Project and included deploying nine ARUs within the Project Area (Figure A3, Appendix A). Data was collected over 18 to 19 recording nights between June 1 to July 19, 2024. A summary of findings is provided below, which identified six bat species: Big Brown Bat (*Eptesicus fuscus*), Eastern Red Bat (*Lasiurus borealis*), Hoary Bat (*Lasiurus cinereus*), Little Brown Myotis (*Myotis lucifugus*), Silver-haired Bat (*Lasionycteris noctivagans*), and Tri-colored Bat (*Perimyotis subflavus*). All of the bats are SAR except Big Brown Bat.

- Big Brown Bat: 3658 call files (dominant species recorded);
- Silver-haired Bat: 669 call files;
- Little Brown myotis: 215 call files;
- Hoary Bat: 111 call files;
- Tri-colored Bat: 107 call files; and
- Eastern Red Bat: 12 call files.

Due to the similarity of Big Brown Bat and Silver-haired Bat calls, detections that cannot be filtered down to species are labelled as ‘Silver-haired Bat/ Big Brown Bat’. There were 363 call files analyzed as Silver-haired/ Big Brown Bat.

Call files that could not be analyzed down to a myotis species were labelled as ‘myotis sp’, to which there were 7 myotis sp. call files detected. There were 138 high frequency sounds and 801 low frequency sounds that could not be further analyzed.

The number of call files detected on an ARU is not representative of the number of bats passing throughout the zone in which calls are captured on the ARU. The same bat may pass this zone numerous times.

4.6 Significant Natural Heritage Features

4.6.1 Significant Wetlands

There are unevaluated wetlands within the Study Area which are captured within the Natural Environment Overlay boundary (Figure 1) and that extend into the Project Footprint. A draft wetland evaluation was completed which determined that this wetland was not provincially significant. A map showing the wetlands within the Study Area is provided on Figure A2, Appendix A. A copy of this wetland is available under separate cover.

4.6.2 Significant Woodlands

Significant woodlands may be included in the Natural Heritage Overlay mapping on Schedule C11-A of the City's OP (Figure 1) or can be evaluated through an EIS. The Study Area is within the Natural Heritage Overlay. Background information from GEO (significant ecological area dataset) shows the overlay area as significant woodland (Figure A1, Appendix A).

4.6.3 Significant Wildlife Habitat

An assessment of confirmed and candidate SWH was completed for the Study Area following the protocols established by MNR. The SWH assessment was based on findings from the background review and site investigations, with the full screening provided in Appendix D. There were no rare vegetation communities identified in the Study Area.

- **Seasonal Concentration Areas**
  - Bat Maternity Colonies (confirmed): Acoustic bat surveys were completed and confirmed the presence of several bat species, including Big Brown Bat, within the Project Area. This habitat type will be discussed under SAR as all species, except Big Brown Bat, were recorded and have similar impacts/mitigation. Results of the acoustic surveys recorded a large number of Big Brown Bat call files (N=3658). The number of call files is not an indication of the number of individual present, as an individual bat may be recorded multiple times. However, the number of call files suggests more than 10 Big Brown Bats are likely present and potentially roosting within the Study Area, indicating presence of Bat Maternity Colony Habitat.
  - Reptile Hibernaculum (candidate): Suitable habitat has the potential to occur within the Study Area. No congregations of snakes were observed during surveys completed for the Project, although targeted surveys were not completed. As this habitat is difficult to confirm even with targeted surveys, mitigation measures during construction will be provided should this habitat be incidentally discovered.

- **Specialized Habitat for Wildlife**
  - Amphibian Breeding Habitat (Wetland) (confirmed): Results of the amphibian call surveys in May and June 2024 indicate the presence of Spring Peeper, American Toad and Grey Tree Frog, with more than 20 individuals.
  - Woodland Area-Sensitive Bird Breeding Habitat (confirmed): The swamp communities in the Study Area, including Project Aera, provides interior habitat. Breeding bird surveys confirmed the presence of three requisite species: Yellow-bellied Sapsucker, Veery and Ovenbird.
- **Habitat for SOCC**
  - Eastern Wood-Pewee (*Contopus virens*) (confirmed): This species was recorded in the approximate Project Footprint, including overall Study Area, during breeding bird surveys (Figure A3, Appendix A). Suitable habitat is present within the swamp communities in the Study Area.
  - Western Chorus Frog (*Pseudacris maculata* pop. 1) (candidate): Suitable habitat is present within the swamp communities in the Study Area (Figure A2, Appendix A). Amphibian call surveys were completed, although did not capture the early timing window (April) to detect this species.
  - Grasshopper Sparrow (*Ammodramus savannarum*) (candidate): Suitable habitat may be present on Adjacent Lands, in the cultural meadow community in the southeast portion of the Study Area (Figure A2, Appendix B). This species was not recorded during breeding bird surveys.
  - Upland Sandpiper (*Bartramia longicauda*) (candidate): Suitable habitat may be present on Adjacent Lands, in the cultural meadow community in the southeast portion of the Study Area (Figure A2, Appendix B). This species was not recorded during breeding bird surveys.
  - Monarch (*Danaus plexippus*) (candidate): Suitable habitat may be present within the Study Area. Milkweed was recorded within the Project Area, although this species was not recorded during field surveys. Habitat was not identified within the approximate Project Footprint.
- **Animal Movement Corridors**
  - Amphibian Movement Corridors (candidate): Suitable habitat is present within the Study Area based on presence of confirmed amphibian breeding habitat (wetlands). The swamp communities in the Study Area and woodland communities located outside of the Study Area, likely provide movement corridors for amphibians.

4.7 Species at Risk

The results of the screening assessment are provided in Appendix E. SAR that were confirmed or have the potential to occur within the Study Area are summarized below.

- **Bats (confirmed)**: The swamp communities within the Study Area, including the approximate Project Footprint, confirmed the presence of five SAR (discussed in Section 4.5.3): Eastern Red Bat, Hoary Bat, Little Brown Myotis, Silver-haired Bat, and Tri-colored Bat (*Perimyotis subflavus*). These species were confirmed within the Project Area, including Project Footprint. Consultation with MECP is ongoing to provide compliance under provincial species at risk legislation.
- **Black Ash (*Fraxinus nigra*) (confirmed)**: This species was confirmed in the Project Area, including the approximate Project Footprint (Figure A3, Appendix A). Black Ash greater than 8 cm DBH were assessed for health using the MECP Black Ash assessment guidelines (MECP 2024). Results are located in Appendix F. Three individuals greater than 8 cm DBH were recorded within the Project Footprint, along with approximately 303 individuals mapped as polygons that were less than 8 cm DBH. In total, approximately 431 Black Ash trees less than 8 cm DBH were identified within the Project Area. The polygon north of the Project Footprint had at least 11 large (greater than 9 cm DBH) trees and 20 individuals less than 8 cm DBH and the polygon west of the Project Footprint had one mature individual estimated to be over 8 DBH and approximately 5 younger individuals less than 8 DBH. Black Ash that are 8 cm DBH or greater and healthy are protected under the ESA. Three (3) individuals located within the Project Footprint that were confirmed to be healthy and over 8 DBH may be impacted directly by Project activities. The other healthy 7 individuals within the Project Area may be indirectly impacted through Project Activities. Consultation with MECP is ongoing to provide compliance under provincial species at risk legislation.
- **Wood Thrush (*Hylocichla mustelina*) (confirmed)**: This species was recorded within the swamp community (SWDM4-5) within the Project Area during breeding bird surveys (Figure A3, Appendix A). This species is only protected under SARA and not the ESA.
- **Blanding's Turtle (*Emydoidea blandingii*) (potential)** – Records of Blanding's Turtle were recorded within the 10 km map square that overlaps the Project. Under the revised habitat definition in the ESA, MECP considers habitat for Blanding's Turtle to be the occupied or habitually occupied wetland, pond, or other aquatic habitat up to a maximum size that is no larger than the average home range size of an individual of the species (approximately 30 ha for Blanding's Turtle). The swamp community within the Project Area does not provide standing water through the winter season, and therefore not suitable for overwintering turtles. The brief period of standing water in the spring is not anticipated to remain for use by Blanding's Turtle, after leaving their overwintering areas elsewhere. As such, habitat for Blanding's Turtle is not anticipated to be present. However, as a mobile turtle species, there is potential for Blanding's Turtle to move through the Project Area, between habitat patches, during the active season. Consultation with MECP is ongoing to provide compliance under provincial species at risk legislation
- **Barn Swallow (*Hirundo rustica*) (potential)**: This species was recorded during breeding bird surveys within the Study Area. Suitable habitat is not present within the approximate Project Footprint, although may be present in the Project Area where they nest on human-made structures. This species is only protected under SARA and not the ESA.

- **Chimney Swift (*Chaetura pelagica*) (potential)**: This species was not recorded during breeding bird surveys. However, habitat may be present if the house or other structures in the Project Area have chimneys that are suitable for nesting.
- **Bobolink (*Dolichonyx oryzivorus*)/Eastern Meadowlark (*Sturnella magna*) (potential)** – Suitable habitat is present on Adjacent Lands only where the cultural meadow is present; habitat not present within the Project Area. This species was not recorded during breeding bird surveys.

4.8 Fish Habitat

Fish habitat, as defined in the federal *Fisheries Act*, are those parts of the environment on which fish depend, directly or indirectly, to carry out their life processes. Based on the results of the field investigations completed within the Project Area, the Thomas Baxter Drain (Stoneburner Extension) does not directly or indirectly support fish or fish habitat and as such the provisions with the *Fisheries Act* will not apply.

4.9 Headwater Drainage Features

Based on the guidelines (TRCA/CVC 2014), Table 4-2 outlines the management recommendations for the SWFs: Thomas Baxter Drain (Stoneburner Extension) within the Project Area and the Unnamed SWF adjacent to the Project Area.

Table 4-2 HDFA Summary

Drainage Feature	Step 1		Step 2	Step 3	Step 4	Likely Management
	Hydrology	Modifiers	Riparian	Fish Habitat	Terrestrial Habitat	
Thomas Baxter Drain (Stoneburner Extension)	Contributing Function	Drain is just a depression where anything is present. Directs excess water from swamp to the south.	Important Function	None	Valued (associated wetland) Drain (as no defined channel) would be Limited	Conservation (associated wetland feature)
Unnamed SWF	Limited Function	Tilled, Active Agriculture	Limited Function	None	None	No Management Required

4.10 Natural Heritage Feature Summary

A summary of natural heritage features within the Study Area are summarized in Table 4-3.

Table 4-3 Summary of Natural Heritage Features

Natural Heritage Feature	Project Footprint (Approximate)	Adjacent Lands
Natural Heritage System, including cores and linkages	No	No
Natural Environment Areas	No	No
Significant Wetlands	No	No
Areas of Natural and Scientific Interest (Earth or Life Science)	No	No
Habitat of SAR	Yes Bats, Black Ash and Wood Thrush confirmed; Blanding's Turtle potential	Yes Same as Project Footprint, plus potential for Barn Swallow, Chimney Swift, Bobolink and Eastern Meadowlark
Significant Woodlands	Yes (assumed)	Yes (assumed)
Significant Valleylands	No	No
Significant Wildlife Habitat	Yes	Yes
Surface and Groundwater Features	Yes - Wetland	Yes
Fish habitat	No	No
Headwater Drainage Feature	Yes – Thomas Baxter Drain (Stoneburner Ext.)/ Swamp feature	Yes – Unnamed SWF
Landform Features	No	No
Forest Types of high or Extreme Wildlife Fire Risk	No	No

5 Project Description

The proposed Trail Road BESS is a 150 MW 4-hr Battery Energy Storage System, consisting of an entrance culvert and access road off William McEwen Dr., 156 BESS containers, a 230 kV project substation and a 34.5 kV 230 kV Transmission line (T-line) to the Hydro One interconnection point.

The site works are schedule to commence in Q1 of 2026 and achieve Commercial Operations Date (COD) in Q3 2027.

5.1 Stormwater Management

The design of the proposed stormwater management (SWM) system is provided under a separate cover in *Evolugen Trail Rd. BESS Technical Report: Stormwater Management Plan* (BBA 2025). The design is to collect and discharge runoff from the Project Footprint to a proposed stormwater wet pond south-west of the battery containers, to manage stormwater quantity and quality, as well as provide erosion control. The intent is to prevent discharge of stormwater to the existing municipal drain and adjacent properties. The wet pond will be designed such that the 100-yr post-development peak flow will match the 2-year pre-development peak flow rate. The SWM system will result in a change in the drainage pattern around the facility. The existing natural flow path running through the site will be redirected around the southern edge of the site and reconnected to its original flow path downstream.

6 Impact Assessment

6.1 Potential Environmental Impacts

6.1.1 Construction

Construction activities associated with the proposed BESS Project have the potential to have direct and indirect impacts on vegetation and wildlife habitat wildlife. The primary concerns include permanent and temporary habitat loss, habitat alteration and disruption, and incidental take of wildlife. Key construction-related impacts involve vegetation removal, soil compaction, edge effects, and the spread of invasive species, all of which can affect the structure and function of ecosystems. Additionally, increased noise, vibration, and human activity may lead to habitat avoidance and disruption of wildlife behaviors. Implementing appropriate mitigation measures will be necessary to reduce these impacts and support ecological integrity during and after construction.

6.1.1.1 Permanent and Temporary Habitat Loss

Potential impacts to vegetation and vegetation communities during construction within the Project Footprint include:

- Direct loss of vegetation (4.11 ha), primarily swamp community (4.02 ha) with some encroachment on agricultural land (0.09 ha). The swamp community is identified as a significant woodland and provided candidate and confirmed SWH and habitat for SAR (i.e., bats and Black Ash).
- Soil compaction which can affect growing conditions if replanting is proposed in those areas following construction.
- Injury to trees outside of the construction limits if the proposed works occur within the root zones.
- Edge tree effects within woodlands where tree removal occurs.
- Damage to vegetation due to fugitive dust suppression, salt spray effects, sedimentation, and accidental spills (e.g., fuel, oil, other hazardous materials).
- Changes to community structure due to the introduction and spread of invasive species (e.g., *Phragmites*).
- Exposure of soils from vegetation clearing, grubbing and grading can result in sediment runoff discharging into nearby terrestrial and aquatic communities.

6.1.1.2 Habitat Alteration, Disruption and Avoidance

The following potential impacts apply to the Project Footprint and adjacent lands (generally within 30 m) where wildlife habitat (SWH and SAR) may be directly or indirectly impacted by the proposed works. These impacts are expected to be temporary through implementation of appropriate mitigation, as discussed in this report.

- Edge effects to habitats where vegetation that was previously sheltered is now exposed (e.g., trees in woodland that are part of the new edge may be susceptible to windthrow).
- Fugitive dust and salt spray which can affect the health of plant species. This could extend outside of the Project Footprint.
- Construction activities, such as grading can alter community structure, affect species composition and habitat quality due to changes in moisture regime, flow volume, rates, and water quality if natural drainage pathways are not maintained.
- Construction noise, vibration and increased human presence can result in disruption and avoidance of habitat. Construction noise may result in habitat avoidance or disturbance to individuals where interference with vocalizations could disrupt breeding and other natural processes.
- Temporary loss of or access to existing wildlife corridors/movement pathways during construction works.

6.1.1.3 Injury and Incidental Take

- Collisions with vehicles, machinery, or physical barriers may occur if wildlife are able to access the construction limits (e.g., improper design or installation of exclusionary measures). Bats may also be susceptible to injury and/or incidental take, particularly if habitat is removed while being occupied.
- Light pollution, including temporary and permanent lighting may cause disorientation or attract birds and bats to the area due to increased foraging potential which may result in injury or incidental take of individuals through collisions with vehicles or physical barriers.
- Migratory birds' nests and eggs are susceptible to incidental take during construction activities, especially during vegetation removal.
- Increased noise or the proximity of workers could cause nesting birds to temporarily vacate or completely abandon a nest in progress.
- Snake hibernaculum has the potential to be incidentally discovered during construction, particularly in areas where there are rock piles, bedrock outcrops, housing foundations, wetlands and woodlands.

6.1.1.4 Potential Impacts from Stormwater Management on Headwater Drainage Features

Indirect impacts to the SWFs may also occur through potential changes in the overall surface flow and water quality. The proposed stormwater management (SWM) system is provided under a separate cover in *Evolugen Trail Rd. BESS Technical Report: Stormwater Management Plan* (BBA 2025).

The SWM design criteria was based on the guidelines outlined in the MECP, formerly the Ministry of Environment (MOE) "Stormwater Management Planning and Design Manual" (MOE, 2003).

The SWM system will result in a change in the drainage pattern around the facility. The existing natural flow path running through the site will be redirected around the southern edge of the site and reconnected to its original flow path downstream.

The boreholes show that the groundwater table varies throughout the site and no groundwater was observed on the surface of the site, so any wetland features are likely seasonal (BBA 2025). The presence of surface water will depend on the surface water runoff during peak precipitation events and appear due to the shallow groundwater table. Groundwater levels at the site are expected to fluctuate seasonally. Higher groundwater levels are anticipated during wet periods, such as spring or after prolonged precipitation events (BBA 2025).

6.1.2 Operation

Operation of the BESS may include potential environmental risks, particularly fires due to storage of lithium-ion batteries. These batteries can overheat, short circuit, and trigger a dangerous reaction known as "thermal runaway." This chain reaction may lead to fires that are difficult to extinguish and can cause extensive damage to both infrastructure and the surrounding environment.

Additionally, accidental spills or leaks could result in off-site contamination to surface water, groundwater and other natural heritage features should a fire occur. While the likelihood of these risks occurring is low with appropriate mitigation measures, ongoing monitoring and compliance with safety protocols will be necessary for the long-term environmental protection.

6.2 Mitigation and Protective Measures

6.2.1 Construction

Construction activities have the potential to impact natural features and wildlife habitats within the Project Area. To mitigate these effects, protective measures will be implemented, including adherence to best management practices, compliance with relevant environmental legislation, and the implementation of strategies for vegetation protection, wildlife management, erosion and sediment control, and waste handling. These measures aim to reduce direct and indirect effects to the natural environment, wildlife and fish habitat such as habitat loss, alteration, disruption and disturbance and maintain ecological functions during and after construction. The contractor shall follow the best management practices outlined in the sections below, including the City’s Protocol for Wildlife Protection during Construction (City of Ottawa 2022b).

6.2.1.1 Vegetation and Vegetation Communities

The following mitigation measures and opportunities are provided to reduce potential impacts to vegetation and vegetation communities during construction, particularly related to the access road which will encroach within a woodland community:

- Demarcate the Project Footprint where vegetation removal and other Project works are required and that are adjacent to natural features. These limits shall be clearly delineated in plans/drawings and in the field to avoid off-site disturbance.
- Vegetation removals shall be reduced to the extent feasible and limited to the construction footprint. Review opportunities to reduce grading limits for all areas of vegetation removal.
- Vegetation removals shall adhere to the applicable timing windows to occur outside of active periods, where feasible. Generally, time vegetation removal to occur between November 1 to April 14 which will accommodate most species, unless otherwise specified for specific species, locations or as dictated through permits or approvals. General wildlife active periods include:
  - Bats: April 1 to September 30
  - Birds: April 15 to August 31
  - Reptiles and Amphibians: April 1 to October 31
- Implement appropriate erosion and sediment control measures prior to vegetation removals (Section 6.2.1.4).
- Maintain surface water drainage patterns through the wetland habitats and downstream during seasonal periods where groundwater levels are high.
- Install tree protection fencing along the dripline to protect the root zone of trees adjacent to the work zone and Project Footprint.
- Utilize appropriate vegetation clearing techniques and reduce clearing, grubbing and grading to only includes areas necessary to complete the works.
- Install surface protection measures to reduce soil compaction, particularly in areas where post-construction plantings are proposed.
- Implement dust control measures for the suppression of fugitive dust (Section 6.2.1.4).
- In the case of unexpected vegetation removal or accidental damage to trees, vegetation shall be replaced and/or restored.
- Trees/shrubs that are felled within areas where active construction is being undertaken should be mulched or relocated to natural areas as soon as possible, especially during the breeding bird season to prevent birds from nesting and snakes from seeking refuge.
- Temporarily disturbed areas shall be restored and vegetated to pre-construction conditions or better. Vegetation plantings shall include seed mixes that are appropriate for the area, and include a mix of native species, that are appropriate to the site and conditions.

6.2.1.2 Wildlife and Wildlife Habitat

6.2.1.2.1 Migratory Birds

- Time vegetation removals to occur outside of the active period, which generally extends from April 15 to August 31.
- Vegetation removal within ‘complex habitats’ (e.g., woodlands, thickets, tall grasslands, wetlands, and areas where risk of disturbance to breeding birds and active nests are high) should be scheduled outside of the active breeding bird season. However, if works are needed in ‘complex habitat’ and unless otherwise specified (i.e., through a permit or contract document), a Qualified Biologist shall complete a nest sweep.
- If vegetation removal within ‘simple habitats’ (e.g., developed areas, manicured grass) or other activities that could impact birds is required during the active breeding period, prior to undertaking the proposed works a search for nests shall be completed by staff trained in conducting nest sweeps.
- Nest searches shall be completed within 24-48 hours or immediately prior to the proposed works.
- If an active nest is found within the work area at any time (including times outside of the typical nesting season), construction in the vicinity must cease until the young birds have fledged or the nest is otherwise abandoned.
- A setback from the nest (e.g., 30 m) shall be identified by a Qualified Biologist and the area demarcated so that work does not occur within the setback limits. A Qualified Biologist shall be consulted to determine the appropriate setback limits.

6.2.1.2.2 Wildlife Exclusion

- Install temporary exclusionary measures, as required within the construction limits, prior to vegetation removal or other construction works that may impact wildlife. Measures shall follow guidelines for *Reptile and Amphibian Exclusion Fencing* (MNR 2013).
- Exclusionary measures shall not prohibit access to nearby habitats and shall redirect species to areas where they can avoid the potential for injury and incidental take and still have access to habitats.

6.2.1.2.3 Wildlife Encounters, Safe Handling and Relocation

Reducing risk of wildlife encounters as well as implementing appropriate protocols during unavoidable wildlife encounters is critical to mitigate direct impacts (i.e., injury and incidental take) to wildlife. These measures include:

- If wildlife is encountered during construction, whenever possible, work shall be temporarily suspended until the species is out of harm’s way. If relocation is necessary, the species shall be handled and transported following the *Ontario Species at Risk Handling Manual: For Endangered Species Act Authorization* Holders (MNR n.d.).

- Wildlife shall not be harmed or harassed.
- Inspect equipment and brush piles for wildlife prior to movement of equipment.
- If bird nests are documented within the construction limits, the mitigation measures identified for migratory birds shall be implemented.
- Wildlife shall be relocated within 50 m of the capture location toward the direction they were heading and outside of the construction zone, where possible, or as otherwise specified by permits.
- Injured wildlife (including endangered and threatened species) shall be transported to an authorized wildlife rehabilitator by trained staff or Qualified Biologist. Euthanasia of injured wildlife is not permitted unless conducted by an authorized wildlife rehabilitator.
- Staff will be trained on how to identify if a snake hibernaculum is incidentally discovered. If present, all work must cease and a Qualified Biologist shall be contacted to discuss mitigation options.
- If overwintering turtles or snakes are disturbed by construction activities, work shall cease and a Qualified Biologist shall be contacted to discuss mitigation measures. Overwintering turtles and snakes shall not be relocated.
- Immediately upon observation of an actively nesting turtle, personnel and vehicles shall clear the area within the turtle's line of sight as much as possible to allow the female to finish laying. Startling a nesting female could lead to abandonment of the partially laid nest before the eggs are concealed.
- If potential turtle nest sites (i.e., areas of fresh digging in loose gravel or sandy material) are found within the work areas, all work in that area shall cease. The nests shall be left undisturbed, flagged and a setback applied to protect against construction activities. If avoidance is not possible, egg salvage may be completed by a Qualified Biologist.

6.2.1.2.4 Habitat of SAR

- Maintain 30 m setback from healthy Black Ash that are 8 cm or greater, otherwise a permit under the ESA may be required. Fourteen healthy mature individuals were identified in 2025 following the Black Ash Assessment Guidelines (MECP 2024)
- Time vegetation removal activities to occur between October 1 to March 31, which is outside of the active period for bats and Blanding's Turtle, or as authorized by MECP.
- Cavity trees to be retained shall be identified and their root zone protected by clearly demarcating vegetation clearing/construction limits within the dripline.
- Construction activities within 30 m of known cavity trees shall be restricted to daylight hours when possible
- Mitigation and compensation measures for bats may include installation of artificial roosting structures (i.e. bat boxes) and will be confirmed through consultation with MECP.

  - A recommended artificial roosting structure design is the two-chamber Rocket Boxes that can accommodate an average of 250 bats (specifications available at the following website http://www.batcon.org/files/RocketBoxPlans.pdf).
  - To reduce the effects of light pollution on bats, it is recommended that permanent light fixtures installed near bat habitat be avoided, where feasible. If not feasible, it is recommended to reduce illumination and light spill through design (e.g. height of light, light shields, lighting intensity, direction and spectral composition).
- Mitigation for potential encounters with Blanding's Turtle shall follow the recommendations outlined in Section 6.2.1.2.3 (Wildlife Encounters, Safe Handling and Relocation.

6.2.1.3 Headwater Drainage Features

The SWF associated with the mapped Thomas Baxter Drain (Stoneburner Ext.) is a small undefined channel that directs excess water from the associated wetland / swamp feature overland. Mitigation measures to reduce potential impacts / effects to the wetland and wildlife habitat are outlined in Sections 6.2.1.1 and 6.2.1.2.

The Unnamed SWF in the agricultural field is identified came up through the HDF assessment as no management, although continuing to Maintain surface water drainage patterns through the wetland habitats and downstream during seasonal periods where groundwater levels are high will mitigate any potential impacts.

6.2.1.4 Erosion and Sediment Control

- Develop and implement an Erosion and Sediment Control (ESC) Plan prior to construction to protect sensitive natural heritage features.
- The ESC Plan shall capture measures related to vegetation communities, natural areas, and wildlife habitat
- Maintain vegetative buffers and retain natural vegetation to the extent feasible, to help control erosion.
- Timing of vegetation removal shall consider rainfall and other weather conditions that could increase the likelihood of erosion and sedimentation.
- Minimize the extent and duration of exposed soil and cover areas to suppress dust and prevent sedimentation due to wind and rainfall erosion.
- Re-vegetate disturbed areas as soon as possible to help re-stabilize soils Vegetation plantings shall include a seed mix that is appropriate to the area and similar to or better than pre-construction conditions.
- Selection of ESC measures shall be appropriate for the site and extent of disturbance, and potential impacts to wildlife, such as entanglement. For example, measures that contain plastic or wire mesh or netting shall not be used, and fully biodegradable options shall be implemented wherever feasible (e.g. erosion control blankets made from coconut fiber, fibre rolls and etc.).

Placement of silt fencing shall not create a barrier to movement and wildlife should be redirected to areas where there is safe passage and access to habitat.

- ESC measures shall be installed prior to vegetation removal and remain in place until vegetation has become established and soils re-stabilized.
- Remove non-biodegradable ESC materials, where approved, once site is stabilized.
- ESC measures shall be inspected to confirm they are installed in accordance with manufacturer's instructions and maintained so that controls are working effectively and per design. A monitoring log shall be maintained and include any corrective actions taken and additional recommendations to maintain compliance.

6.2.1.5 Earth and Excess Material, Waste, Refueling, Spills

- Management and placement of earth, excess soil and stockpiles shall be suitably planned so it does not result in the discharge of contaminants into the natural environment or promote use by wildlife (e.g. bird nesting).
- Stockpiles shall not be placed within wetland areas, 30 m of natural areas, adjacent to woodland edges, in sites where it would interfere with natural drainage patterns.
- The placement of earth, excess soil and stockpiles shall not negatively impact drainage patterns within the project limits or negatively impact drainage patterns of adjacent natural features.
- Waste resulting from construction shall be removed from the site and disposed of at an appropriate facility. This includes packaging (bags, wraps, boxes, ties, etc.), waste materials (excess fill, cement, grout, asphalt, or other substances), and ESC structures (silt fencing, flow checks, etc.) once permanent vegetation has established and ESC measures are no longer required.
- Develop and implement a Spill Prevention and Response Contingency Plan that includes measures for preventing, addressing, and reporting potential spills, in accordance with all applicable regulations, permits, and guidelines.
- On-site hazardous materials, vehicle maintenance and refueling activities shall be properly stored and located at least 30 m away from wetlands, and other sensitive natural features.
- All on-site materials shall be self-contained, maintained according to manufacturer's instructions, and disposed of appropriately.
- Spill kits shall always be kept on-site and accessible at all times.
- Control all activities, including equipment maintenance and re-fueling, to prevent entry of petroleum products or other deleterious substances, including any debris, waste, rubble, or concrete material, into the natural environment.
- Re-fueling stations shall be located away from the identified natural areas.

6.2.1.6 Environmental Training and Monitoring

- Wildlife protocols shall be developed, and staff training shall be implemented to educate workers of potential wildlife occurrences, including SWH and habitat of SAR, and measures to take in the event of potential encounters. Preventative measures to reduce encounters, injury, and incidental take shall also be provided (e.g., timing restrictions, visual inspections, etc.).
- Monitoring shall occur so that mitigation and contingency measures are implemented, and performance objectives are being met. A construction monitoring log shall be maintained so that any deficiencies and corrective actions are documented.
- Environmental monitoring during construction shall include, but not be limited to:
  - Regular inspections of sensitive features so that setbacks are adhered to and that damage/alteration to the demarcations of these features is addressed.
  - Required monitoring activities so that spills and sediment releases are prevented or addressed quickly and effectively.
  - Visual inspections and wildlife monitoring shall be required where exclusionary measures have been installed and where wildlife activity has been noted.
  - Inspection of turtle exclusion fencing shall occur daily during the turtle active period (April 1 to October 31) and shall be conducted by an Environmental Monitor or a worker who is trained and given the responsibility.
  - Monitoring during construction of environmental features to confirm works are carried out in accordance with the design and specifications, including, but not limited to, construction of wildlife passages, wildlife fencing, landscaping, and restoration, nesting preventative measures, compensation structures, etc.
- Specialized environmental monitoring programs shall be developed and implemented as it relates to rehabilitation and enhancement and any permitting or approvals required for the Project.

6.2.2 Operation

Once operational, the Project will require ongoing mitigation measures to address potential risks related to fire hazards, environmental contamination, and emergency response. Compliance with key safety standards and the implementation of fire protection, explosion mitigation, and emergency response plans will allow for the long-term safety and sustainability of the site. Coordination with local emergency services will further enhance preparedness and response capabilities. The following mitigation measures have been identified to lessen potential impacts due to fire and off-site contamination:

- Comply with key safety standards, including Underwriters Laboratories (UL) 9540, UL 9540A, and National Fire Protection Association (NFPA) 855
- Develop and implement a Fire Protection and Explosion Mitigation and Management Plan
- Develop and implement an Emergency Response Plan in coordination with the Ottawa Fire Services (OFS)

6.3 Net Environmental Impacts

With mitigation and protective measures in place, the proposed development is not anticipated to result in net negative impacts to the form or function of significant natural heritage features with the Study Area. A discuss of each significant natural heritage features is provided below.

6.3.1 Non-significant Wetlands and Surface Water Features

While wetlands within the Study Area were found to not be significant, the City's OP provides protections for non-significant wetlands. Given the land availability constraints of the proposed site, the Project Footprint was unable to maintain setbacks to the non-significant wetlands. As a result, the Project will result in a loss of 4.02 ha of non-significant wetlands. However, through the proposed SWM system, drainage patterns within the Study Area and offsite will be maintained. Furthermore, as demonstrated below, no net negative impacts are anticipated to the form or function of significant woodlands or SWH, contained within the non-significant wetlands, and no impacts are anticipated to fish habitat as none was identified. However, to address the loss of non-significant wetlands, Evolugen will work collaboratively with the City and RVCA to achieve a no net loss and will employ available mechanisms as per the policy, which may include land use planning, development processes, acquisition and conservation of land and voluntary, private land conservation.

6.3.2 Significant Woodlands

Significant Woodlands have been identified within the Study Area. According to the Significant Woodlands Guidelines for Identification, Evaluation, and Impact Assessment (City of Ottawa 2022c), significant woodlands in rural areas are those meeting any one of the criteria in the Natural Heritage Reference Manual, as assessed in a subwatershed planning context and applied in accordance with Council-approved guidelines, where such guidelines exist. Criteria from the Natural Heritage Reference Manual and an assessment of net impacts to the form and function are summarized in Table 6-1.

Table 6-1 Summary of Net Impacts to form and function of Significant Woodland

Criteria	Sub-criteria	Net Impacts
1. Size	Woodland Size	In the Lower Rideau River Planning Area, woodlands of 50ha or larger are consider significant (City of Ottawa 2022c). The woodlands within the Study Area are part of a contiguous woodland patch ~300ha in size. Removal of 4.02 ha of habitat (~1.3%) will maintain the total woodland size well above the significant criteria.

Criteria	Sub-criteria	Net Impacts
2. Ecological Functions	Woodland Interior	Woodlands in the Planning Area are significant if they contain more than 8ha of interior habitat. The Project Footprint, found toward the edge of the larger woodland patch, result in a very small loss of interior habitat, maintaining it well above the significant criteria.
	Proximity to other natural heritage features	Non-significant wetlands, SWH and HDF overlap with the significant woodland in the Study Area. As per Section 6.3.1 and 6.3.3 of this report, net negative impacts to these features are not anticipated.
	Ecological linkages	The placement of the Project Footprint does not interfere with linkages between the significant woodland and other natural heritage features.
	Water protections	With the SWM system in place, water quantity and quality off site is anticipated to be maintained.
	Woodland diversity	The proposed Project is not anticipated to result in a change in species diversity within the significant woodland. Section 6.3.3 and 6.4 of this report provide further discussion on SWH and SAR.
3. Uncommon Characteristics	Unique species composition	Woodlands within the Study Area were not identified as uncommon in terms of species composition, cover type, age or structure.
	Provincially significant vegetation community	No provincially significant vegetation communities were identified within the Study Area.
	Rare, uncommon, or restricted plant species	One rare plant species, Black Ash, was identified with the Study Area. Removal of a small number of Black Ash is proposed, in accordance with provincial species at risk legislation. However, the Project is not anticipated to affect the viability of the local population within the significant woodland.
	Old woodlands	No old growth woodlands were identified within the Study Area.

Criteria	Sub-criteria	Net Impacts
4. Economical and social values	High productivity of economically valuable products	The Study Area is on private property and not known to provide economically valuable products.
	High value in special services, such as air-quality improvement or recreation.	The Study Area is on private property and not known to provide recreation. Evolugen will work collaboratively with the City and RVCA and tree replacement, to maintain air-quality improvements of trees.
	Important identified appreciation, education, cultural or historical value.	The Study Area is on private property and not known to educational value.

Based on the assessment provided in Table 6-1, no net negative impacts are anticipated to the significant woodland within the Study Area. Regardless, Evolugen will work collaboratively with the City and RVCA on a tree replacement plan with the watershed.

6.3.3 Significant Wildlife Habitat

The results of the field studies and following evaluation of significance identified the SWH within the Study Area. Table 6-2 provides a summary of net impacts to SWH, after mitigation and protective measures.

Table 6-2 Summary of Net Impacts to form and function of Significant Wildlife Habitat

Type	Significant Wildlife Habitat	Net Impacts
Seasonal Concentration Areas	Woodland Bat Maternity Colonies (confirmed): Woodland habitat.	Individual bats regularly move between roosts during the maternity season, requiring a diversity of roosting opportunities in the local landscape. As such, individual roost trees are less important to bats, than maintaining a variety of roost trees in the landscape. The proposed Project, removing approximately 1.3% of the woodland feature, is expected to have a negligible impact on the availability of roosting opportunities in the SWH patch. As such, no net negative impacts are anticipated.
	Reptile Hibernaculum (candidate): While suitable sites were not identified within the Project Footprint, habitat has the potential to occur within the Study Area.	As suitable sites were not identified within the Project Footprint itself, direct impacts to reptile hibernacula are not anticipated. With mitigation in place, including those for vegetation clearing, wildlife exclusion and wilding encounters, no net negative impacts to reptile hibernacula habitat are anticipated.

Type	Significant Wildlife Habitat	Net Impacts
Specialized Habitat for Wildlife	Amphibian Breeding Habitat (Wetland) (confirmed): While hydroperiod of standing water within the Project Footprint is not expected to support breeding amphibian, the swamp community has a whole was supporting significant amphibian breeding.	The Project is not anticipated to directly remove breeding pools for amphibians. With mitigation in place, including that for vegetation removal, wildlife exclusion and the SWM system, indirect impacts to breeding pools are anticipated to be negligible. The loss of a relatively small amount (1.3%) of adjacent forest habitat is also expected to have an overall negligible effect on ability of the SWH patch to support all life processes of amphibians. As such, no negative impacts to the Amphibian Breeding SWH are anticipated.
	Woodland Area-Sensitive Bird Breeding Habitat (confirmed): The swamp communities in the Study Area provides interior habitat. Breeding bird surveys confirmed the presence of three requisite species: Yellow-bellied Sapsucker, Veery and Ovenbird.	The woodlands within the Study Area are part of a contiguous woodland patch ~300ha in size. Removal of 4.02 ha of habitat (~1.3%) will maintain the total woodland size well above the 30 ha criteria for SWH and maintain interior habitat more than 200m from the forest edge. Overall, the project is anticipated to have no negative impact to woodland area-sensitive bird breeding SWH.
Habitat for SOCC	Eastern Wood-Pewee (confirmed): This species was recorded during breeding bird surveys. Suitable habitat is present within the swamp communities in the Study Area.	The relatively small amount of habitat removal (4.02 ha or ~1.3% of the total woodlot) will maintain a woodland size and structure suitable for multiple Eastern Wood-Pewee breeding territories. As such, the Project is anticipated to have no negative impact to Eastern Wood-Pewee breeding habitat.
	Monarch (candidate): Suitable habitat may be present within the Study Area, including patches of milkweed and pollinator habitat.	Areas of milkweed and pollinator habitat occur outside of the Project Footprint. With mitigation measures in place, including those for vegetation removal, indirect impacts are expected to be negligible. As such, no net negative impacts to Monarch habitat are anticipated.
Animal Movement Corridors	Amphibian Movement Corridors (candidate): Suitable habitat is present within the Study Area based on presence of confirmed amphibian breeding habitat (wetlands). The swamp communities in the Study Area and woodland communities located outside of the Study Area, likely provide movement corridors for amphibians.	The placement of the Project Footprint does not interfere with linkages between breeding pools and upland forest habitat. As such, no net negative impacts to animal movement corridors are anticipated.

6.4 Species at Risk

The results of the field studies identified the presence of SAR within the Project Footprint. Table 6-3 provides a summary of net impacts to SAR, after mitigation and protective measures.

Table 6-3 Summary of Net Impacts to form and function of Species at Risk

Species	Net Impacts
Bats: Woodland habitat	Individual bats regularly move between roosts during the maternity season, requiring a diversity of roosting opportunities in the local landscape. As such, individual roost trees are less important to bats, than maintaining a variety of roost trees in the landscape. The proposed Project, removing approximately 1.3% of the woodland feature, is expected to have a negligible impact on the availability of roosting opportunities for SAR bats. As such, no net negative impacts are anticipated.
Black Ash: Swamp habitat	Three (3) individuals located within the Project Footprint that were confirmed to be healthy and over 8 DBH may be impacted directly by Project activities. With mitigation measures in place, including those for vegetation removal and the SWM system, indirect impacts to the remaining 7 healthy individuals within the Study Area are anticipated to be negligible. Furthermore, additional individuals were identified outside of the Study Area and are expected to occur throughout the larger forest community. The proposed Project is not anticipated to affect the viability of the local population. Net negative impacts are not anticipated.
Wood Thrush: Forest habitat	The relatively small amount of habitat removal (4.02 ha or ~1.3% of the total woodlot) will maintain a woodland size and structure suitable for multiple Wood Thrush breeding territories. As such, the Project is anticipated to have no negative impact to Wood Thrush breeding habitat.
Blanding's Turtle: potential for encounters	The Study Area is not anticipated to provide wetland habitat for Blanding's Turtle, however, as mobile turtle species, there is potential for encounters with individuals during construction and operation. However, with mitigation measures in place, including those for vegetation clearing, wildlife exclusion and wildlife encounters, no net negative impacts to Blanding's Turtles are anticipated.

Overall, no net negative impacts to SAR are anticipated for construction of the project. Regardless, Evolugen is in consultation with MECP to ensure required authorization are in place under provincial species at risk legislation.

7 Permitting Requirements

The following table (Table 7-1) outlines relevant environmental legislation and potential permits, approvals or compliance measures, in addition to the municipal planning approvals, anticipated for the Project.

Table 7-1 Summary of Potential Permits that may be Required for the Project

Legislation	Approval Type	Species/Features	Notes
Endangered Species Act (ESA) / Species Conservation Act (SCA)	Permit / Registration	• Bats (swamp) - confirmed • Black Ash (swamp) - confirmed • Blanding's Turtle (general) - potential	Consultation with MECP is ongoing.
Migratory Birds Convention Act (MBCA) – general	Compliance	• Adhere to timing windows and avoid vegetation removals between April 15 to August 31, where feasible	Nest sweeps can be completed if removals required during active period (April 15 to August 31).
Species at Risk Act (SARA)	Compliance	• Migratory birds	Avoidance through timing windows (same as MBCA)

8 Summary and Conclusion

This report was prepared to document natural features that require consideration through the municipal application process and may pose constraints to development, including features that are protected by the City of Ottawa's OP (City of Ottawa 2022a) and other relevant legislation and policy.

The proposed development will have direct impacts on wetland/ SWFs and wildlife habitat within the Project Footprint, primarily affecting swamp communities and associated wildlife habitat. The wetlands are also identified as significant woodlands and part of the City's Natural Environment Overlay mapping in the City's OP (Figure 1). While none of the wetlands were found to be provincially significant, they do provide ecological functions such as SWH for amphibian breeding habitat, woodland area-sensitive bird breeding habitat, bat maternity colonies, and habitat for SOCC (i.e., Eastern Wood-Pewee) and SAR habitat for bats. Impacts to SAR are also anticipated through removal of bat habitat and individual Black Ash. Additional surveys for Black Ash confirmed 10 healthy mature individuals with 8 cm DBH or greater and a permit may be required.

The wetlands also have the potential to support candidate SWH for reptile hibernaculum (e.g., snakes), habitat for SOCC (e.g., Western Chorus Frog) and amphibian movement corridors. These habitats were not confirmed; however, mitigation measures have been provided should these be incidentally discovered during construction.

Indirect impacts on adjacent lands may include hydrological changes, habitat edge effects, and potential disturbance to candidate SWH for habitat of SOCC (e.g., Monarch) and SAR (e.g., bats, Blanding's Turtle).

To mitigate potential effects, the following recommendations are proposed:

- **No Net Loss of Wetland**: Evolugen will work collaboratively with the City and RVCA to achieve a no net loss and will employ available mechanisms as per the policy, which may include land use planning, development processes, acquisition and conservation of land and voluntary, private land conservation.
- **Reduce Habitat Disturbance**: Implement site-specific measures to reduce noise, light pollution, and human activity impacts on wildlife during and post-construction.
- **Wildlife Monitoring**: Conduct regular monitoring to assess wildlife movement and habitat use, adjusting mitigation measures as needed.
- **Vegetation Management**: Follow appropriate vegetation removal and management strategies to prevent the spread or establishment of invasive species. Restore disturbed areas using native plant species and seed mixes appropriate to the site conditions and enhance wildlife habitat.
- **Operational Safety**: Compliance with key safety standards and the implementation of fire protection, explosion mitigation, and emergency response plans.

- **Permitting and Authorizations:** Consultation with MECP is underway to determine permit requirements related to bats, Black Ash and potential encounters of Blanding's Turtle. Additional studies in 2025 confirmed 10 healthy Black Ash 8 cm DBH or greater following health assessment using MECP guidelines (MECP 2024); a permit is not required for unhealthy trees or if the Project can maintain a 30 m setback from healthy trees. Compensation may include tree re-plantings, installation of artificial roost structures (e.g., rocket style bat boxes), re-planting Black Ash. Preparation of a Request for Review under the *Fisheries Act* if impacts to fish habitat are identified through detailed design.

As detailed in Section 6.3, it is the professional opinion of Stantec that with mitigation and protective measures in place, no net negative impacts are anticipated to the non-significant wetland, significant woodlands, SWH, SWFs, and habitat for SAR that overlap the Project Footprint.

9 References

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Appendices

Appendix A Figures

Stantec

Legend

- Connection Line
- Project Area
- Project Footprint
- Study Area (120 m)
- Constructed Drain
- Existing Hydro Line
- Watercourse (Permanent)
- Significant Woodland
- Wetland, Unevaluated
- 1 km UTM Grid

0 100 200 m

1:4,500 (At original document size of 11x17)

Notes

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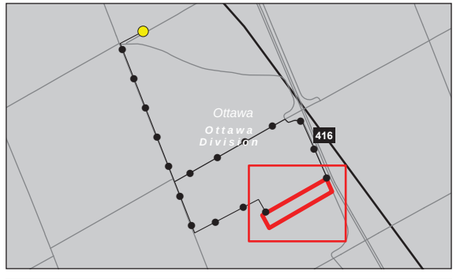

Project Location
City of Ottawa

160930480 REV1
Prepared by BF on 2025-03-28
Technical Review by AW on 2025-03-26

Client/Project
Evolugen
Evolugen Battery Energy Storage System (Trail Road Location)
Environmental Impact Statement

Figure No.
A1

Title
Background Data

Stantec

Legend

- Connection Line
- Project Area
- Project Footprint
- Study Area (120 m)
- Constructed Drain
- Watercourse (Permanent)
- Ecological Land Classification Boundary
- Wetland (Stantec 2024)

ELC Description

- CGL_2 (Parkland)
- CUM1 (Mineral Cultural Meadow Ecosite)
- CVC_4 (Extraction), FODM8-1 (Fresh – Moist Poplar Deciduous Forest Type)
- CVI_1 (Transportation)
- CVI_4 (Power Generation)
- CVR_1 (Low Density Residential)
- CVR_4 (Rural Property)
- FOCM5 (Naturalized Coniferous Hedge-row Ecosite)
- FODM11 (Naturalized Deciduous Hedge-row Ecosite)
- FODM5-11 (Dry – Fresh Sugar Maple – Hardwood Deciduous Forest Type)
- FODM8-1 (Fresh – Moist Poplar Deciduous Forest Type)
- FODM8-1 (Fresh – Moist Poplar Deciduous Forest Type), CVC_4 (Extraction)
- OAG (Open Agriculture)
- OAGM1 (Annual Row Crops)
- SWDM3-1 (Red Maple Mineral Deciduous Swamp Type)
- SWDM4-5 (Poplar Mineral Deciduous Swamp Type)
- THDM3-1 (Buckthorn Deciduous Hedgerow Thicket Type)
- WOMM3 (Dry - Fresh Mixed Woodland Ecosite)

0 100 200 m

1:4,500 (At original document size of 11x17)

Notes

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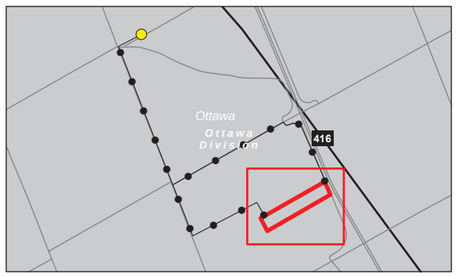

Project Location
City of Ottawa

160930480 REV1
Prepared by BF on 2025-03-26
Technical Review by AW on 2025-03-26

Client/Project
Evolugen
Evolugen Battery Energy Storage System (Trail Road Location)
Environmental Impact Statement

Figure No.
A2

Title
Ecological Land Classification

Stantec

Legend

- Connection Line
- Project Area
- Project Footprint
- Study Area (120 m)
- Amphibian ARU Location
- Bat ARU Location
- Breeding Bird Survey Location
- Constructed Drain (Intermittent)
- Constructed Drain (Permanent)
- Drainage Features
- Surface Water Feature (Ephemeral)

Species and Habitat

- Black Ash Tree
- Common Milkweed
- Eastern Wood-pewee
- Black Ash Tree Polygon
- Potential Pollinator Habitat

0 100 200 m

1:4,500 (At original document size of 11x17)

Notes

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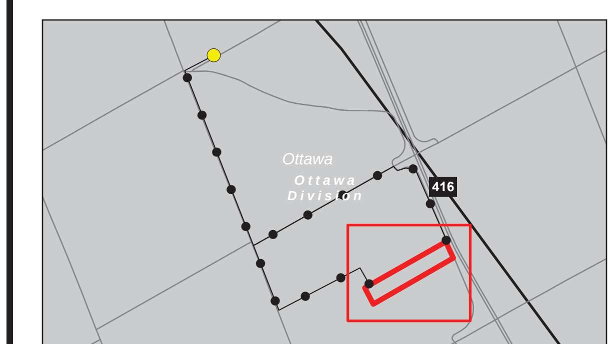

Project Location
City of Ottawa

160930480 REV2
Prepared by BF on 2025-03-27
Technical Review by AW on 2025-03-26

Client/Project
Evolugen
Evolugen Battery Energy Storage System (Trail Road Location)
Environmental Impact Statement

Figure No.
A3

Title
Terrestrial and Aquatic Habitat

Appendix B Species List

Appendix B - Species List

Species		SAR Status		Conservation Rank and Rarity Status			
Common Name	Scientific Name	Provincial (ESA, 2007)	National (SARA)	National (COSEWIC)	Global (G-rank)	Provincial (S-rank)	Source
AMPHIBIANS							
American Bullfrog	*Lithobates catesbeianus*				G5	S4	ORAA
American Toad	*Bufo americanus*				G5	S5	ORAA, Stantec Observation
Eastern Red-backed Salamander	*Plethodon cinereus*				G5	S5	ORAA
Gray Treefrog	*Hyla versicolor*				G5	S5	ORAA, Stantec Observation
Green Frog	*Rana clamitans*				G5	S5	ORAA
Mudpuppy	*Necturus maculosus*			SC	G5	S4	ORAA
Northern Leopard Frog	*Rana pipiens*				G5	S5	ORAA
Northern Two-lined Salamander	*Eurycea bislineata*				G5	S4	ORAA
Spring Peeper	*Pseudacris crucifer*				G5	S5	ORAA, Stantec Observation
Western Chorus Frog	*Pseudacris maculata* pop. 1		THR	THR	G5TNRQ	S4	ORAA
Wood Frog	*Lithobates sylvaticus*				G5	S5	ORAA
REPTILES							
Blanding's Turtle	*Emydoidea blandingii*	THR	END, Schedule 1	END	G4	S3	ORAA
Eastern Gartersnake	*Thamnophis sirtalis*				G5T5	S5	ORAA
Eastern Musk Turtle	*Sternotherus odoratus*	SC	SC, Schedule 1	SC	G5	S3	ORAA
Midland Painted Turtle	*Chrysemys picta marginata*		SC, Schedule 1	SC	G5T5	S4	NHIC, ORAA
Snapping Turtle	*Chelydra serpentina*	SC	SC, Schedule 1	SC	G5	S4	ORAA
MAMMALS							
Beaver	*Castor canadensis*				G5	S5	AMO
Big Brown Bat	*Eptesicus fuscus*				G5	S4	AMO, Stantec Observation
Coyote	*Canis latrans*				G5	S5	AMO
Eastern Chipmunk	*Tamias striatus*				G5	S5	AMO
Eastern Cottontail	*Sylvilagus floridanus*				G5	S5	AMO
Eastern Grey Squirrel	*Sciurus carolinensis*				G5	S5	AMO
Eastern Red Bat	*Lasiurus borealis*	END		END	G3G4	S4	AMO, Stantec Observation
Eastern Small-footed Myotis	*Myotis leibii*	END			G4	S2S3	AMO
Hoary Bat	*Lasiurus cinereus*	END		END	G3G4	S4	AMO, Stantec Observation
Little Brown Myotis	*Myotis lucifugus*	END	END, Schedule 1	END	G3G4	S3	AMO, Stantec Observation
Northern Short-tailed Shrew	*Blarina brevicauda*				G5	S5	AMO
Northern Myotis	*Myotis septentrionalis*	END	END, Schedule 1	END	G2G3	S3	AMO
Raccoon	*Procyon lotor*				G5	S5	AMO
Red Squirrel	*Tamiasciurus hudsonicus*				G5	S5	AMO
Silver-haired Bat	Lasionycteris noctivagans	END		END	G3G4	S4	AMO, Stantec Observation
Tri-colored Bat	*Perimyotis subflavus*	END	END, Schedule 1	END	G3G4	S3?	AMO, Stantec Observation
White-tailed deer	*Odocoileus virginianus*				G5	S5	AMO; Stantec Observation
BIRDS							
Alder Flycatcher	*Empidonax alnorum*				G5	S5B	OBBA
American Bittern	*Botaurus lentiginosus*				G5	S5B	OBBA
American Coot	*Fulica americana*				G5	S3B,S4N	NHIC, OBBA
American Crow	*Corvus brachyrhynchos*				G5	S5	OBBA, Stantec Observation
American Goldfinch	*Spinus tristis*				G5	S5	OBBA, Stantec Observation
American Goshawk	*Accipiter atricapillus*				G5	S4	OBBA
American Kestrel	*Falco sparverius*				G5	S4	OBBA
American Redstart	*Setophaga ruticilla*				G5	S5B	OBBA, Stantec Observation
American Robin	*Turdus migratorius*				G5	S5	OBBA, Stantec Observation
American Woodcock	*Scolopax minor*				G5	S4B	OBBA
Bald Eagle	*Haliaeetus leucocephalus*				G5	S4	OBBA, Stantec Observation
Baltimore Oriole	*Icterus galbula*				G5	S4B	OBBA
Bank Swallow	*Riparia riparia*	THR	THR, Schedule 1	THR	G5	S4B	OBBA, Stantec Observation
Barn Swallow	*Hirundo rustica*	SC	THR, Schedule 1	SC	G5	S4B	OBBA, Stantec Observation
Barred Owl	*Strix varia*				G5	S5	OBBA
Belted Kingfisher	*Megaceryle alcyon*				G5	S5B,S4N	OBBA
Black-and-white Warbler	*Mniotilta varia*				G5	S5B	OBBA
Black-billed Cuckoo	*Coccyzus erythropthalmus*				G5	S4S5B	OBBA
Blackburnian Warbler	*Setophaga fusca*				G5	S5B	OBBA
Black-capped Chickadee	*Poecile atricapillus*				G5	S5	OBBA, Stantec Observation
Black-throated Green Warbler	*Setophaga virens*				G5	S5B	OBBA
Blue Jay	*Cyanocitta cristata*				G5	S5	OBBA, Stantec Observation
Blue-headed Vireo	*Vireo solitarius*				G5	S5B	OBBA
Blue-winged Teal	*Spatula discors*				G5	S3B, S4M	NHIC
Blue-winged Warbler	*Vermivora cyanoptera*				G5	S4B	OBBA
Bobolink	*Dolichonyx oryzivorus*	THR	THR, Schedule 1	SC	G5	S4B	NHIC, OBBA
Broad-winged Hawk	*Buteo platypterus*				G5	S5B	OBBA
Brown Creeper	*Certhia americana*				G5	S5	OBBA, Stantec Observation
Brown Thrasher	*Toxostoma rufum*				G5	S4B	OBBA, Stantec Observation
Brown-headed Cowbird	*Molothrus ater*				G5	S5	OBBA
Canada Goose	*Branta canadensis*				G5	S5	OBBA, Stantec Observation
Caspian Tern	*Hydroprogne caspia*				G5	S3B,S5M	Stantec Observation
Canada Warbler	*Cardellina canadensis*	SC	THR, Schedule 1	SC	G5	S5B	OBBA
Cape May Warbler	*Setophaga tigrina*				G5	S5B	OBBA
Cedar Waxwing	*Bombycilla cedrorum*				G5	S5	OBBA, Stantec Observation
Chestnut-sided Warbler	*Setophaga pensylvanica*				G5	S5B	OBBA, Stantec Observation
Chimney Swift	*Chaetura pelagica*	THR	THR, Schedule 1	THR	G4G5	S3B	OBBA
Chipping Sparrow	*Spizella passerina*				G5	S5B,S3N	OBBA, Stantec Observation
Cliff Swallow	*Petrochelidon pyrrhonota*				G5	S4S5B	OBBA
Common Grackle	*Quiscalus quiscula*				G5	S5	OBBA, Stantec Observation
Common Nighthawk	*Chordeiles minor*	SC	SC, Schedule 1	SC	G5	S4B	NHIC, OBBA
Common Raven	*Corvus corax*				G5	S5	OBBA
Common Yellowthroat	*Geothlypis trichas*				G5	S5B,S3N	OBBA, Stantec Observation
Cooper's Hawk	*Accipiter cooperii*				G5	S4	OBBA
Dark-eyed Junco	*Junco hyemalis*				G5	S5	OBBA
Downy Woodpecker	*Dryobates pubescens*				G5	S5	OBBA, Stantec Observation
Eastern Bluebird	*Sialia sialis*				G5	S5B,S4N	OBBA
Eastern Kingbird	*Tyrannus tyrannus*				G5	S4B	OBBA
Eastern Meadowlark	*Sturnella magna*	THR	THR, Schedule 1	THR	G5	S4B,S3N	NHIC, OBBA
Eastern Phoebe	*Sayornis phoebe*				G5	S5B	OBBA
Eastern Towhee	*Pipilo erythrophthalmus*				G5	S4B,S3N	OBBA
Eastern Whip-poor-will	*Antrostomus vociferus*	THR	THR, Schedule 1	SC	G5	S4B	OBBA
Eastern Wood-Pewee	*Contopus virens*	SC	SC, Schedule 1	SC	G5	S4B	NHIC, OBBA, Stantec Observation
European Starling	*Sturnus vulgaris*				G5	SNA	OBBA, Stantec Observation
Evening Grosbeak	*Coccothraustes vespertinus*	SC	SC, Schedule 1	SC	G5	S4	OBBA

Appendix B - Species List

Species		SAR Status		Conservation Rank and Rarity Status			
Common Name	Scientific Name	Provincial (ESA, 2007)	National (SARA)	National (COSEWIC)	Global (G-rank)	Provincial (S-rank)	Source
Field Sparrow	*Spizella pusilla*				G5	S4B,S3N	OBBA

Appendix B - Species List

Species		SAR Status		Conservation Rank and Rarity Status			
Common Name	Scientific Name	Provincial (ESA, 2007)	National (SARA)	National (COSEWIC)	Global (G-rank)	Provincial (S-rank)	Source
Golden-crowned Kinglet	*Regulus satrapa*				G5	S5	OBBA
Golden-winged Warbler	*Vermivora chrysoptera*	SC	THR, Schedule 1	THR	G4	S3B	OBBA
Grasshopper Sparrow	*Ammodramus savannarum*	SC		SC	G5	S4B	NHIC, OBBA
Gray Catbird	*Dumetella carolinensis*				G5	S5B,S3N	OBBA, Stantec Observation
Great Blue Heron (+)	*Ardea herodias*				G5	S4	OBBA
Great Crested Flycatcher	*Myiarchus crinitus*				G5	S5B	OBBA, Stantec Observation
Great Egret (+)	*Ardea alba*				G5	S2B,S3M	OBBA
Great Horned Owl	*Bubo virginianus*				G5	S4	OBBA
Green Heron (+)	*Butorides virescens*				G5	S4B	OBBA
Hairy Woodpecker	*Dryobates villosus*				G5	S5	OBBA, Stantec Observation
Hermit Thrush	*Catharus guttatus*				G5	S5B,S4N	OBBA, Stantec Observation
Hooded Merganser	*Lophodytes cucullatus*				G5	S5	OBBA
Horned Lark	*Eremophila alpestris*				G5	S4	OBBA
House Finch	*Haemorhous mexicanus*				G5	SNA	OBBA
House Sparrow	*Passer domesticus*				G5	SNA	OBBA
House Wren	*Troglodytes aedon*				G5	S5B	OBBA
Indigo Bunting	*Passerina cyanea*				G5	S5B	OBBA
Killdeer	*Charadrius vociferus*				G5	S4B	OBBA, Stantec Observation
Least Bittern	*Botaurus exilis*	THR	THR, Schedule 1	THR	G4	S4B	OBBA
Least Flycatcher	*Empidonax minimus*				G5	S5B	OBBA, Stantec Observation
Magnolia Warbler	*Setophaga magnolia*				G5	S5B	OBBA
Mallard	*Anas platyrhynchos*				G5	S5	OBBA, Stantec Observation
Marsh Wren	*Cistothorus palustris*				G5	S4B,S3N	OBBA
Merlin	*Falco columbarius*				G5	S5	OBBA
Mourning Dove	*Zenaida macroura*				G5	S5	OBBA
Mourning Warbler	*Geothlypis philadelphia*				G5	S5B	OBBA
Nashville Warbler	*Leiothlypis ruficapilla*				G5	S5B	OBBA
Northern Cardinal	*Cardinalis cardinalis*				G5	S5	OBBA, Stantec Observation
Northern Flicker	*Colaptes auratus*				G5	S5	OBBA
Northern Harrier	*Circus hudsonius*				G5	S5B,S4N	OBBA
Northern Saw-whet Owl	*Aegolius acadicus*				G5	S5	OBBA
Northern Waterthrush	*Parkesia noveboracensis*				G5	S5B	OBBA, Stantec Observation
Ovenbird	*Seiurus aurocapilla*				G5	S5B	OBBA, Stantec Observation
Pied-billed Grebe	*Podilymbus podiceps*				G5	S4B,S2N	Stantec Observation
Pileated Woodpecker (+)	*Dryocopus pileatus*				G5	S5	OBBA
Pine Siskin	*Spinus pinus*				G5	S5	OBBA, Stantec Observation
Pine Warbler	*Setophaga pinus*				G5	S5B,S3N	OBBA
Purple Finch	*Haemorhous purpureus*				G5	S5	OBBA
Purple Martin	*Progne subis*				G5	S3B	OBBA
Red-breasted Nuthatch	*Sitta canadensis*				G5	S5	OBBA
Red-eyed Vireo	*Vireo olivaceus*				G5	S5B	OBBA, Stantec Observation
Red-headed Woodpecker	*Melanerpes erythrocephalus*	END	END, Schedule 1	END	G5	S3	OBBA
Red-shouldered Hawk	*Buteo lineatus*				G5	S4B,S2N	OBBA
Red-tailed Hawk	*Buteo jamaicensis*				G5	S5	OBBA
Red-winged Blackbird	*Agelaius phoeniceus*				G5	S5	OBBA, Stantec Observation
Ring-billed Gull	*Larus delawarensis*				G5	S5	OBBA
Rock Pigeon	*Columba livia*				G5	SNA	OBBA
Rose-breasted Grosbeak	*Pheucticus ludovicianus*				G5	S5B	OBBA, Stantec Observation
Ruby-throated Hummingbird	*Archilochus colubris*				G5	S5B	OBBA
Ruffed Grouse	*Bonasa umbellus*				G5	S5	OBBA
Sandhill Crane	*Antigone canadensis*				G5	S5B,S3N	OBBA
Savannah Sparrow	*Passerculus sandwichensis*				G5	S5B,S3N	OBBA, Stantec Observation
Scarlet Tanager	*Piranga olivacea*				G5	S5B	OBBA
Sedge Wren	*Cistothorus stellaris*				G5	S4B	OBBA
Sharp-shinned Hawk	*Accipiter striatus*				G5	S5	OBBA
Song Sparrow	*Melospiza melodia*				G5	S5	OBBA, Stantec Observation
Spotted Sandpiper	*Actitis macularius*				G5	S5B	OBBA, Stantec Observation
Swamp Sparrow	*Melospiza georgiana*				G5	S5B,S4N	OBBA
Tree Swallow	*Tachycineta bicolor*				G5	S4S5B	OBBA, Stantec Observation
Trumpeter Swan	*Cygnus buccinator*				G4	S4	OBBA
Turkey Vulture	*Cathartes aura*				G5	S5B,S3N	OBBA
Upland Sandpiper	*Bartramia longicauda*				G5	S2B	NHIC, OBBA
Veery	*Catharus fuscescens*				G5	S5B	OBBA, Stantec Observation
Vesper Sparrow	*Pooecetes gramineus*				G5	S4B	OBBA
Virginia Rail	*Rallus limicola*				G5	S4S5B	OBBA
Warbling Vireo	*Vireo gilvus*				G5	S5B	OBBA, Stantec Observation
White-breasted Nuthatch	*Sitta carolinensis*				G5	S5	OBBA
White-throated Sparrow	*Zonotrichia albicollis*				G5	S5	OBBA, Stantec Observation
Wild Turkey	*Meleagris gallopavo*				G5	S5	OBBA, Stantec Observation
Willow Flycatcher	*Empidonax traillii*				G5	S4B	OBBA
Wilson's Snipe	*Gallinago delicata*				G5	S5B	OBBA
Wood Duck	*Aix sponsa*				G5	S5B,S3N	OBBA
Wood Thrush	*Hylocichla mustelina*	SC	THR, Schedule 1	THR	G4	S4B	NHIC, OBBA, Stantec Observation
Yellow Warbler	*Setophaga petechia*				G5	S5B	OBBA, Stantec Observation
Yellow-bellied Flycatcher	*Empidonax flaviventris*				G5	S5B	OBBA
Yellow-bellied Sapsucker	*Sphyrapicus varius*				G5	S5B,S3N	OBBA, Stantec Observation
Yellow-billed Cuckoo	*Coccyzus americanus*				G5	S4B	OBBA
Yellow-rumped Warbler	*Setophaga coronata*				G5	S5B,S4N	OBBA
INVERTEBRATES							
Acadian Hairstreak	*Satyrium acadica*				G5	S4	OBA
American Lady	*Vanessa virginiensis*				G5	S5	OBA
Aphrodite Fritillary	*Speyeria aphrodite*				G5	S5	OBA
Arctic Skipper	*Carterocephalus mandan*				G5	S5	OBA
Baltimore Checkerspot	*Euphydryas phaeton*				G4	S4	OBA
Banded Hairstreak	*Satyrium calanus*				G5	S4	OBA
Black Swallowtail	*Papilio polyxenes*				G5	S5	OBA
Broad-winged Skipper	*Poanes viator*				G5	S4	OBA
Bronze Copper	*Lycaena hyllus*				G5	S5	OBA
Cabbage White	*Pieris rapae*				G5	SNA	OBA
Canadian Tiger Swallowtail	*Papilio canadensis*				G5	S5	OBA
Clouded Sulphur	*Colias philodice*				G5	S5	OBA
Common Ringlet	*Coenonympha california*				G5	S5	OBA
Common Wood-Nymph	*Cercyonis pegala*				G5	S5	OBA
Crossline Skipper	*Polites origenes*				G5?	S4	OBA
Dreamy Duskywing	*Erynnis icelus*				G5	S5	OBA
Dun Skipper	*Euphyes vestris*				G5	S5	OBA

Appendix B - Species List

Species		SAR Status		Conservation Rank and Rarity Status			
Common Name	Scientific Name	Provincial (ESA, 2007)	National (SARA)	National (COSEWIC)	Global (G-rank)	Provincial (S-rank)	Source
Eastern Comma	*Polygonia comma*				G5	S5	OBA
Eastern Giant Swallowtail	*Heraclides cresphontes*				G5	S4	OBA
Eastern Pine Elfin	*Callophrys niphon*				G5	S5	OBA
Eastern Tailed Blue	*Cupido comyntas*				G5	S5	OBA
European Skipper	*Thymelicus lineola*				G5	SNA	OBA
Eyed Brown	*Lethe eurydice*				G5	S5	OBA
Great Spangled Fritillary	*Speyeria cybele*				G5	S5	OBA
Harris's Checkerspot	*Chlosyne harrisii*				G4?	S4	OBA
Hickory Hairstreak	*Satyrium caryaevorus*				G4	S4	OBA
Hobomok Skipper	*Poanes hobomok*				G5	S5	OBA
Indian Skipper	*Hesperia sassacus*				G5	S4	OBA
Juvenal's Duskywing	*Erynnis juvenalis*				G5	S5	OBA
Least Skipper	*Ancyloxypha numitor*				G5	S5	OBA
Little Wood-Satyr	*Megisto cymela*				G5	S5	OBA
Long Dash Skipper	*Polites mystic*				G5	S5	OBA
Meadow Fritillary	*Boloria bellona*				G5	S5	OBA
Monarch	*Danaus plexippus*	SC	END, Schedule 1	END	G4	S2N, S4B	OBA
Mourning Cloak	*Nymphalis antiopa*				G5	S5	OBA
Mustard White	*Pieris oleracea*				G5	S4	OBA
Northern Azure	*Celastrina lucia*				G5	S5	OBA
Northern Cloudywing	*Thorybes pylades*				G5	S5	OBA
Northern Crescent	*Phyciodes cocyta*				G5	S5	OBA
Northern Pearly-Eye	*Lethe anthedon*				G5	S5	OBA
Orange Sulphur	*Colias eurytheme*				G4G5	S5	OBA
Painted Lady	*Vanessa cardui*				G4G5	S5B	OBA
Pearl Crescent	*Phyciodes tharos*				G4G5	S4	OBA
Peck's Skipper	*Polites peckius*				G5	S5	OBA
Question Mark	*Polygonia interrogationis*				G5	S5	OBA
Red Admiral	*Vanessa atalanta*				G5	S5B	OBA
Silver-bordered Fritillary	*Boloria myrina*				G5?	S5	OBA
Silver-spotted Skipper	*Epargyreus clarus*				G5	S4	OBA
Silvery Blue	*Glaucopsyche lygdamus*				G5	S5	OBA
Striped Hairstreak	*Satyrium liparops*				G5	S5	OBA
Tawny-edged Skipper	*Polites themistocles*				G5	S5	OBA
Viceroy	*Limenitis archippus*				G5	S5	OBA
White Admiral	*Limenitis arthemis arthemis*				G5T5	S5	OBA
PLANTS							
Black Ash	*Fraxinus nigra*	END		THR	G5	S4	Stantec Observation

Definitions, Acronyms and Symbols

(+) = Migratory Birds Regulations (MBR 2022) Schedule 1 Species

Species of Conservation Concern (SOCC)

Species at Risk (SAR)

OBBA, ORAA, OBA 10km^2 Map Squares: 18VR40

NHIC 1km^2 Map Squares: 18VR4006, 18VR007, 18VR4106, 18VR4107

Global G-rank

G1: Critically Imperiled (at very high risk of extinction)
G2: Imperiled (at high risk of extinction)
G3: Vulnerable (at moderate risk of extinction)
G4: Apparently Secure (Uncommon but not rare)
G5: Secure (common, widespread and abundant)
G#G#: Range Rank (range of uncertainty about the status of a taxon or ecosystem type)
GU: Unrankable (currently unrankable due to lack of information)
GNR: Unranked (global rank not yet assessed)
GNA: Not Applicable (species is not a suitable target for conservation activities)
T: Denotes that the rank applies to a subspecies or variety
B: Breeding
N: Non-breeding

Provincial S-rank

S1: Critically Imperiled (i.e. fewer than 5 occurrences in the nation and/or province)
S2: Imperiled (i.e. fewer than 20 occurrences in the nation and/or province)
S3: Vulnerable (i.e. 20-80 occurrences in the nation and/or province)
S4: Apparently Secure (uncommon, but not rare in the nation and/or province)
S5: Secure (common, widespread and abundant in the nation and/or province)
SNA: Not Applicable (species is not a suitable target for conservation activities)
SHB: Breeding is not confirmed in Ontario
S#S#: Range Rank (range of uncertainty about the status of the species or community)
S#?: Rank is Uncertain
S?: Not Ranked Yet
B: Breeding migrants/vagrants
M: Migrant species occurring regularly on migration
N: Non-breeding migrants/vagrants

COSEWIC: Committee on the Status of Endangered Wildlife in Canada
ESA: Endangered Species Act
SARA: Species at Risk Act
SARO: Species at Risk in Ontario

SARA or ESA designagtion

END - Endangered
THR - Threatened
SC - Special Concern

References / Sources

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ORAA (Ontario Reptile and Amphibian Atlas): Ontario Nature. 2020. Ontario Reptile and Amphibian Atlas: a citizen science project to map the distribution of Ontario's reptiles and amphibians. Ontario Nature, Ontario. Cited online: https://www.ontarioinsects.org/herp.

Attachment B2: Ottawa International Airport Weather from April 2024 to July 2024 (Ottawa, Ontario)

Longitude (x)	Latitude (y)	Station Name	Climate ID	Date/Time	Year	Month	Day	Data Quality	Max Temp (°C)	Max Temp Flag	Min Temp (°C)	Min Temp Flag	Mean Temp (°C)	Mean Temp Flag	Heat Deg Days (°C)	Heat Deg Days Flag	Cool Deg Days (°C)	Cool Deg Days Flag	Total Rain (mm)	Total Rain Flag	Total Snow (cm)	Total Snow Flag	Total Precip (mm)	Total Precip Flag	Snow on Grnd (cm)	Snow on Grnd Flag	Dir of Max Gust (10s deg)	Dir of Max Gust Flag	Spd of Max Gust (km/h)	Spd of Max Gust Flag
-75.67	45.32	OTTAWA INTL A	6106001	4/26/2024	2024	4	26		14.3		-2.8		5.8		12.2		0		0		0		0					M		M
-75.67	45.32	OTTAWA INTL A	6106001	4/27/2024	2024	4	27		19.9		2		11		7		0		2.9		0		2.9				16		46	
-75.67	45.32	OTTAWA INTL A	6106001	4/28/2024	2024	4	28		21.4		7.4		14.4		3.6		0		3.7		0		3.7				35		47	
-75.67	45.32	OTTAWA INTL A	6106001	4/29/2024	2024	4	29		11.6		4.9		8.3		9.7		0		3.2		0		3.2				8		49	
-75.67	45.32	OTTAWA INTL A	6106001	4/30/2024	2024	4	30		8.1		5.5		6.8		11.2		0		14.1		0		14.1				7		48	
-75.67	45.32	OTTAWA INTL A	6106001	5/1/2024	2024	5	1		15.5		5.3		10.4		7.6		0		1.2		0		1.2					M		M
-75.67	45.32	OTTAWA INTL A	6106001	5/2/2024	2024	5	2		19		5.8		12.4		5.6		0		0		0		0				28		37	
-75.67	45.32	OTTAWA INTL A	6106001	5/3/2024	2024	5	3		19.4		7		13.2		4.8		0		0	T	0		0	T			10		35	
-75.67	45.32	OTTAWA INTL A	6106001	5/4/2024	2024	5	4		23.6		11.8		17.7		0.3		0		0	T	0		0	T			13		37	
-75.67	45.32	OTTAWA INTL A	6106001	5/5/2024	2024	5	5		16		11		13.5		4.5		0		12.4		0		12.4				18		42	
-75.67	45.32	OTTAWA INTL A	6106001	5/6/2024	2024	5	6		21.1		7.7		14.4		3.6		0		0		0		0				27		43	
-75.67	45.32	OTTAWA INTL A	6106001	5/7/2024	2024	5	7		21.7		5.9		13.8		4.2		0		0		0		0				30		33	
-75.67	45.32	OTTAWA INTL A	6106001	5/8/2024	2024	5	8		14.6		6.7		10.7		7.3		0		11		0		11				8		45	
-75.67	45.32	OTTAWA INTL A	6106001	5/9/2024	2024	5	9			M		M		M		M		M	0		0		0				1		37	
-75.67	45.32	OTTAWA INTL A	6106001	5/10/2024	2024	5	10		17.6		5.1		11.4		6.6		0		0		0		0				8		33	
-75.67	45.32	OTTAWA INTL A	6106001	5/11/2024	2024	5	11		17.7		4.6		11.2		6.8		0		1.7		0		1.7				12		42	
-75.67	45.32	OTTAWA INTL A	6106001	5/12/2024	2024	5	12		16.8		8.5		12.7		5.3		0		7.8		0		7.8					M		M
-75.67	45.32	OTTAWA INTL A	6106001	5/13/2024	2024	5	13		19.1		8.6		13.9		4.1		0		0.3		0		0.3				20		51	
-75.67	45.32	OTTAWA INTL A	6106001	5/14/2024	2024	5	14		21.4		12.8		17.1		0.9		0		4.9		0		4.9				19		32	
-75.67	45.32	OTTAWA INTL A	6106001	5/15/2024	2024	5	15		20		10.9		15.5		2.5		0		0.2		0		0.2				1		31	
-75.67	45.32	OTTAWA INTL A	6106001	5/16/2024	2024	5	16		23.6		11.8		17.7		0.3		0		0		0		0					M		M
-75.67	45.32	OTTAWA INTL A	6106001	5/17/2024	2024	5	17		24.2		12.6		18.4		0		0.4		0.8		0		0.8				17		31	
-75.67	45.32	OTTAWA INTL A	6106001	5/18/2024	2024	5	18		24.2		13		18.6		0		0.6		0	T	0		0	T				M		M
-75.67	45.32	OTTAWA INTL A	6106001	5/19/2024	2024	5	19		26.8		11.1		19		0		1		0		0		0					M		M
-75.67	45.32	OTTAWA INTL A	6106001	5/20/2024	2024	5	20		28.7		15.7		22.2		0		4.2		0		0		0				25		31	
-75.67	45.32	OTTAWA INTL A	6106001	5/21/2024	2024	5	21		24.2		15.5		19.9		0		1.9		17.4		0		17.4				23		58	
-75.67	45.32	OTTAWA INTL A	6106001	5/22/2024	2024	5	22		30.6		14.6		22.6		0		4.6		0		0		0				20		50	
-75.67	45.32	OTTAWA INTL A	6106001	5/23/2024	2024	5	23		25.2		15.4		20.3		0		2.3		0.4		0		0.4				24		52	
-75.67	45.32	OTTAWA INTL A	6106001	5/24/2024	2024	5	24		17.6		8.7		13.2		4.8		0		0	T	0		0	T			30		54	
-75.67	45.32	OTTAWA INTL A	6106001	5/25/2024	2024	5	25		19		6.9		13		5		0		0.2		0		0.2					M		M
-75.67	45.32	OTTAWA INTL A	6106001	5/26/2024	2024	5	26		21.9		13.2		17.6		0.4		0		0		0		0					M		M
-75.67	45.32	OTTAWA INTL A	6106001	5/27/2024	2024	5	27		23.6		16.1		19.9		0		1.9		39.3		0		39.3				14		58	
-75.67	45.32	OTTAWA INTL A	6106001	5/28/2024	2024	5	28		19.7		12.3		16		2		0		0.5		0		0.5				27		45	
-75.67	45.32	OTTAWA INTL A	6106001	5/29/2024	2024	5	29		17.3		7.1		12.2		5.8		0		0		0		0				30		39	
-75.67	45.32	OTTAWA INTL A	6106001	5/30/2024	2024	5	30		20.2		5.7		13		5		0		0		0		0				32		45	
-75.67	45.32	OTTAWA INTL A	6106001	5/31/2024	2024	5	31		25.1		6.3		15.7		2.3		0		0		0		0				28		42	
-75.67	45.32	OTTAWA INTL A	6106001	6/1/2024	2024	6	1		27.4		10.6		19		0		1		0		0		0					M		M
-75.67	45.32	OTTAWA INTL A	6106001	6/2/2024	2024	6	2		26.2		11.6		18.9		0		0.9		0		0		0					M		M
-75.67	45.32	OTTAWA INTL A	6106001	6/3/2024	2024	6	3		28.6		11.9		20.3		0		2.3		0		0		0					M		M
-75.67	45.32	OTTAWA INTL A	6106001	6/4/2024	2024	6	4		29.8		13.2		21.5		0		3.5		0		0		0				21		32	
-75.67	45.32	OTTAWA INTL A	6106001	6/5/2024	2024	6	5		31.4		17.8		24.6		0		6.6		0		0		0				22		31	
-75.67	45.32	OTTAWA INTL A	6106001	6/6/2024	2024	6	6		22.8		15.2		19		0		1		44.1		0		44.1				30		56	
-75.67	45.32	OTTAWA INTL A	6106001	6/7/2024	2024	6	7		19.1		13.3		16.2		1.8		0		10		0		10				26		36	
-75.67	45.32	OTTAWA INTL A	6106001	6/8/2024	2024	6	8		20.9		12.8		16.9		1.1		0		3.5		0		3.5				28		47	
-75.67	45.32	OTTAWA INTL A	6106001	6/9/2024	2024	6	9		19.8		12.8		16.3		1.7		0		6.8		0		6.8				31		55	
-75.67	45.32	OTTAWA INTL A	6106001	6/10/2024	2024	6	10		14.6		9.5		12.1		5.9		0		0.4		0		0.4				29		49	
-75.67	45.32	OTTAWA INTL A	6106001	6/11/2024	2024	6	11		16.1		8.9		12.5		5.5		0		0		0		0					M		M
-75.67	45.32	OTTAWA INTL A	6106001	6/12/2024	2024	6	12		21.5		12.5		17		1		0		0		0		0					M		M
-75.67	45.32	OTTAWA INTL A	6106001	6/13/2024	2024	6	13		26.3		10.1		18.2		0		0.2		10.6		0		10.6				29		63	
-75.67	45.32	OTTAWA INTL A	6106001	6/14/2024	2024	6	14		22.9		11.7		17.3		0.7		0		0		0		0				29		48	
-75.67	45.32	OTTAWA INTL A	6106001	6/15/2024	2024	6	15		19.3		7.6		13.5		4.5		0		0		0		0				31		55	
-75.67	45.32	OTTAWA INTL A	6106001	6/16/2024	2024	6	16		21.1		5.8		13.5		4.5		0		0		0		0					M		M
-75.67	45.32	OTTAWA INTL A	6106001	6/17/2024	2024	6	17		30.2		14.2		22.2		0		4.2		1.1		0		1.1				21		33	
-75.67	45.32	OTTAWA INTL A	6106001	6/18/2024	2024	6	18		32.5		19.9		26.2		0		8.2		0		0		0				18		32	
-75.67	45.32	OTTAWA INTL A	6106001	6/19/2024	2024	6	19		33.7		21.6		27.7		0		9.7		0		0		0				23		42	
-75.67	45.32	OTTAWA INTL A	6106001	6/20/2024	2024	6	20		30.1		18.9		24.5		0		6.5		1.4		0		1.4				27		39	
-75.67	45.32	OTTAWA INTL A	6106001	6/21/2024	2024	6	21		21.9		17.6		19.8		0		1.8		0	T	0		0	T				M		M
-75.67	45.32	OTTAWA INTL A	6106001	6/22/2024	2024	6	22		21.1		16.4		18.8		0		0.8		3.2		0		3.2					M		M
-75.67	45.32	OTTAWA INTL A	6106001	6/23/2024	2024	6	23		27.2		15.7		21.5		0		3.5		33.3		0		33.3				27		50	
-75.67	45.32	OTTAWA INTL A	6106001	6/24/2024	2024	6	24		26.6		14.6		20.6		0		2.6		15.7		0		15.7				34		50	
-75.67	45.32	OTTAWA INTL A	6106001	6/25/2024	2024	6	25		27.3		15.6		21.5		0		3.5		0	T	0		0	T			21		54	
-75.67	45.32	OTTAWA INTL A	6106001	6/26/2024	2024	6	26		26.8		14.4		20.6		0		2.6		13.3		0		13.3				29		49	
-75.67	45.32	OTTAWA INTL A	6106001	6/27/2024	2024	6	27		19.3		9.1		14.2		3.8		0		0	T	0		0	T			28		58	
-75.67	45.32	OTTAWA INTL A	6106001	6/28/2024	2024	6	28		24		6.5		15.3		2.7		0		0		0		0				22		37	
-75.67	45.32	OTTAWA INTL A	6106001	6/29/2024	2024	6	29		22.2		16.5		19.4		0		1.4		5.9		0		5.9				21		42	
-75.67	45.32	OTTAWA INTL A	6106001	6/30/2024	2024	6	30		25.5		15		20.3		0		2.3		0.2		0		0.2				30		50	
-75.67	45.32	OTTAWA INTL A	6106001	7/1/2024	2024	7	1		25.6		12.8		19.2		0		1.2		0		0		0				34		37	
-75.67	45.32	OTTAWA INTL A	6106001	7/2/2024	2024	7	2		27.6		11.8		19.7		0		1.7		0		0		0					M		M
-75.67	45.32	OTTAWA INTL A	6106001	7/3/2024	2024	7	3		28.2		18		23.1		0		5.1		6.4		0		6.4				18		40	
-75.67	45.32	OTTAWA INTL A	6106001	7/4/2024	2024	7	4		30.1		18		24.1		0		6.1		0		0		0				25		34	
-75.67	45.32	OTTAWA INTL A	6106001	7/5/2024	2024	7	5		29.4		19.7		24.6		0		6.6		0	T	0		0	T			36		42	
-75.67	45.32	OTTAWA INTL A	6106001	7/6/2024	2024	7	6		28		17.7		22.9		0		4.9		47.2		0		47.2				34		50	
-75.67	45.32	OTTAWA INTL A	6106001	7/7/2024	2024	7	7		27.4		18.1		22.8		0		4.8		0		0		0					M		M
-75.67	45.32	OTTAWA INTL A	6106001	7/8/2024	2024	7	8		28.8		17.7		23.3		0		5.3		0		0		0				18		33	

-75.67	45.32	OTTAWA INTL A	6106001	7/9/2024	2024	7	9		29		18.6		23.8		0		5.8		1.1		0		1.1				33		52	
-75.67	45.32	OTTAWA INTL A	6106001	7/10/2024	2024	7	10		21.3		17.7		19.5		0		1.5		15.8		0		15.8				5		39	
-75.67	45.32	OTTAWA INTL A	6106001	7/11/2024	2024	7	11		21.7		18.4		20.1		0		2.1		17.1		0		17.1				3		35	
-75.67	45.32	OTTAWA INTL A	6106001	7/12/2024	2024	7	12		27.5		18.7		23.1		0		5.1		2.3		0		2.3				22		32	
-75.67	45.32	OTTAWA INTL A	6106001	7/13/2024	2024	7	13		29		19.4		24.2		0		6.2		0.7		0		0.7					M		M
-75.67	45.32	OTTAWA INTL A	6106001	7/14/2024	2024	7	14		29.9		16.9		23.4		0		5.4		0		0		0				21		37	
-75.67	45.32	OTTAWA INTL A	6106001	7/15/2024	2024	7	15		30.5		18.8		24.7		0		6.7		17.6		0		17.6				31		59	
-75.67	45.32	OTTAWA INTL A	6106001	7/16/2024	2024	7	16		25.9		19.1		22.5		0		4.5		0.3		0		0.3				21		31	
-75.67	45.32	OTTAWA INTL A	6106001	7/17/2024	2024	7	17		27.7		15.6		21.7		0		3.7		7.7		0		7.7				29		44	
-75.67	45.32	OTTAWA INTL A	6106001	7/18/2024	2024	7	18		19.7		13.1		16.4		1.6		0		0		0		0				30		44	

Attachment B3: Bat Data Survey Results

SiteID	Start Date	End Date	# Recording Nights	EPTFUS	LASBOR	LASCIN	LASNOC	LASNOC/ EPTFUS	MYOLUC	Myo sp	PERSUB	HighF	LowF	NoID	Total
				Big Brown Bat	Eastern Red Bat	Hoary Bat	Silver-haired Bat	Silver-haired/ Big Brown Bat	Little Brown Bat	myotis sp	Tri-colored Bat				
B1	1-Jun-24	19-Jun-24	18	12		10	52	63					82	62	**281**
B2	1-Jun-24	19-Jun-24	18	1079	4	1	8	71	173	1	72	40	111	344	**1904**
B3	1-Jun-24	19-Jun-24	18	340	1		1	65	26	4		22	36	68	**563**
B4	1-Jun-24	19-Jun-24	18	16	1	1	1	20	3		1	10	51	23	**127**
B5	1-Jun-24	19-Jun-24	18	61	1		1	33		1		11	46	40	**194**
B6	19-Jun-24	8-Jul-24	19	1612	2		2	68	13	1	34	53	52	156	**1993**
B7	19-Jun-24	8-Jul-24	19	537	3	97	342	35				2	161	271	**1448**
B8	19-Jun-24	8-Jul-24	19	1			259	3					237	38	**538**
B9	19-Jun-24	8-Jul-24	19			2	3	5					25		**35**

Appendix C Photographic Log

Photo 1 Facing southwest in OAGM1/OAGM1 (agricultural fields) in April.

Photo 2 Facing east at existing conditions at edge of SWDM4-5 (Poplar Mineral Deciduous Swamp) in August.

Photo 3 Existing conditions facing northeast in SWDM4-5 (Poplar Mineral Deciduous Swamp) in April.

Photo 4 Existing conditions facing north in SWDM4-5 (Poplar Mineral Deciduous Swamp) in April.

Photo 5 Existing conditions facing southwest at candidate bat roost tree.

Photo 6 Existing conditions facing southwest in June within SWDM3-1(Red Maple Mineral Deciduous Swamp).

Photo 7 Existing conditions facing southwest at candidate bat roosting tree in SWDM3-1(Red Maple Mineral Deciduous Swamp).

Photo 8 Existing conditions facing down at Black Ash (*Fraxinus nigra*) in SWDM3-1 (Red Maple Mineral Deciduous Swamp).

Photo 9 Facing northeast at existing conditions within SWDM4-5 (Poplar Mineral Deciduous Swamp) in April.

Photo 10 Existing conditions facing south along William McEwan Drive in October (Facing CVC 4/FODM8-1).

Photo 11 Facing north at existing conditions at ditch line and culvert on the west side of William McEwan Drive.

Appendix D Significant Wildlife Habitat Assessment

Appendix D Significant Wildlife Habitat Screening for the Study Area

Habitat Type	Indicator Species	ELC Ecosite Code	Habitat Criteria	Assessment Details
Seasonal Concentration Areas of Animals				
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	CUM1 CUT1 • Plus evidence of annual spring flooding from melt water or run-off within these Ecosites.	Candidate SWH Criteria • Fields with sheet water during Spring (mid March to May). • Fields flooding during spring melt and run-off provide important invertebrate foraging habitat for migrating waterfowl. • Agricultural fields with waste grains are commonly used by waterfowl, these are not considered SWH. Confirmed SWH Criteria Studies carried out and verified presence of an annual concentration of any listed species, evaluation methods to follow "Bird and Bird Habitats: Guidelines for Wind Power Projects." • Any mixed species aggregations of 100 or more individuals required. • The area of the flooded field ecosite habitat plus a 100-300m radius buffer dependant on local site conditions and adjacent land use is the significant wildlife habitat. • Annual use of habitat is documented from information sources or field studies (annual use can be based on studies or determined by past surveys with species numbers and dates).	**Unlikely** – Suitable habitat is not considered absent within the Study Area.
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; Red-breasted Merganser; Brant; Canvasback; Ruddy Duck	MAM1, MAM2, MAM3, MAM4, MAM5, MAM6, MAS1, MAS2, MAS3, SAS1, SAM1, SAF1, SWD1, SWD2, SWD3, SWD4, SWD5, SWD6, SWD7	Candidate SWH Criteria • Ponds, marshes, lakes, bays, coastal inlets, and watercourses used during migration. Sewage treatment ponds and storm water 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) Confirmed SWH Criteria Studies carried out and verified presence of: • Aggregations of 100 or more individuals of listed species for 7 days, results in > 700 waterfowl use days. • Areas with annual staging of ruddy ducks, canvasbacks, and redheads are SWH • The combined area of the ELC ecosites and a 100m radius area is the SWH • Wetland area and shorelines associated with sites identified within the SWHTG Appendix K are significant wildlife habitat. • Evaluation methods to follow "Bird and Bird Habitats: Guidelines for Wind Power Projects" • Annual Use of Habitat is Documented from Information Sources or Field Studies (Annual can be based on completed studies or determined from past surveys with species numbers and dates recorded).	**Unlikely** – Suitable habitat is not considered absent within the Study Area.
Shorebird Migratory Stopover Area	Greater Yellowlegs; Lesser Yellowlegs; Marbled Godwit; Hudsonian Godwit; Black-bellied Plover; American Golden-Plover; Semipalmated Plover; Solitary Sandpiper; Spotted Sandpiper; Semipalmated Sandpiper; Pectoral Sandpiper; White-rumped Sandpiper; Baird's Sandpiper; Least Sandpiper; Purple Sandpiper; Stilt Sandpiper ; Short-billed Dowitcher; Red-necked Phalarope ; Whimbrel; Ruddy Turnstone; Sanderling; Dunlin	BBO1, BBO2, BBS1, BBS2, BBT1, BBT2, SDO1, SDS2, SDT1, MAM1, MAM2, MAM3, MAM4, MAM5	Candidate SWH Criteria • 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. Storm water retention ponds and sewage lagoons are not considered SWH. Confirmed SWH Criteria Studies confirming: • Presence of 3 or more of listed species and > 1000 shorebird use days during spring or fall migration period. (shorebird use days are the accumulated number of shorebirds counted per day over the course of the fall or spring migration period) • Whimbrel stop briefly (<24 hrs) during spring migration, any site with >100 Whimbrel used for 3 years or more is significant. • The area of significant shorebird habitat includes the mapped ELC ecosites plus a 100m radius area • Evaluation methods to follow "Bird and Bird Habitats: Guidelines for Wind Power Projects"	**Unlikely** – Suitable habitat is considered absent within the Study Area.

Habitat Type	Indicator Species	ELC Ecosite Code	Habitat Criteria	Assessment Details
Raptor Wintering Area	Rough-legged Hawk, Red-tailed Hawk, Northern Harrier, American Kestrel, Snowy Owl Special Concern: Short-eared Owl	Combination of ELC Community Series; need to have present one Community Series from each land class; Forest: FOD, FOM, FOC. Upland: CUM; CUT; CUS; CUW.	Candidate SWH Criteria • The habitat provides a combination of fields and woodlands that provide roosting, foraging and resting habitats for wintering raptors. • Raptor wintering sites need to be > 20 ha with a combination of forest and upland • Least disturbed sites, idle/fallow or lightly grazed field/meadow with adjacent woodlands Confirmed SWH Criteria • Studies confirm the use of these habitats by: • One or more Short-eared Owls or; • At least 10 individuals and two spp.of the listed spp. • To be significant a site must be used regularly (3 in 5 years) for a minimum of 20 days by the above number of birds. • Evaluation methods to follow “Bird and Bird Habitats: Guidelines for Wind Power Projects”	**Unlikely** – Suitable habitat is considered absent within the Study Area. The wooded areas within the Study Area are primarily swamp communities and do not contain the requisite forest ELC communities.
Bat Hibernacula	Big Brown Bat; Tri-coloured Bat/Eastern Pipistrelle; Eastern Small-footed Myotis Endangered (ESA, 2007) Little Brown Myotis Northern Myotis	Bat Hibernacula may be found in these ecosites: CCR1, CCR2, CCA1, CCA2 Note: buildings are not considered to be SWH	Candidate SWH Criteria • Hibernacula may be found in abandoned caves, horizontal mine shafts (adits), abandoned underground foundations and areas of limestone bedrock with solution channels known as Karsts. The locations and site characteristics of bat hibernacula are relatively poorly known. Confirmed SWH Criteria • All sites with confirmed hibernating bats are SWH. • The area includes 1000m radius around the entrance of the hibernaculum. • Studies are to be conducted during the peak swarming period (Aug. – Sept.). Surveys should be conducted following methods outlined in the “Guideline for Wind Power Projects Potential Impacts to Bats and Bat Habitats” • If a SWH is determined for Bat Hibernacula then Movement Corridors are to be considered	**Unlikely** – Suitable habitat is considered absent within the Study Area.
Bat Maternity Colonies	Big Brown Bat Endangered (ESA, 2007) Little Brown Myotis Northern Myotis Silver-haired Bat	Maternity colonies considered SWH are found in forested Ecosites. All ELC Ecosites in ELC Community Series: FOD, FOM	Candidate SWH Criteria • Maternity colonies can be found in tree cavities, vegetation and often in buildings (buildings are not considered to be SWH). • Maternal colonies can be found in tree cavities, vegetation and often in buildings (although buildings are not considered SWH). Note: Maternity roosts are not found in caves and mines in Ontario. • Maternity colonies located in Mature (dominant trees > 80yrs old) deciduous or mixed forest stands with >10/ha large diameter (>25cm dbh) wildlife trees. • Female Bats prefer wildlife trees (snags) of decay class 1 or 2 or class 2-4, can be living or with bark mostly intact. • Northern Myotis prefer contiguous tracts of older forest cover for foraging and roosting in snags and trees • 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 Confirmed SWH Criteria Maternity colonies with confirmed use by: • >20 Northern Myotis • >10 Big Brown Bats • >20 Little Brown Myotis • >5 Adult female Silver-haired Bats • The area of the habitat includes the entire woodland or the forest stand ELC Ecosite containing the maternity colony. • Evaluation methods for maternity colonies should be conducted following methods outlined in the “Guideline for Wind Power Projects Potential Impacts to Bats and Bat Habitats”	**CONFIRMED** – Acoustic bat surveys were completed and confirmed the presence of several bat species, including Big Brown Bat, within the Project Area. This habitat type will be discussed under SAR as all species, except Big Brown Bat, were recorded and have similar impacts/mitigation.

Habitat Type	Indicator Species	ELC Ecosite Code	Habitat Criteria	Assessment Details
Turtle Wintering Areas	Midland Painted Turtle Special Concern (ESA, 2007) Northern Map Turtle Snapping Turtle	Snapping and Midland Painted turtles, ELC Community Classes; SW, MA, OA and SA, ELC Community Series; FEO and BOO Northern Map Turtle - Open Water areas such as deeper rivers or streams and lakes with current can also be used as over-wintering habitat.	Candidate SWH Criteria • For most turtles, wintering areas are in the same general area as their core habitat. Water has to be deep enough not to freeze and have soft mud substrates. • Over-wintering sites are permanent water bodies, large wetlands, and bogs or fens with adequate Dissolved Oxygen. Confirmed SWH Criteria • Presence of 5 or more over-wintering Midland Painted Turtles is significant. • One or more Northern Map Turtle or Snapping Turtle over-wintering within a wetland is significant. • The mapped ELC ecosite area with the over wintering turtles is the SWH. If the hibernation site is within a stream or river, the deep-water pool where the turtles are over wintering is the SWH. • Over wintering areas may be identified by searching for congregations (Basking Areas) of turtles on warm, sunny days during the fall (Sep. – Oct) or spring (Mar. - April). Congregation of turtles is more common where wintering areas are limited and therefore significant.	**Unlikely** – It is unlikely that turtles will overwinter in the swamp communities as there are no open water habitats within the Project Area. There is a dugout pond located further west of the approximate Project Footprint, although it is anticipated that turtles would overwinter closer to that area.
Reptile Hibernaculum	Eastern Gartersnake, Northern Watersnake, Northern Red-bellied Snake, Northern Brownsnake, Smooth Green Snake, Northern Ring-necked Snake Special Concern (ESA, 2007) Milksnake Eastern Ribbonsnake Five-lined Skink	For all snakes, habitat may be found in any ecosite in central Ontario other than very wet ones. Talus, Rock Barren, Crevice and Cave, and Alvar sites may be directly related to these habitats. Observations of congregations of snakes on sunny warm days in the spring or fall is a good indicator. The existence of rock piles or slopes, stone fences, and crumbling foundations assist in identifying candidate SWH. For Five-lined Skink, ELC Community Series of FOD and FOM and Ecosites: FOC1, FOC3	Candidate SWH Criteria • For snakes, hibernation takes place in sites located below frost lines in burrows, rock crevices and other natural locations. 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. • Five-lined Skink prefer mixed forests with rock outcrop openings providing cover rock overlaying granite bedrock with fissures. Confirmed SWH Criteria Studies confirming: • Presence of snake hibernacula used by a minimum of five individuals of a snake sp. or; individuals of two or more snake spp. • Congregations of a minimum of five individuals of a snake sp. or; individuals of two or more snake spp. near potential hibernacula (e.g. foundation or rocky slope) on sunny warm days in Spring (Apr/May) and Fall (Sept/Oct). • Note: If there are Special Concern species present then the site is SWH. • Note: Sites for hibernation possess specific habitat parameters (e.g. temperature, humidity, etc.) and consequently are used annually, often by many of the same individuals of a local population. Other critical life processes (e.g. mating) often take place in close proximity to hibernacula. As such, the feature in which the hibernacula is located plus a 30 m radius buffer is the SWH. • Presence of any active hibernaculum for skink is significant. The ELC Ecosite polygon containing the skink hibernacula is the SWH.	**CANDIDATE** – Suitable habitat has the potential to occur within the Study Area. As this habitat is difficult to confirm, mitigation measures during construction will be provided should this habitat be incidentally discovered.
Colonially – Nesting Bird Breeding Habitat (Bank and Cliff)	Bank Swallow; Cliff Swallow; Northern Rough-winged Swallow.	Eroding banks, sandy hills, borrow pits, steep slopes, and sand piles (Bank Swallow and N. Rough-winged Swallow). Cliff faces, bridge abutments, silos, barns (Cliff Swallows). Habitat found in the following ecosites: CUM1, CUT1, CUS1, BLO1, BLS1, BLT1, CLO1, CLS1, CLT1	Candidate SWH Criteria • 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, and soil or aggregate stockpiles. • Does not include a licensed/permitted Mineral Aggregate Operation. Confirmed SWH Criteria Studies confirming: • Presence of 1 or more nesting sites with 8 or more cliff swallow pairs or 50 bank swallow pairs and rough-winged swallow pairs during the breeding season. • A colony identified as SWH will include a 50m radius habitat area from the peripheral nests • Field surveys to observe and count swallow nests are to be completed during the breeding season (May-July). Evaluation methods to follow “Bird and Bird Habitats: Guidelines for Wind Power Projects”	**Unlikely** – Suitable habitat is considered absent within the Study Area. Other than Bank Swallow, which was recorded as a fly-thru, none of the requisite species were recorded during breeding bird survey.

Habitat Type	Indicator Species	ELC Ecosite Code	Habitat Criteria	Assessment Details
Colonially – Nesting Bird Breeding Habitat (Trees/Shrubs)	Great Blue Heron; Black-crowned Night Heron, Great Egret, Green Heron	SWM2, SWM3, SWM5, SWM6, SWD1, SWD2, SWD3, SWD4, SWD5, SWD6, SWD7, FET1	Candidate SWH Criteria • Nests in live or dead standing trees in wetlands, lakes, 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. Confirmed SWH Criteria Studies confirming: • Presence of 5 or more active nests of Great Blue Heron • The edge of the colony and a minimum 300m area of habitat or extent of the Forest Ecosite containing the colony or any island <15.0ha with a colony is the SWH • Confirmation of active heronries must be achieved through site visits conducted during the nesting season (April to August) or by evidence such as the presence of fresh guano, dead young and/or eggshells	**Unlikely** – Swamp communities are present in the Study Area, although none of the requisite species were recorded during breeding bird surveys.
Colonially – Nesting Bird Breeding Habitat (Ground)	Herring Gull; Great Black-backed Gull; Ring-billed Gull; Little Gull; Common Tern; Caspian Tern; Brewer's Blackbird	Any rocky island or peninsula (natural or artificial) within a lake or large river (two-lined on a 1;50,000 NTS map). Close proximity to watercourses in open fields or pastures with scattered trees or shrubs (Brewer's Blackbird) MAM1 – 6; MAS1 – 3; CUM CUT; CUS	Candidate SWH Criteria • 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 (two-lined on a 1:50,000 NTS map). • Brewers Blackbird colonies are found loosely on the ground or in low bushes in close proximity to streams and irrigation ditches within farmlands. Confirmed SWH Criteria Studies confirming: • Presence of > 25 active nests for Herring Gulls or Ring-billed Gulls, >5 active nests for Common Tern or >2 active nests for Caspian Tern • Presence of 5 or more pairs for Brewer's Blackbird. • Any active nesting colony of one or more Little Gull and Great Black-backed Gull is significant • The edge of the colony and a minimum 150m area of habitat, or the extent of the ELC ecosites containing the colony or any island <3.0ha with a colony is the SWH. • Studies would be done during May/June when actively nesting. Evaluation methods to follow "Bird and Bird Habitats: Guidelines for Wind Power Projects"	**Unlikely** – Suitable habitat is considered absent within the Study Area. Other than Caspian Tern, which was recorded as a fly-thru, none of the requisite species were recorded during breeding bird survey.
Migratory Butterfly Stopover Areas	Painted Lady, White Admiral Special Concern Monarch	Combination of ELC Community Series; need to have present one Community Series from each land class: Field: CUM, CUT, CUS Forest: FOC, FOD, FOM, CUP Anecdotally, a candidate sight for butterfly stopover will have a history of butterflies being observed.	Candidate SWH Criteria • A butterfly stopover area will be a minimum of 10 ha in size with a combination of field and forest habitat present, and will be located within 5 km of Lake Ontario • The habitat is typically a combination of field and forest, and provides the butterflies with a location to rest prior to their long migration south • The habitat should not be disturbed, fields/meadows with an abundance of preferred nectar plants and woodland edge providing shelter are requirements for this habitat • Staging areas usually provide protection from the elements and are often spits of land or areas with the shortest distance to cross the Great Lakes Confirmed SWH Criteria • The presence of Monarch Use Days (MUD) during fall migration (Aug/Oct). MUD is based on the number of days a site is used by Monarchs, multiplied by the number of individuals using the site. Numbers of butterflies can range from 100-500/day, significant variation can occur between years and multiple years of sampling should occur. • MUD of >5000 or >3000 with the presence of Painted Ladies or White Admiral's is to be considered significant	**Absent** – The Project is not within 5 km of Lake Ontario.

Habitat Type	Indicator Species	ELC Ecosite Code	Habitat Criteria	Assessment Details
Landbird Migratory Stopover Areas	All migratory songbirds. Canadian Wildlife Service Ontario website: http://www.on.ec.gc.ca/wildlife_e.html All migrant raptors species: Ontario Ministry of Natural Resources: Fish and Wildlife Conservation Act, 1997. Schedule 7: Specially Protected Birds (Raptors)	All Ecosites associated with these ELC Community Series; FOC, FOM, FOD, SWC, SWM, SWD	<u>Candidate SWH Criteria</u> • Woodlots need to be >10 ha in size and within 5 km of Lake Ontario • Woodlands <2km from Lake Ontario are more significant • Sites have a variety of habitats; forest, grassland and wetland complexes • The largest sites are more significant • Woodlots and forest fragments are important habitats to migrating birds, these features located along the shore and located within 5km of Lake Ontario are Candidate SWH <u>Confirmed SWH Criteria</u> • Use of the woodlot by >200 birds/day and with >35 spp with at least 10 bird spp. recorded on at least 5 different survey dates. This abundance and diversity of migrant bird species is considered above average and significant. • Studies should be completed during spring (Apr./May) and fall (Aug/Oct) migration using standardized assessment techniques. Evaluation methods to follow “Bird and Bird Habitats: Guidelines for Wind Power Projects	**Absent** – The Project is not within 5 km of Lake Ontario.
Deer Yarding Areas	White-tailed Deer	Note: OMNR to determine this habitat. ELC Community Series providing a thermal cover component for a deer yard would include; FOM, FOC, SWM and SWC. Or these ELC Ecosites; CUP2, CUP3, FOD3, CUT	<u>Candidate SWH Criteria</u> • Deer wintering areas or winter concentration areas (yards) are areas deer move to in response to the onset of winter snow and cold. This is a behavioural response and deer will establish traditional use areas. The yard is composed of two areas referred to as Stratum I and Stratum II. Stratum II covers the entire winter yard area and is usually a mixed or deciduous forest with plenty of browse available for food. Agricultural lands can also be included in this area. Deer move to these areas in early winter and generally, when snow depths reach 20 cm, most of the deer will have moved here. If the snow is light and fluffy, deer may continue to use this area until 30 cm snow depth. In mild winters, deer may remain in the Stratum II area the entire winter. • The Core of a deer yard (Stratum I) is located within Stratum II and is critical for deer survival in areas where winters become severe. It is primarily composed of coniferous trees (pine, hemlock, cedar, spruce) with a canopy cover of more than 60% • OMNR determines deer yards following methods outlined in “Selected Wildlife and Habitat Features: Inventory Manual" • Woodlots with high densities of deer due to artificial feeding are not significant <u>Confirmed SWH Criteria</u> No Studies Required. • Generally, there will be a history of traditional use of the yard by deer, although deer do move to other areas over the course of time if conditions in the yard change or due to societal impacts (i.e. artificial deer feeding). There may be circumstances where deer have recently moved to new areas. • Deer Yards are mapped by OMNR District offices. Locations of Core (Stratum 1) and Stratum 2 deer yards considered significant by OMNR will be available at local MNR offices. • Field investigations that record deer tracks in winter are done to confirm use (best done from an aircraft). Preferably, this is done over a series of winters to establish the boundary of the Stratum I and Stratum II yard in an "average" winter. MNR will complete these field investigations. • If a SWH is determined for Deer Wintering Area or if a proposed development is within a Stratum II yarding area then Movement Corridors are to be considered	**Absent –** There are no deer yarding areas identified by MNR within the Study Area.

Habitat Type	Indicator Species	ELC Ecosite Code	Habitat Criteria	Assessment Details
Deer Winter Congregation Areas	White-tailed Deer	All Forested Ecosites with these ELC Community Series; FOC, FOM, FOD, SWC, SWM, SWD Conifer plantations much smaller than 50 ha may also be used.	Candidate SWH Criteria • Woodlots need to be >100 ha in size. • Deer movement during winter in the southern areas of Eco-region 6E are not constrained by snow depth, however deer will annually congregate in large numbers in suitable woodlands • If deer are constrained by snow depth refer to the Deer Yarding Area habitat within Table 1.1 of this Schedule. • Large woodlots > 100ha and up to 1500 ha are known to be used annually by densities of deer that range from 0.1-1.5 deer/ha • Woodlots with high densities of deer due to artificial feeding are not significant Confirmed SWH Criteria No Studies Required. • Deer management is an MNR responsibility, deer winter congregation areas considered significant will be mapped by MNR • Use of the woodlot by white-tailed deer will be determined by MNR, all woodlots exceeding the area criteria are significant, unless determined not to be significant by MNR • Studies should be completed during winter (Jan/Feb) when >20cm of snow is on the ground using aerial survey techniques , ground or road surveys or a pellet count deer density survey.	**Absent –** There are no deer yarding areas identified by MNR within the Study Area.
Rare Vegetation Communities				
Cliffs and Talus Slopes	N/A	Any ELC Ecosite within Community Series: TAO, CLO, TAS, CLS, TAT, CLT	Candidate SWH Criteria • A Cliff is vertical to near vertical bedrock >3m in height. • A Talus Slope is rock rubble at the base of a cliff made up of coarse rocky debris • Most cliff and talus slopes occur along the Niagara Escarpment. Confirmed SWH Criteria • Confirm any ELC Vegetation Type for Cliffs or Talus Slopes	**Unlikely** – Suitable habitat is considered absent within the Study Area.
Sand Barren	N/A	ELC Ecosites: SBO1, SBS1, SBT1 Vegetation cover varies from patchy and barren to continuous meadow (SBO1), thicket-like (SBS1), or more closed and treed (SBT1). Tree cover always ≤ 60%.	Candidate SWH Criteria • Any sand barren area, no minimum size. • Sand Barrens typically are exposed sand, generally sparsely vegetated and caused by lack of moisture, periodic fires and erosion. They have little or no soil and the underlying rock protrudes through the surface. Usually located within other types of natural habitat such as forest or savannah. Vegetation can vary from patchy and barren to tree covered but less than 60%. Confirmed SWH Criteria • Sand Barrens containing any characteristic plant species should be considered significant. • ELC Ecosite Area for the sand barren is the SWH • Site must not be dominated by exotic or introduced species (<50% vegetative cover exotics)	**Unlikely** – Suitable habitat is considered absent within the Study Area.
Alvar	*Carex crawei* *Panicum philadelphicum* *Eleocharis compressa* *Scutellaria parvula* *Trichostema brachiatum*	ALO1, ALS1, ALT1, FOC1, FOC2, CUM2, CUS2, CUT2-1, CUW2	Candidate SWH Criteria • An Alvar site > 0.5 ha in size • An alvar is typically a level, mostly unfractured calcareous bedrock feature with a mosaic of rock pavements and bedrock overlain by a thin veneer of soil. The hydrology of alvars may be complex, with alternating periods of inundation and drought. Vegetation cover varies from sparse lichen-moss associations to grasslands and shrublands and comprising a number of characteristic or indicator plant. Undisturbed alvars can be phyto- and zoogeographically diverse, supporting many uncommon or are relict plant and animals species. Vegetation cover varies from patchy to barren with a less than 60% tree cover. Confirmed SWH Criteria • Field studies identify one or more of the 6E Plant Indicator species • Site must not be dominated by exotic or introduced species (< 50%). The alvar must be in excellent condition and fit in with surrounding landscape with few conflicting land uses	**Unlikely** – Suitable habitat is considered absent within the Study Area.

Habitat Type	Indicator Species	ELC Ecosite Code	Habitat Criteria	Assessment Details
Old Growth Forest	N/A	Forest Community Series: FOD, FOC, FOM	Candidate SWH Criteria • Stands 30 ha or greater in size or with at least 10 ha interior habitat assuming 100 m buffer at edge of forest • Old Growth forests are characterized by exhibiting the greatest number of old-growth characteristics, such as mature forest with large trees that has been undisturbed. Heavy mortality or turnover of over-storey trees resulting in a mosaic of gaps that encourage development of a multi-layered canopy and an abundance of snags and downed woody debris. Confirmed SWH Criteria Field Studies will determine: • If dominant trees species of the ecosite are >140 years old, then stand is Significant Wildlife Habitat • The stand will have experienced no recognizable forestry activities • The area of Forest Ecosites combined to make up the stand is the SWH	**Unlikely** – Suitable habitat is considered absent within the Study Area.
Savannah	N/A	TPS1, TPS2, TPW1, TPW2, CUS2	Candidate SWH Criteria • No minimum size to site though remnant sites such as railway right of ways are not considered to be SWH • Site must be restored or a natural site • A Savannah is related to tallgrass prairie, but includes trees, which vary from 25 – 60% canopy cover. The open areas between the trees are dominated by prairie species, while forest species are found beneath the tree canopy. Confirmed SWH Criteria • Field studies confirm one or more of the Savannah indicator species listed in SWHTG Appendix N should be present. • Note: Savannah plant spp. list from Ecoregion 6E should be used • Area of the ELC Ecosite is the SWH. • Site must not be dominated by exotic or introduced species.	**Unlikely** – Suitable habitat is considered absent within the Study Area.
Tallgrass Prairie	N/A	TPO1, TPO2	Candidate SWH Criteria • No minimum size to site. • Site must be restored or a natural site. Remnant sites such as railway right of ways are not considered to be SWH. • Tallgrass Prairie is an open vegetation with less than < 25% tree cover, and dominated by prairie species, including grasses. Confirmed SWH Criteria • Field studies confirm one or more of the Tallgrass Prairie Indicator Species listed (used Eco-Region 6E in Appendix N) is a SWH. • Area of the ELC Ecosite is the SWH. • Site must not be dominated (e.g < 50%) by exotic or introduced species.	**Unlikely** – Suitable habitat is considered absent within the Study Area.
Other Rare Vegetation Communities	N/A	Provincially Rare S1, S2 and S3 vegetation communities are listed in Appendix M of the SWHTG. Any ELC Ecosite Code that has a possible ELC Vegetation Type that is Provincially Rare is Candidate SWH.	Candidate SWH Criteria • Rare Vegetation Communities may include beaches, fens, forest, marsh, barrens, dunes and swamps. • 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. Confirmed SWH Criteria • Field studies should confirm if an ELC Vegetation Type is a rare vegetation community based on listing within Appendix M of SWHTG • Area of the ELC Vegetation Type polygon is the SWH.	**Unlikely** – Suitable habitat is considered absent within the Study Area.

Habitat Type	Indicator Species	ELC Ecosite Code	Habitat Criteria	Assessment Details
Specialized Habitat for Wildlife				
Waterfowl Nesting Area	American Black Duck, Northern Pintail, Northern Shoveler Gadwall, Blue-winged Teal, Green-winged Teal, Wood Duck, Hooded Merganser, Mallard	All upland habitats located adjacent to these wetland ELC Ecosites are Candidate SWH: MAS1, MAS2, MAS3, SAS1, SAM1, SAF1, MAM1, MAM2, MAM3, MAM4, MAM5, MAM6, SWT1, SWT2, SWD1, SWD2, SWD3, SWD4 Note: includes adjacency to Provincially Significant Wetlands (PSWs).	Candidate SWH Criteria • A waterfowl nesting area extends 120 m from a wetland (> 0.5 ha)) or a wetland (>0.5ha) and any small wetlands (0.5ha) within 120m or a cluster of 3 or more small (<0.5 ha) wetlands within 120 m of each individual wetland where waterfowl nesting is known to occur. • Upland areas should be at least 120 m wide so that predators such as raccoons, skunks, and foxes have difficulty finding nests. • Wood Ducks, and Hooded Mergansers utilize large diameter trees (> 40 cm) in woodlands for cavity nest sites. Confirmed SWH Criteria Studies confirmed: • Presence of 3 or more nesting pairs for listed species excluding Mallards, or; • Presence of 10 or more nesting pairs for listed species including Mallards. • Any active nesting site of an American Black Duck is considered significant. • Nesting studies should be completed during the spring breeding season (April - June). Evaluation methods to follow “Bird and Bird Habitats: Guidelines for Wind Power Projects” • A field study confirming waterfowl nesting habitat will determine the boundary of the waterfowl nesting habitat for the SWH, this may be greater or less than 120 m from the wetland and will provide enough habitat for waterfowl to successfully nest.	**Unlikely** – Swamp communities are present within the Study Area, including Project Area, although no nests were recorded during field investigations. Further, none of the requisite species were recorded during breeding bird surveys, except Blue-winged Teal which was a fly-over.
Bald Eagle and Osprey Nesting, Foraging and Perching Habitat	Osprey Bald Eagle	ELC Forest Community Series: FOD, FOM, FOC, SWD, SWM and SWC directly adjacent to riparian areas – rivers, lakes, ponds and wetlands	Candidate SWH Criteria • Nests are associated with lakes, ponds, rivers or wetlands along treed shorelines, islands, or on structures over water. • Osprey nests are usually at the top of 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 such as telephone or hydro poles will not normally be considered as SWH, however the OMNR District retains discretion regarding significance of constructed nesting platforms. Confirmed SWH Criteria Studies confirm: • One or more active Osprey or Bald Eagle nests in an area. • Considered SWH if the nest has been used or suspected of use within the past 5 years; unless documented that the nest and other associated nests in the nesting area have been unoccupied within the past 3 consecutive years by Osprey or Bald Eagle: • Some species have more than one nest in a given area and priority is given to the primary nest with alternate nests included within the area of the SWH. • For an Osprey, the active nest and a 300 m radius around the nest or the contiguous woodland stand is the SWH, maintaining undisturbed shorelines with large trees within this area is important • For a Bald Eagle the active nest and a 400-800 m radius around the nest is the SWH. Area of the habitat from 400-800m is dependent on site lines from the nest to the development and inclusion of perching and foraging habitat. • Observational studies to determine nest site use, perching sites and foraging areas need to be done from mid March to mid August. Evaluation methods to follow “Bird and Bird Habitats: Guidelines for Wind Power Projects”	**Unlikely** – Swamp communities are present within the Study Area, including Project Area, although no nests were recorded during field investigations. Bald Eagle was recorded as a fly-thru only during the breeding bird surveys, although no stick nests were recorded.

Habitat Type	Indicator Species	ELC Ecosite Code	Habitat Criteria	Assessment Details
Woodland Raptor Nesting Habitat	Northern Goshawk, Cooper's Hawk, Sharp-shinned Hawk, Red-shouldered Hawk, Barred Owl, Broad-winged Hawk	May be found in all forested ELC Ecosites. May also be found in SWC, SWM, SWD and CUP3	Candidate SWH Criteria • All natural or conifer plantation woodland/forest stands >30ha with 10ha of interior habitat. • 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 Coopers Hawk nest along forest edges sometimes on peninsulas or small off-shore islands. • In disturbed sites, nests may be used again, or a new nest may be in close proximity to old nest. Confirmed SWH Criteria Studies confirm: • Presence of 1 or more occupied nests from species list is considered significant. • Red-shouldered Hawk and Northern Goshawk – A 400m radius around the nest or 28 ha of suitable habitat is the SWH. • Barred Owl – A 200m radius around the nest is the SWH. • Broad-winged Hawk, Coopers Hawk, Great Horned Owl, Red-tailed Hawk – A 100m radius around the nest is the SWH. • Sharp-Shinned Hawk – A 50m radius around the nest is the SWH. • Conduct field investigations from mid-March to end of May. The use of call broadcasts can help in locating territorial (courting/nesting) raptors and facilitate the discovery of nests by narrowing down the search area.	**Unlikely** – Swamp communities are present within the Study Area, including Project Area, although no nests were recorded during field investigations. None of the requisite species were recorded during breeding bird surveys.
Turtle Nesting Areas	Painted Turtle Special Concern (ESA, 2007) Northern Map Turtle Snapping Turtle **Rationale;** These habitats are rare and when identified will often be the only breeding site for local populations of turtles.	Exposed mineral soil (sand or gravel) areas adjacent (<100m) or within the following ELC Ecosites: MAM2, MAM3, MAM4, MAM5, MAM6, MAM1, MAM2, MAM3, SAS1, SAM1, SAF1, BOO1, FEO1	Candidate SWH Criteria • 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. Confirmed SWH Criteria Studies confirm: • Presence of 5 or more nesting Midland Painted Turtles is a SWH. • The area or collection of sites within an area of exposed mineral soils where the turtles nest, plus a radius of 30-100m around the nesting area dependant on slope, riparian vegetation and adjacent land use is the SWH. • Travel routes from wetland to nesting area are to be considered within the SWH. • One or more Northern Map Turtle or Snapping Turtle nesting is a SWH. • Any confirmed active skink nest site and a 30 m radius around it is significant • Field investigations should be conducted in prime nesting season typically late spring to early summer.	**Unlikely** – There are no marshes within the Study Area; uitable habitat is considered absent.
Seeps and Springs	Selected wildlife species that utilize this feature: Wild Turkey, Ruffed Grouse, Spruce Grouse, White-tailed Deer, Salamander spp.	Seeps/Springs are areas where ground water comes to the surface. Often they are found within headwater areas within forested habitats. Any forested Ecosite within the headwater areas of a stream could have seeps/springs.	Candidate SWH Criteria • 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 Confirmed SWH Criteria Field Studies confirm: • Presence of a site with 2 or more seeps/springs should be considered SWH. • The area of ELC forest ecosite containing the seeps/springs is the SWH. The protection of the function of the feature considering the slope, vegetation, height of trees and groundwater condition need to be considered in delineation the habitat	**Unlikely** – Suitable habitat is considered absent within the Study Area.

Habitat Type	Indicator Species	ELC Ecosite Code	Habitat Criteria	Assessment Details
Amphibian Breeding Habitat (Woodland)	Eastern Newt, Blue-spotted Salamander, Spotted Salamander, Four-toed Salamander, Northern Two-lined Salamander, Spring Peeper, Wood Frog, American Toad	All forested, ELC Ecosites; 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>Candidate SWH Criteria</u> • Presence of a wetland, lake or pond of area >500m2 (about 25m diameter) within or adjacent (within 120m) to a woodland (no minimum size). The wetland, lake or pond and surrounding forest, would be the Candidate SWH. Some small wetlands may not be mapped and may be important breeding pools for amphibians. • Pools need to be present until mid-July to be used as breeding habitat. • Breeding pools within the woodland or the shortest distance from forest habitat are more significant because of reduced risk to migrating amphibians and more likely to be used. • Woodlands with permanent ponds or those containing water in most years until mid-July are more likely to be used as breeding habitat <u>Confirmed SWH Criteria</u> Studies confirm; • Presence of breeding population of 1 or more of the listed species with at least 20 individuals (adults, juveniles, eggs/larval masses) • The habitat is the woodland (ELC polygons) and wetland (ELC polygons) combined. A travel corridor connecting the woodland and wetland polygons is to be included within the habitat. • An observational study to determine breeding/larval stages will be required during the spring (Apr-June) when amphibians are concentrated around suitable breeding habitat within or near the woodland	**Unlikely** – Suitable habitat is considered absent within the Study Area. Amphibian breeding habitat is present within wetlands, discussed below.
Amphibian Breeding Habitat (Wetlands)	Eastern Newt, American Toad, Spotted Salamander, Four-toed Salamander, Blue-spotted Salamander, Gray Treefrog, Western Chorus Frog, Northern Leopard Frog, Pickerel Frog, Green Frog, Mink Frog, Bullfrog	ELC Community Classes SW, MA, FE, BO, OA and SA.	<u>Candidate SWH Criteria</u> • Wetlands and pools (including vernal pools) >500m2 (about 25m diameter) isolated from woodlands (>120m), 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. • 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. • Bullfrogs require permanent water bodies with abundant emergent vegetation. <u>Confirmed SWH Criteria</u> Studies confirm: • Presence of breeding population of 1or more of the listed salamander species or 3 or more of the listed frog or toad species with at least 20 breeding individuals (adults, juveniles, eggs/larval masses) or Wetland with confirmed breeding Bullfrogs is significant. • The ELC ecosite area and the shoreline are the SWH. • Surveys to confirm breeding to be completed during spring (Apr to June) when amphibians are migrating, calling and breeding within the wetland habitats. • If a SWH is determined for Amphibian Breeding Habitat (Wetlands) then Amphibian Movement Corridors are to be considered (see Table 3.10, Animal Movement Corridors).	**CONFIRMED** – Results of the amphibian call surveys in May and June 2024 indicate the presence of Spring Peeper, American Toad and Grey Tree Frog, with more than 20 individuals.
Woodland Area-Sensitive Bird Breeding Habitat	Yellow-bellied Sapsucker, Red-breasted Nuthatch, Veery, Blue-headed Vireo, Northern Parula, Black-throated Green Warbler, Blackburnian Warbler, Black-throated Blue Warbler, Ovenbird, Scarlet Tanager, Winter Wren <u>Special Concern:</u> Cerulean Warbler, Canada Warbler	All Ecosites associated with these ELC Community Series; FOC, FOM, FOD, SWC, SWM, SWD	<u>Candidate SWH Criteria</u> • Habitats where interior forest breeding birds are breeding, typically large mature (>60 yrs old) forest stands or woodlots >30 ha • Interior forest habitat is at least 100 m from forest edge habitat. <u>Confirmed SWH Criteria</u> Field Studies confirm: • Presence of nesting or breeding pairs of 3 or more of the listed wildlife species. • <u>Note:</u> any site with breeding Cerulean Warblers or Canada Warblers is to be considered SWH • Conduct field investigations of the most likely areas in spring and early summer when birds are singing and defending their territories. • Evaluation methods to follow “Bird and Bird Habitats: Guidelines for Wind Power Projects”	**CONFIRMED** – The swamp communities in the Study Area, including Project Aera, provides interior habitat. Breeding bird surveys confirmed the presence of three requisite species: Yellow-bellied Sapsucker, Veery and Ovenbird.

Habitat Type	Indicator Species	ELC Ecosite Code	Habitat Criteria	Assessment Details
Habitat of Species of Conservation Concern (SOCC)				
Marsh Bird Breeding Habitat	American Bittern, Virginia Rail, Sora, Common Moorhen, American Coot, Pied-billed Grebe, Marsh Wren, Sedge Wren, Common Loon, Sandhill Crane, Green Heron, Trumpeter Swan Special Concern (O. Reg. 230/08) Yellow Rail Black Tern	MAM1, MAM2, MAM3, MAM4, MAM5, MAM6, SAS1, SAM1, SAF1, FEO1, BOO1 For Green Heron: All SW, MA and CUM1 sites.	Candidate SWH Criteria • Nesting occurs in wetlands. • All wetland habitat is to be considered as long as there is shallow water with emergent aquatic vegetation present. • For Green Heron, habitat is at the edge of water such as sluggish streams, ponds and marshes sheltered by shrubs and trees. Less frequently, it may be found in upland shrubs or forest a considerable distance from water. Confirmed SWH Criteria Studies confirm: • Presence of 5 or more nesting pairs of Sedge Wren or Marsh Wren or 1 pair of Sandhill Cranes; or breeding by any combination of 5 or more of the listed species. • Note: any wetland with breeding of 1 or more Trumpeter Swans, Black Terns, Green Heron or Yellow Rail is SWH • Area of the ELC ecosite is the SWH • Breeding surveys should be done in May/June when these species are actively nesting in wetland habitats. • Evaluation methods to follow “Bird and Bird Habitats: Guidelines for Wind Power Projects”	**Unlikely** – Suitable habitat is considered absent within the Study Area.
Open Country Bird Breeding Habitat	Upland Sandpiper, Grasshopper Sparrow, Vesper Sparrow Common Spp: Eastern Meadowlark, American Kestrel, Northern Harrier, Savannah Sparrow **Special Concern** Short-eared Owl	CUM1, CUM2	Candidate SWH Criteria • Large grasslands 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 Field/meadow species. Confirmed SWH Criteria Field Studies confirm: • Presence of nesting or breeding of 2 or more of the listed species. • A field with 1 or more breeding Short-eared Owls is to be considered SWH. • The area of SWH is the contiguous ELC ecosite field areas. • Conduct field investigations of the most likely areas in spring and early summer when birds are singing and defending their territories. • Evaluation methods to follow “Bird and Bird Habitats: Guidelines for Wind Power Projects”	**Unlikely** – Suitable habitat is considered absent within the Study Area. Although Savannah Sparrow was recorded during the breeding bird surveys, the meadow communities within the Study Area (outside of the Project Area) do not meet the size criteria for consideration as SWH.
Shrub/Early Successional Bird Breeding Habitat	Indicator Spp: Brown Thrasher Clay-coloured Sparrow Common Spp. Field Sparrow Black-billed Cuckoo Eastern Towhee Willow Flycatcher **Special Concern**: Yellow-breasted Chat Golden-winged Warbler	CUT1, CUT2, CUS1, CUS2, CUW1, CUW2 Patches of shrub ecosites can be complexed into a larger habitat for some bird species	Candidate SWH Criteria • Large field areas succeeding to shrub and thicket habitats>10 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, haying or live-stock pasturing in the last 5 years). • Shrub thicket habitats (>10 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 pasturelands. Confirmed SWH Criteria Field Studies confirm: • Presence of nesting or breeding of 1 indicator species and at least 2 of the common species. • A field with breeding Yellow-breasted Chat or Golden-winged Warbler is to be considered as SWH. • The area of the SWH is the contiguous ELC ecosite area. • Conduct field investigations of the most likely areas in spring and early summer when birds are singing and defending their territories • Evaluation methods to follow “Bird and Bird Habitats: Guidelines for Wind Power Projects”	**Unlikely** – Suitable habitat is considered absent within the Study Area.

Habitat Type	Indicator Species	ELC Ecosite Code	Habitat Criteria	Assessment Details
Terrestrial Crayfish	Chimney or Digger Crayfish; (Fallicambarus fodiens) Devil Crawfish or Meadow Crayfish; (Cambarus Diogenes)	MAM1, MAM2, MAM3, MAM4, MAM5, MAM6, MAS1, MAS2, MAS3	Candidate SWH Criteria • Meadow and edges of shallow marshes (no minimum size) identified should be surveyed for terrestrial crayfish. • Construct burrows in marsh, mudflats, meadow the ground can't be to moist. Can often be found far from water. Confirmed SWH Criteria Studies Confirm: • Presence of 1 or more individuals of species listed or there chimneys (burrows) in suitable marsh meadow or terrestrial sites. • The area of the ELC polygon is the SWH. • Surveys should be done in adult breeding season (April to late June) and in late summer-early August in nearby temporary or permanent water for juveniles.	**Unlikely** – Suitable habitat is considered absent within the Study Area.
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.	All plant and animal element occurrences (EO). Older element occurrences were recorded prior to GPS being available, therefore location information may lack accuracy	Candidate SWH Criteria • When an element occurrence is identified within a 1 or 10 km grid for a Special Concern or rare species; linking candidate habitat on the site to ELC Ecosites needs to be completed. Confirmed SWH Criteria Studies Confirm: • Assessment/inventory of the site for the identified special concern or rare species needs to be completed during the time of year when the species is present or easily identifiable. • Habitat form and function needs to be assessed from the assessment of vegetation types and an area of significant habitat that protects the rare or special concern species identified. • The area of the habitat to the finest ELC scale that protects the habitat form and function is the SWH; this must be delineated through detailed field studies.	**CONFIRMED and CANDIDATE –** See SOCC Screening Table • Confirmed: Eastern Wood-peewee Candidate: Western Chorus Frog, Grasshopper Sparrow, Upland Sandpiper, and Monarch
Animal Movement Corridors				
Amphibian Movement Corridors	Eastern Newt, Blue-spotted Salamander, Spotted Salamander, Gray Treefrog, Spring Peeper, Western Chorus Frog, Wood Frog	Corridors may be found in all ecosites associated with water. Corridors will be determined based on identifying the significant breeding habitat for these species	Candidate SWH Criteria • Movement corridors between breeding habitat and summer habitat. • Movement corridors must be determined when Amphibian Breeding Habitat (Wetland) is confirmed as SWH Confirmed SWH Criteria • Field Studies must be conducted at the time of year when species are expected to be migrating or entering breeding sites. • Corridors should consist of native vegetation, roadless area, no gaps such as fields, waterways or bodies, and undeveloped areas are most significant • Corridors should be at least 200m wide with gaps <20m and if following riparian area with at least 15m of vegetation on both sides of waterway. Shorter corridors are more significant than longer corridors; however, amphibians must be able to get to and from their summer and breeding habitat	**CANDIDATE** – Suitable habitat is present within the Study Area based on presence of confirmed amphibian breeding habitat (wetlands). The swamp communities in the Study Area and woodland communities located outside of the Study Area, likely provide movement corridors for amphibians.
Deer Movement Corridors	White tailed-deer	Corridors may be found in all treed ecosites.	Candidate SWH Criteria • Movement corridor must be determined when Deer Winter Habitat is confirmed as SWH is confirmed to be present. • Corridors typically follow riparian areas, woodlots, areas of physical geography (ravines, or ridges). • Corridors will be multi-functional (i.e., utilized by other mammal species). Confirmed SWH Criteria • Studies must be conducted at the time of year when deer or moose are moving to mineral licks or feeding areas (May – July). • Corridors that lead to a deer wintering yard should be unbroken by roads and residential areas • Corridors should be at least 200m wide with gaps <20m and if following riparian area with at minimum of 15m of vegetation cover on both sides of the waterway. Shorter corridors are more significant than longer corridors, however cervids must be able to get to and from their habitat.	**Unlikely** – Suitable habitat is considered absent within the Study Area.

Appendix D2 - SOCC Assessment

Species		SAR Status		Conservation Rank and Rarity Status			Source	Habitat	Assessment
Common Name	Scientific Name	Provincial (ESA, 2007)	National (SARA)	National (COSEWIC)	Global (G-rank)	Provincial (S-rank)			
AMPHIBIANS									
Mudpuppy	*Necturus maculosus*			SC	G5	S4	ORAA	Found in lakes, rivers, and streams with rocky or muddy bottoms.	**Unlikely** - Suitable habitat is not present in the Study Area; no lakes, rivers or streams present.
Western Chorus Frog	*Pseudacris maculata* pop. 1		THR	THR	G5TNRQ	S4	ORAA	Inhabits wetlands, grassy areas, forest edges, and sometimes agricultural fields. They breed in shallow, temporary ponds that form in spring, called vernal pools.	**Potential** - Suitable habitat is present within the swamp communities in the Study Area (Figure A2, Appendix A). Amphibian call surveys were completed, although did not capture the early timing window (April) to detect this species.
REPTILES									
Eastern Musk Turtle	*Sternotherus odoratus*	SC	SC, Schedule 1	SC	G5	S3	ORAA	Prefers slow-moving waterbodies such as ponds, marshes and shallow lakes with abundant vegetatin and soft substrates.	**Unlikely** - Suitable habitat is not present in the Study Area.
Midland Painted Turtle	*Chrysemys picta marginata*		SC, Schedule 1	SC	G5T5	S4	ORRA	Inhabit water bodies, such as ponds, marshes, lakes, and slow-moving creeks, that have a soft bottom and provide abundant basking sites and aquatic vegetation. These turtles often bask on shorelines or on logs and rocks that protrude from the water. The midland-painted turtle hibernates on the bottom of water bodies.	**Unlikely** - Suitable habitat is not present in the Study Area.
Snapping Turtle	Chelydra serpentina	SC	SC, Schedule 1	SC	G5	S4	ORRA	Inhabit ponds, sloughs, streams, rivers, and shallow bays that are characterized by slow-moving water, aquatic vegetation, and soft bottoms.	**Unlikely** - Suitable habitat is not present in the Study Area.
BIRDS									
American Coot	*Fulica americana*				G5	S3B,S4N	NHIC, OBBA	Found in marshes, wetlands, and the vegetated edges of lakes, where it forages for aquatic plants and invertebrates	**Confirmed (Fly-thru only)** - This species was recorded during breeding bird surveys as a fly-thru. Suitable habitat is not present within the Study Area.
Blue-winged Teal	*Spatula discors*				G5	S3B, S4M	NHIC	Breeds in shallow wetlands, ponds, and marshes with dense vegetation, often near open water.	**Confirmed (Fly-thru only)** - This species was recorded during breeding bird surveys as a fly-thru. Suitable habitat is not present within the Study Area.
Caspian Tern	*Hydroprogne caspia*				G5	S3B,S5M	Stantec Observation	Nesting on sandy or gravelly islands in large lakes and coastal wetlands, hunting for fish in open waters.	**Confirmed (Fly-thru only)** - This species was recorded during breeding bird surveys as a fly-thru. Suitable habitat is not present within the Study Area.
Common Nighthawk	*Chordeiles minor*	SC	SC, Schedule 1	SC	G5	S4B	OBBA	Inhabit open areas, including grasslands, forest clearings, and urban rooftops. They prefer habitats with bare or sparsely vegetated ground for nesting and are frequently seen foraging for insects at dusk or dawn.	**Unlikely** - Suitable habitat is not present in the Study Area.
Eastern Kingbird	*Tyrannus tyrannus*				G5	S4B	OBBA	Found in open habitats with scattered trees or shrubs, such as fields, orchards, and forest edges. They often nest on tree branches or shrubs near open spaces, where they hunt for flying insects.	**Unlikely** - Limited habitat within the Study Area; species not recorded during breeding bird surveys and therefore, not considered present in the Study Area.
Eastern Wood-Pewee	*Contopus virens*	SC	SC, Schedule 1	SC	G5	S4B	OBBA, Stantec Observation	The Eastern Wood-Pewee is a forest bird of deciduous and mixed woods. Nest-site selection favors open space near the nest, typically provided by clearings, roadways, water, and forest edges.	**Confirmed (Project Footprint)**- This species was recorded in the approximate Project Footprint, including overall Study Area, during breeding bird surveys (Figure A3, Appendix A). Suitable habitat is present within the swamp communities in the Study Area. Impacts to this species can be minimized through adherence to timing windows to comply with the MBCA and SARA. This species is not preotected under the ESA and therefore, a permit would not be required.
Evening Grosbeak	*Coccothraustes vespertinus*	SC	SC, Schedule 1	SC	G5	S4	OBBA	Inhabits a variety of habitats, primarily mature coniferous and mixed forests with species like spruce, fir, and pine, which provide essential food sources such as seeds and buds, along with nesting sites. They are also commonly found near forest edges and open woodlands, where they forage for seeds, fruits, and insects.	**Unlikely** - Suitable habitat is not present in the Study Area and species was not recorded during breeding bird surveys.
Grasshopper Sparrow	*Ammodramus savannarum*	SC		SC	G5	S4B	OBBA	Grassland specialists, favoring open fields, meadows, and prairies with sparse vegetation. They build their nests on the ground, concealed by grass or other low-growing plants.	**Potential (Adjacent Lands only) -** Suitable habitat may be present on Adjacent Lands, in the cultural meadow community in the southeast portion of the Study Area (Figure A2, Appendix B). This species was not recorded during breeding bird surveys.
Purple Martin	*Progne subis*				G5	S3B	OBBA	Colonial nesters that rely on open areas near water, where they can forage for flying insects. They nest in cavities, often in artificial structures such as birdhouses, placed in open, predator-free locations.	**Unlikely** - Suitable habitat is not present in the Study Area and this species was not recorded during breeding bird surveys.
Upland Sandpiper	*Bartramia longicauda*				G5	S2B	OBBA	Inhabit open grasslands, pastures, and hayfields. They prefer tall grasses for nesting and are often found in agricultural or prairie-like landscapes.	**Potential (Adjacent Lands only) -** Suitable habitat may be present on Adjacent Lands, in the cultural meadow community in the southeast portion of the Study Area (Figure A2, Appendix B). This species was not recorded during breeding bird surveys.
INVERTEBRATES									
Monarch	*Danaus plexippus*	SC	SC, Schedule 1	END	G4	S2N, S4B	OBA	In southern Ontario the Monarch is found primarily wherever milkweed and wildflowers (including goldenrods, asters, and purple loosestrife) exist. The Larvae occur only where milkweed exists; adults are more generalized, feeding on a variety of wildflower nectar.	**Potential -** Suitable habitat may be present within the Study Area. Milkweed was recorded within the Project Area, although this species was not recorded during field surveys. Habitat was not identified within the approximate Project Footprint.

Definitions, Acronyms and Symbols

Global G-rank

G1: Critically Imperiled (at very high risk of extinction)
G2: Imperiled (at high risk of extinction)
G3: Vulnerable (at moderate risk of extinction)
G4: Apparently Secure (Uncommon but not rare)
G5: Secure (common, widespread and abundant)
G#G#: Range Rank (range of uncertainty about the status of a taxon or ecosystem type)
GU: Unrankable (currently unrankable due to lack of information)
GNR: Unranked (global rank not yet assessed)
GNA: Not Applicable (species is not a suitable target for conservation activities)
T: Denotes that the rank applies to a subspecies or variety
B: Breeding
N: Non-breeding

COSEWIC: Committee on the Status of Endangered Wildlife in Canada
ESA: Endangered Species Act
SARA: Species at Risk Act
SARO: Species at Risk in Ontario

SARA or ESA designaqtion

END - Endangered
THR - Threatened
SC - Special Concern

Provincial S-rank

S1: Critically Imperiled (i.e. fewer than 5 occurrences in the nation and/or province)
S2: Imperiled (i.e. fewer than 20 occurrences in the nation and/or province)
S3: Vulnerable (i.e. 20-80 occurrences in the nation and/or province)
S4: Apparently Secure (uncommon, but not rare in the nation and/or province)
S5: Secure (common, widespread and abundant in the nation and/or province)
SNA: Not Applicable (species is not a suitable target for conservation activities)
SHB: Breeding is not confirmed in Ontario
S#S#: Range Rank (range of uncertainty about the status of the species or community)
S#?: Rank is Uncertain
S?: Not Ranked Yet
B: Breeding migrants/vagrants
M: Migrant species occurring regularly on migration
N: Non-breeding migrants/vagrants

Regionally Rare (Bird Conservation Priorities[1]) EC, 2014
Recovery Objective - At risk
Increase - Population in decline
Maintain Current - Appears to be stable or increasing
*Recovery Objective and Increase are considered SOCC, unless they are also protected under the ESA or SARA

Locally Rare (List of the Vascular Plants of Ontario's Carolinian Zone[2]) - Oldham, 2017
R: Rare. Native to the Carolinian Zone
X: Present; status unknown or not specified in source lists

Appendix E Species at Risk Screening

Appendix E - SAR ASSESSMENT

Species		SAR Status				
Common Name	Scientific Name	Provincial (ESA, 2007)	National (SARA)	Source	Habitat	Assessment
REPTILES						
Blanding's Turtle	*Emydoidea blandingii*	THR	END, Schedule 1	ORAA	Found in wetlands, such as ponds, lakes, and marshes. This species prefers shallow, slow-moving waters with soft, muddy bottoms and plenty of vegetation for shelter.	**Potential** - Suitable habitat is present within the Study Area but not within the Project Footprint except for transient movement.
MAMMALS						
Eastern Red Bat	*Lasiurus borealis*	END	END	AMO , Stantec Observation	Forage in open areas, forested and non-forested habitats, including both deciduous and coniferous forests. Maternity roosts tend to be large diameter and tall, exceeding the forest canopy. Saplings have been used for roosting by males. Roosts by hanging from branches and using several trees during the breeding season with high inter-annual roosting area fidelity. Migratory species that overwinter in the southern United States. (COSEWIC 2023).	**Confirmed-** Acoustic surveys confirmed presence of this species within the Project Area, including Project Footprint. Impacts to this species is anticipated. An Information Gathering Form (IGF) has been submitted to MECP with ongoing consultation underway to determine any permitting requirements.
Eastern Small-footed Myotis	*Myotis leibii*	END		AMO	Overwintering habitat: Caves and mines that remain above 0 degrees Celsius; Maternal Roosts: primarily under loose rocks on exposed rock outcrops, crevices, and cliffs, and occasionally in buildings, under bridges and highway overpasses and under tree bark.	**Unlikely -** Acoustic surveys were completed and this species was not recorded. Rocky habitat is not considered present within the Study Area.
Hoary Bat	*Lasiurus cinereus*	END	END	AMO , Stantec Observation	Forage in open areas, wetlands, open/patchy treed areas, open fields and grasslands. This species will use both deciduous and coniferous forests, with maternity roosts tending to be large diameter and tall, exceeding the forest canopy. Roosts by hanging from branches and using several trees during the breeding season with high inter-annual roosting area fidelity. Migratory species that overwinter in the southern United States. (COSEWIC 2023).	**Confirmed-** Acoustic surveys confirmed presence of this species within the Project Area, including Project Footprint. Impacts to this species is anticipated. An Information Gathering Form (IGF) has been submitted to MECP with ongoing consultation underway to determine any permitting requirements.
Little Brown Myotis	*Myotis lucifugus*	END	END, Schedule 1	AMO , Stantec Observation	Uses caves, quarries, tunnels, hollow trees or buildings for roosting; winters in humid caves; maternity sites in dark warm areas such as attics and barns; feeds primarily in wetlands, forest edges (MNRF, 2000). Roosts in crevices and cavities in dead or dying trees, or sometimes beneath naturally loose bark on species like Shagbark Hickory (MNRF, 2017).	**Confirmed-** Acoustic surveys confirmed presence of this species within the Project Area, including Project Footprint. Impacts to this species is anticipated. An Information Gathering Form (IGF) has been submitted to MECP with ongoing consultation underway to determine any permitting requirements.
Northern Myotis	*Myotis septentrionalis*	END	END, Schedule 1	AMO	Hibernates during winter in mines or caves; during summer males roost alone and females form maternity colonies of up to 60 adults; roosts in houses, manmade structures but prefers hollow trees or under loose bark; hunts within forests, below canopy (MNRF, 2000)	**Unlikely -** Acoustic surveys were completed and this species was not recorded. Therefore, this species is considered not present.
Silver-haired Bat	Lasionycteris noctivagans	END	END	AMO , Stantec Observation	Forage along the edge of forests, forest openings, including young and old forests and edge of forests. Roost in tree cavities or under exfoliating bark. Migratory species that overwinters in the United States, southeastern British Columbia and occasionally the Great Lakes region (COSEWIC 2023).	**Confirmed-** Acoustic surveys confirmed presence of this species within the Project Area, including Project Footprint. Impacts to this species is anticipated. An Information Gathering Form (IGF) has been submitted to MECP with ongoing consultation underway to determine any permitting requirements.
Tri-colored Bat	*Perimyotis subflavus*	END	END, Schedule 1	AMO , Stantec Observation	Open woods near water; roosts in trees, cliff crevices, buildings or caves; hibernates in damp, draft-free, warm caves, mines, or rock crevices (MNRF, 2000). Prefers roosts in foliage within or below the canopy, mostly in oak species but also sometimes in maples. Clusters of dead or dying leaves on live branches are preferred (MNRF, 2017).	**Confirmed-** Acoustic surveys confirmed presence of this species within the Project Area, including Project Footprint. Impacts to this species is anticipated. An Information Gathering Form (IGF) has been submitted to MECP with ongoing consultation underway to determine any permitting requirements.
BIRDS						
Bank Swallow	*Riparia riparia*	THR	THR, Schedule 1	OBBA, Stantec Observation	The Bank Swallow is ranked as S4B (apparently secure breeding status) in Ontario and is designated provincially as threatened (June 2014). This species receives general habitat protection under the ESA (2007). The Bank Swallow excavate nests in exposed earth banks along watercourses and lakeshores, roadsides, stockpiles of soil, and the sides of sand and gravel pits. Single nests may occur, although colonies are typical and range from two to several thousand. Adjacent grasslands and watercourses are used for foraging habitat (Cadman et al., 2007).	**Confirmed (Fly-thru) / Unlikely Present** - This species was recorded during breeding bird surveys as a fly-thru. Suitable habitat is not present within the Study Area.
Barn Swallow	*Hirundo rustica*	SC	THR, Schedule 1	OBBA, Stantec Observation	Barn Swallows often live in close association with humans, building their cup-shaped mud nests almost exclusively on human-made structures such as open barns, under bridges and in culverts. They prefer unpainted, rough-cut wood as mud does not adhere as well to smooth surfaces.	**Confirmed (Project Area)** - This species was recorded during breeding bird surveys within the Study Area. Suitable habitat is not present within the approximate Project Footprint, although may be present in the Project Area where they nest on human-made structures.
Bobolink	*Dolichonyx oryzivorus*	THR	THR, Schedule 1	NHIC, OBBA	Bobolink nest primarily in forage crops with a mixture of grasses and broad-leaved forbs, predominantly hayfields and pastures. Preferred ground cover species include grasses such as Timothy and Kentucky bluegrass and forbs such as clover and dandelion (COSEWIC 2022). Bobolink is an area-sensitive species, with reported lower reproductive success in small habitat fragments (COSEWIC 2022).	**Potential (Adjacent Lands only) -** Suitable habitat is present within the Study Area on adjacent lands only where the cultural meadow is present; habitat not present within the Project Area. This species was not recorded during breeding bird surveys.
Canada Warbler	*Cardellina canadensis*	SC	THR, Schedule 1	OBBA	Inhabit moist, mixed woodlands with dense understory, often near wetlands, streams, or bogs. They prefer forested areas with abundant shrubs and mossy ground cover for nesting.	**Unlikely** - This species was not recorded within the Study Area during breeding bird surveys. Further, suitable habitat is considered absent within the Study Area due to lack of mixed forests.
Chimney Swift	*Chaetura pelagica*	THR	THR, Schedule 1	OBBA	Urban specialists that nest and roost in chimneys or other vertical structures. Historically, they used hollow trees in old-growth forests, but now they are most commonly found in areas with human-made structures.	**Potential (Project Area)-** This species was not recorded during breeding bird surveys. However, habitat may be present if the house or other structures in the Project Area have chimneys that are suitable for nesting.
Eastern Meadowlark	*Sturnella magna*	THR	THR, Schedule 1	NHIC, OBBA	Meadowlarks are ground nesting birds (Harrison, 1975), which are often associated with human-modified habitats where they sing from prominent perches such as roadside wires, trees, and fenceposts. As a grassland species, the Eastern Meadowlark typically occurs in meadows, hayfields and pastures. The Eastern Meadowlark is generally tolerant of habitat with an early succession of trees or shrubs.	**Potential (Adjacent Lands only) -** Suitable habitat is present within the Study Area on adjacent lands only where the cultural meadow is present; habitat not present within the Project Area. This species was not recorded during breeding bird surveys.
Eastern Whip-poor-will	*Antrostomus vociferus*	THR	THR, Schedule 1	OBBA	Inhabit open woodlands, forest edges, and rocky or sandy clearings. They nest directly on the ground, often choosing sites with sparse vegetation and good camouflage, close to areas for nocturnal insect foraging.	**Unlikely** - Suitable habitat is considered absent within the Study Area. Further, this species was not recorded during breeding bird surveys.
Golden-winged Warbler	*Vermivora chrysoptera*	SC	THR, Schedule 1	OBBA	Breeds in successional scrub habitat surrounding by mature forests, including upland communities, swamps and marshes (COSEWIC 2006).	**Unlikely** - Suitable habitat is present within the Study Area; however, this species was not recorded during breeding bird surveys and therefore, considered not present.
Least Bittern	*Botaurus exilis*	THR	THR, Schedule 1	OBBA	Found in dense, shallow wetlands with tall vegetation like cattails or reeds. This species prefers quiet, protected areas with shallow water and plenty of cover.	**Unlikely** - Suitable habitat is considered absent within the Study Area. Further, this species was not recorded during breeding bird surveys.
Red-headed Woodpecker	*Melanerpes erythrocephalus*	END	END, Schedule 1	OBBA	Found in open woodlands, savannas, and areas with scattered trees. This species prefers habitats with a mix of mature trees and open spaces, such as forest edges, grasslands, or agricultural fields, where it can find food and nesting sites.	**Unlikely** - Suitable habitat is considered absent within the Study Area. Further, this species was not recorded during breeding bird surveys.
Wood Thrush	*Hylocichla mustelina*	SC	THR, Schedule 1	NHIC, OBBA, Stantec Observation	Prefers moist deciduous or mixed second-growth forests with dense undergrowth and tall trees for perching (COSEWIC, 2012).	**Confirmed (Project Area)** - This species was recorded within the swamp community (SWDM4-5) within the Project Area during breeding bird surveys (Figure A3, Appendix A). Impacts to this species can be minimized through adherence to timing windows to comply with the MBCA and SARA. This species is not preotected under the ESA and therefore, a permit would not be required.
PLANTS						
Black Ash	*Fraxinus nigra*	END		Stantec Observation	Inhabits wetlands such as swamps, bogs, and along rivers and streams.	**Confirmed (Project Area)** - This species was recorded in the Project Area, including the approximate Project Footprint (Figure A3, Appendix A). Two individuals less than 10 cm DBH were recorded within the Project Footprint, along with approximately 12 individuals mapped as a polygon that were less than 8 cm DBH. The polygon north of the Project Footprint had at least 3 individuals over 8 cm DBH and the polygon west of the Project Footprint had one mature individual estimated to be over 8 DBH and one younger individual less than 8 DBH. A permit under the ESA is anticipated if removal of these species is required. An IGF has been submitted to MECP, with consultation underway.

Definitions, Acronyms and Symbols

ESA: Endangered Species Act
SARA: Species at Risk Act

SARA or ESA designation
EXT - Extinct
END - Endangered
THR - Threatened
SC - Special Concern
NAR - Not at Risk

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Appendix F Black Ash Survey Results

Appendix F: Black Ash Survey Results

Map Label	Black Ash Number	Date of Assessment	Location		Diamater at Breast Height DBH in cm	Canopy Condition (1 to 5)	Signs of Past or Present EAB infestation (y,n)	Severity of EAB Infestation (low, medium, high, n/a)	Other Factors Contributing to Condition of Tree	Severity of Other Factors (low, medium, high, n/a)	Determination of Health Condition (healthy, unhealthy)	Detailed Description of Evidence of Health Status	Photo
			X	Y									
Black Ash 01	1	June 12 2025	-8432973.686	5655179.634400003	14	1	Yes	Medium	Dominant in canopy, located along open pathway, exposed to moist soils and ample sunlight	Low	Healthy	Alongside trail edge, dominant tree, located in moist soils	
Black Ash 02	2	June 12 2025	-8432997.676	5655177.044200003	12	1	Yes	Low	Dominant in canopy, located along open pathway, exposed to moist soils and ample sunlight	Low	Healthy	Located in moist soils/ wet area with ample sunlight, dominant in canopy	
Black Ash 03	3	June 12 2025	-8432996.51	5655183.054	8	1	No	Low	Subdominant in understorey, shaded out by larger maple trees	Low	Healthy	Located in moist soils and is dominant in understorey	
Black Ash 04	4	June 12 2025	-8432997.941	5655186.856200002	9	1	No	Low	Subdominant in understorey, shaded out by larger maple trees	Low	Healthy	Located in moist soils, within subcanopy but receiving ample sunlight	
Black Ash 05	5	June 12 2025	-8433012.375	5655182.655000001	12	1	No	Low	Dominant in canopy, exposed to moist soils and ample sunlight	Low	Healthy	Healthy, subdominant in canopy but located in moist soils with ample sunlight	
Black Ash 06	6	June 12 2025	-8433023.469	5655187.730700001	11	1	No	Low	Dominant in canopy, located in moist soils	Low	Healthy	Healthy, dominant in canopy. Located in moist soils with adequate sunlight	
Black Ash 07	7	June 12 2025	-8433007.53	5655193.315899998	16	1	No	Low	Subdominant in canopy, located in moist soils, slightly shaded by larger maple trees	Low	Healthy	Healthy, dominant in canopy. Located in moist soils with adequate sunlight	
Black Ash 08	8	June 12 2025	-8433011.244	5655176.482199997	15	5	Yes	High	Dead and leaning against larger maple trees	Low	Dead	Dead, dominant in canopy but shows signs of EAB infestation	
Black Ash 09	9	June 12 2025	-8433013.972	5655196.420400001	10	1	No	Low	Dominant in canopy and in moist soils with adequate sunlight	Low	Healthy	Healthy, dominant in canopy and shows no apparent signs of EAB	
Black Ash 10	10	June 12 2025	-8433011.902	5655194.966799997	8	5	Yes	High	Dead and standing. Located in moist soils with adequate sunlight	High	Dead	Dead, shows signs of EAB ingestation	
Black Ash 11	11	June 12 2025	-8433020.15	5655188.593800001	8	4	No	Low	Dead with epicormic shoots, located in moist soils but under shade from large maple trees	Low	Dead	Dead, shows signs of EAB infestation, subdominant in canopy	
Black Ash 12	12	June 25 2025	-8432995.079	5655009.670699999	9	1	No	None	Shaded by larger trees, in subcanopy	Medium	Healthy	Surrounded by Black Ash saplings, located in subcanopy and not dominant, appears shaded out	

Map Label	Black Ash Number	Date of Assessment	Location		Diamater at Breast Height DBH in cm	Canopy Condition (1 to 5)	Signs of Past or Present EAB infestation (y,n)	Severity of EAB Infestation (low, medium, high, n/a)	Other Factors Contributing to Condition of Tree	Severity of Other Factors (low, medium, high, n/a)	Determination of Health Condition (healthy, unhealthy)	Detailed Description of Evidence of Health Status	Photo
Black Ash 13	13	June 25 2025	-8432912.586	5655203.6049000025	10	1	No	None	Shaded by larger trees, in subcanopy	Medium	Healthy	Surrounded by Black Ash saplings, located in subcanopy and not dominant, appears shaded out	
Black Ash 14	14	June 12 2025	-8432973.686	5655179.634400003	12, 10	5	Yes	Low	Located in drier soils than surrounding area, competing for light but nearby open pathway with adequate sunlight	High, Low	One stem is dead (the larger of the two) and one appears alive (the smaller of the two)	Nearby pathway. Two stems: one is larger and appears dead with signs of EAB. The other stem appears healthy and shows some (low) signs of EAB.