Environmental Impact Study

Broccolini Airport Road

Caledon, Ontario

Submitted to:
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Submitted by:
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November 12, 2025
Project No. 2500849

Statement of Conditions

This Report / Study (the "Work") has been prepared at the request of, and for the exclusive use of, the Owner / Client, Town of Caledon and its affiliates (the "Intended User"). No one other than the Intended User has the right to use and rely on the Work without first obtaining the written authorization of GEI Consultants Canada Ltd. and its Owner. GEI Consultants Canada Ltd. expressly excludes liability to any party except the Intended User for any use of, and/or reliance upon, the work.

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1. Introduction

GEI Consultants Canada Ltd. (GEI) has been retained by Broccolini Airport Road LP to complete an Environmental Impact Study (EIS) in support of the proposed development at the property legally described as Lot 21 Concession 6 East of Centre Road Chinguacousy. The site is generally located south of Old School Road, west of Airport Road, east of Torbram Road and north of Mayfield Road in Caledon, Ontario and is herein referred to as the Subject Lands (**Figure 1**, **Appendix A**).

The Subject Lands are a participating property within the Tullamore North Employment Area Secondary Plan Area. This Secondary Plan area is currently undergoing a Master Environmental and Servicing Plan (MESP), to support a privately initiated Secondary Plan and Official Plan Amendment to the Town of Caledon's Future Caledon Official Plan. GEI is currently assisting with delivery of the MESP on behalf of the Proponent. The first submission of the MESP Report (MESR) was provided on May 16th, 2025 (along with the overall Secondary Plan OPA).

1.1. Purpose of the Report

A Pre-Application Review Committee (PARC) meeting was held with the Town of Caledon (Town) on August 28, 2025. Natural Heritage comments have not been provided, but it is anticipated that an EIS is required for the Zoning By-law Amendment (ZBA) and Site Plan application.

This EIS will assess the potential impacts of the proposed development on the natural heritage features and associated functions on and adjacent to the Subject Lands. This work considers applicable policies of the Province of Ontario's Provincial Planning Statement (PPS; MMAH 2024) and associated provincial implementation guidance contained in the Natural Heritage Reference Manual (NHRM; MNR 2010) as well as the Town of Caledon's Future Caledon Official Plan (2024), Region of Peel Official Plan (2022 Consolidation) and the Toronto and Region Conservation Authority's (TRCA) regulation and policies.

An EIS Terms of Reference (TOR) was developed to guide the preparation of the EIS for the Subject Lands. The TOR was initially drafted and circulated to the Town and the TRCA on August 26, 2025. On September 5, 2025, the TRCA confirmed that they had reviewed the TOR and had no comments. A copy of the TOR and correspondence from the TRCA is provided in **Appendix C**. Comments on the TOR were not received from the Town of Caledon prior to submission.

1.2. Study Area

The Subject Lands are predominantly made up of active agricultural fields within the eastern extent. Natural vegetation communities occur within the western extent of the Subject Lands and are generally constrained to the Salt Creek valleyland and associated woodlands and wetlands. The Subject Lands are also located within the TRCA watershed with regulated features.

The Study Area is defined as the area within 120 m of the Subject Lands and generally consists of a mixture of agricultural lands and natural vegetation areas associated with the Salt Creek valleyland and its tributaries.

2. Natural Heritage Legislation and Policy Context

An assessment of the significance and sensitivity of the natural heritage features found on and adjacent to the Subject Lands was undertaken in accordance with the provisions of the following legal, regulatory, and policy documents as well as associated guidance documents:

- *Provincial Planning Statement* (PPS, MMAH 2020);
- *Ontario Regulation 41/24* (Prohibited Activities, Exemptions and Permits under the Conservation Authorities Act, 2024);
- Peel Region Official Plan (2022 Consolidation);
    - Settlement Area Boundary Expansion Study
    - Environmental Screening Report (Wood, 2020)
    - Scoped SWS (Part A, B, & C, Wood et al. 2022)
- Future Caledon Official Plan (Caledon OP, 2024)
- *Fisheries Act* (1985, Amended 2019);
- *Migratory Birds Convention Act* (1994, Amended 2024); and
- *Endangered Species Act* (ESA, 2007, Amended 2025)

2.1. Provincial Policy Statement

The PPS (MMAH 2024) provides guidance on matters of provincial interest surrounding land-use planning and development. The PPS is to be read in its entirety and land-use planners and decision-makers need to consider all relevant policies and how they work together.

This report addresses those policies that are specific to Natural Heritage (section 4.1 of the PPS) with some reference to other policies with relevance to Natural Heritage and impact assessment considerations and areas of overlap (e.g., those related to Sewage, Water and Stormwater, section 3.6; Water, section 4.2; Natural Hazards, section 5.2).

Eight types of natural heritage features and area are defined in the PPS, as follows:

- Significant wetlands;
- Significant coastal wetlands;
- Significant woodlands;
- Significant valleylands;
- Significant wildlife habitat (SWH);
- Fish habitat;
- Habitat of endangered and threatened species; and
- Areas of Natural and Scientific Interest (ANSI)s.

The PPS indicates that development and site alteration shall not be permitted in significant wetlands within EcoRegions 5E, 6E and 7E (the proposed development is located in EcoRegion 6E), or in significant coastal wetlands. The PPS further indicates that development and site alteration shall not be permitted in significant woodlands, significant valleylands, SWH or significant ANSIs, unless it is demonstrated that there will be no negative impacts on the natural features or their ecological functions.

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

Development and site alteration may be permitted on lands adjacent to the above features provided it has been demonstrated that there will be no negative impacts on the natural features or their ecological functions.

Section 5.2.2 of the PPS directs development to areas outside of hazardous lands adjacent to the shoreline of the Great Lakes – St. Lawrence River System (flooding, erosion and dynamic beach hazards), hazardous lands adjacent to river, steam and small inland lake systems (flooding and/or erosion hazards) and hazardous sites. Section 5.2.3 of the PPS further prohibits development and site alteration within:

a. The dynamic beach hazard;
b. Defined portions of the flooding hazard along connecting channels (the St. Marys, St. Clair, Detroit, Niagara and St. Lawrence Rivers);
c. Areas that would be rendered inaccessible to people and vehicles during times of flooding hazards, erosion hazards and/or dynamic beach hazards, unless it has been demonstrated that the site has safe access appropriate for the nature of the development and the natural hazard; and
d. A floodway regardless of whether the area of inundation contains high points of land not subject to flooding.

2.2. Toronto and Region Conservation Authority / O.Reg. 41/24

O. Reg. 41/24 allows Conservation Authorities to implement Section 28 of the *Conservation Authorities Act* (1990, amended 2024), which states that:

> 28 (1) *No person shall carry on the following activities, or permit another person to carry on the following activities, in the area of jurisdiction of an authority:*
>
> 1. *Activities to straighten, change, divert or interfere in any way with the existing channel of a river, creek, stream or watercourse or to change or interfere in any way with a wetland.*
> 2. *Development activities in areas that are within the authority's area of jurisdiction and are,*
>   i. *hazardous lands,*
>   ii. *wetlands,*
>   iii. *river or stream valleys the limits of which shall be determined in accordance with the regulations,*
>   iv. *areas that are adjacent or close to the shoreline of the Great Lakes-St. Lawrence River System or to an inland lake and that may be affected by flooding, erosion or dynamic beach hazards, such areas to be further determined or specified in accordance with the regulations, or*

v. *other areas in which development should be prohibited or regulated, as may be determined by the regulations. 2017, c. 23, Sched. 4, s. 25.*

Pursuant to O. Reg. 41/24, any interference with or development in or on areas stated in the *Conservation Authorities Act* (e.g., hazardous lands, wetlands, river or stream valleys) requires permission from the Conservation Authority. The Conservation Authority may issue permits under Section 28.1 and may attach conditions on the permits per Section 9(1) of the Regulation.

A review of the TRCA's Regulation Mapping (2025) was completed to understand what approximate natural hazards may be present within the Subject Lands. Within the Subject Lands, Salt Creek and its tributaries are identified as regulated watercourses with meander belts and within valleylands with a crest of slope. In addition, wetlands and flood hazards are associated with these watercourses.

2.3. Region of Peel Official Plan

The *Region of Peel Official Plan* (2024 Consolidation, Peel OP) is a planning document intended to manage Peel's progress and expansion in the long-term. The Subject Lands are identified as part of the Urban System and the 2051 New Urban Area as shown on Schedule E-1 ("Regional Structure"). Portions of the Subject Lands associated with the Salt Creek valleyland are noted as part of the Greenlands System as per Schedule C-1 ("Greenlands System") and are further identified as Core Areas and a tributary as a Natural Core Areas and Corridors (NAC) of the Greenlands System on Schedule C2 ("Core Areas of the Greenlands System in Peel") and Figure 7 ("Regional Greenlands System - Core Areas, Natural Areas and Corridors and Potential Natural Areas And Corridors") (**Figure 2, Appendix A**). The Greenlands System is based on natural heritage features and areas and the linkages among them.

Core Areas of the Greenlands Systems are defined within Section 2.14.12 of the Peel OP as:

- Significant wetlands;
- Significant coastal wetlands;
- Woodlands meeting one or more Core Area woodland in Table 1 of the OP;
- Environmentally sensitive or significant areas;
- Provincial life science ANSIs;
- Escarpment natural areas of the Niagara Escarpment Plan; and
- Valley and stream corridors meeting one or more of the criteria for Core Area valley and stream corridors in Table 2 of the OP.

Natural Areas and Corridors of the Greenlands System are defined within Section 2.14.18 of the Peel OP as:

- Evaluated non-provincially significant wetlands and coastal wetlands;
- Woodlands meeting one or more of the criteria for NAC woodland in Table 1;
- Significant wildlife habitat meeting one or more of the criteria in the Ministry of Natural Resources (MNR)' Significant Wildlife Habitat Technical Guide and associated Criteria Schedules for Ecoregions 6E and 7E;
- Fish habitat;

- Habitat of aquatic species at risk;
- Habitat of endangered and threatened species defined in accordance with the Endangered Species Act;
- Regionally significant life science Areas of Natural and Scientific Interest;
- Provincially significant earth science Areas of Natural and Scientific Interest;
- Escarpment Protection Areas of the Niagara Escarpment Plan;
- The Lake Ontario shoreline and littoral zone and other natural lakes and their shorelines;
- Any other valley and stream corridors that have not been defined as part of the Core Areas;
- Sensitive headwater areas and sensitive ground water discharge areas; and
- any other natural features and functional areas interpreted as part of the Greenlands System Natural Areas and Corridors by the local municipalities, in consultation with the conservation authorities and the Ministry of Northern Development, Mines, Natural Resources and Forestry, including, as appropriate, elements of the Potential Natural Areas and Corridors.

Potential Natural Areas and Corridors of the Greenlands System are:

- Unevaluated wetlands and coastal wetlands;
- Cultural woodlands and cultural savannahs within the urban system meeting one or more of the criteria for PNAC woodland in table 1 of the PROP;
- Any other woodlands greater than 0.5 hectares;
- Regionally significant earth science ANSI;
- Sensitive ground water recharge areas;
- Portions of historic shorelines;
- Open space portions of the parkway belt west plan area;
- Enhancement areas, buffers and linkages; and
- Any other natural features and functional areas interpreted as part of the Greenlands system PNAC.

Development and site alteration will not be permitted unless it has been demonstrated through an EIS that there will be no negative impacts on the natural features or their ecological functions.

2.4. Future Caledon Official Plan (2024)

The Town of Caledon's *Future Caledon Official Plan* (2024, Caledon OP) was adopted by Council on March 26th, 2024 and received approval from the Ministry of Municipal Affairs and Housing on October 22, 2025.

As per Schedule B2 ("Growth Management") of the Caledon OP, the Subject Lands are noted as part of the New Urban Area 2051.

Based on Schedule B4 ("Land Use Designations"), the Subject Lands are predominantly identified as New Employment Area and include Natural Features and Areas (**Figure 2, Appendix A**). These natural features are further defined as including Natural Features and Areas with 30m Buffer, Supporting Features, Potential Enhancement Areas and Salt Creek as a Potential Linkage (Schedule D2b; "New Urban Area Preliminary Natural Environment System").

The Caledon OP refers to the Region of Peel Scoped SWS (Wood et al., 2022) in Section 13.9 in reference to the delineation of a preliminary Natural Environment System for New Employment Areas (Section 13.9). The Natural Features and Areas outlined in Schedule B4 for the New Employment Areas have been further refined and updated based on targeted desktop and field investigations through the MESR that GEI is currently supporting.

In general, the MESR (GEI, 2025) provides recommendations for the updated Natural Environment System that includes Natural Features and Areas including:

- Provincially Significant Wetlands (PSW);
- Woodlands meeting one or more of the criteria for Core Area woodland on Table 1 of the Region of Peel Official Plan;
- Significant Valleylands;
- Environmentally Sensitive or Significant Areas;
- Provincial Life Science ANSIs;
- Escarpment Natural Area designation of the Niagara Escarpment Plan; and
- Valley and stream corridors meeting one or more of the criteria for Core Area valley and stream corridors in Table 2 of the Region of Peel OP.

As well as "Supporting Features and Areas" inclusive of:

- Evaluated non-provincially significant wetlands;
- Unevaluated wetlands;
- Woodlands meeting one or more of the criteria for a Natural Areas and Corridors woodland in Table 1 of the Region of Peel Official Plan;
- Cultural woodlands and cultural savannahs within the Urban System meeting one or more of the criteria for a Potential Natural Area and Corridor woodland in Table 1 of the Region of Peel Official Plan;
- Any other woodland greater than 0.5 hectares that does not meet the criteria for a Natural Areas and Corridors woodland in Table 1 of the Region of Peel Official Plan;
- Significant wildlife habitat;
- Fish habitat;
- Habitat of aquatic species at risk;
- Habitat of endangered species and threatened species;
- Regionally significant Life Science ANSI;
- Provincially significant Earth Science ANSI;
- Regionally significant Earth Science ANSI;
- the Escarpment Protection Area designation of the Niagara Escarpment Plan;
- Any other valley and stream corridor that have not been defined as meeting one or more of the criteria for Core Area valley and stream corridors in Table 2 of the Peel OP;
- Sensitive head water areas and sensitive groundwater discharge areas;
- Sensitive groundwater recharge areas;
- Enhancement areas;
- Linkages;

- VPZ; and
- Savannahs and alvars.

Development and site alteration which may be permitted within Natural Features and Areas includes fish and wildlife management, conservation, essential infrastructure, passive recreation, minor development and site alteration, existing uses, expansions or alterations to existing buildings, accessory uses, and a new single residential dwelling on an existing lot of record. New development or site alteration within or adjacent to a feature in the Natural Features and Areas designation areas requires an EIS which demonstrates that there will be no negative impacts on the natural features or their ecological function. The final buffer width within New Employment Areas will be determined through an EIS, prepared to the satisfaction of the Town.

The Caledon OP also brings in additional climate change considerations. In 2010, the Town of Caledon created its first Community Climate Change Action Plan (CCCAP), furthering their climate action efforts in 2017 by signing on to the Global Covenant of Mayors for Climate and Energy (GCOM). The Town created a Future Climate Projections Report (2018) to better understand anticipated trends and impacts of climate change on the community. The climate change objectives and policy directions outlined in Chapter 5 of the Caledon OP aim to support the corporate goals, actions, and strategies identified in the newest version of the Resilient Caledon CCCAP, released in 2021. The Resilient Caledon Plan combines adaptation and mitigation actions to reduce GHG emissions and help the community prepare for climate change. The Caledon OP (2024) highlights the need to address climate change through a series of objectives and policy decisions that support the corporate goals, actions, and strategies in the Resilient CCCAP.

2.5. Settlement Area Boundary Expansion (SABE) Environmental Screening Report & Scoped Subwatershed Study

The Region of Peel undertook a SABE study as part of their Peel OP updates (Adopted 2022) to determine appropriate locations for future community and employment growth in the Town of Caledon; inclusive of the lands within the Subject Lands.

To better understand the environmental conditions, impacts, and management opportunities, an Environmental Screening Report (Wood, 2020) was prepared, and followed up by the Scoped Subwatershed Study (SWS; Part A, B & C; Wood, 2022). The Subject Lands fall within this SABE boundary, and thus the desktop data presented in the preliminary natural environment constraint screening prepared by Wood Environment & Infrastructure Solutions (Wood et al., 2020) and the SABE Scoped SWS (Part A, B, & C; Wood et. al., 2022) were used to inform this EIS.

Terrestrial & Natural Heritage Systems

Within the Subject Lands, the following Key Features and Supporting Features were identified in the Appendix E of the SABE SWS:

- Key Feature – Woodland (associated with the Salt Creek valleyland);
- Candidate SWH (associated with the Salt Creek valleyland):
    - Amphibian Breeding Habitat (Woodland);
    - Amphibian Breeding Habitat (Wetland);

    - Bat Maternity Colonies;
    - Shorebird Migratory Stopover Areas;
    - Turtle Wintering Areas;
    - Bald Eagle and Osprey Nesting, Foraging, and Perching Habitat;
    - Seeps and Springs;
    - Waterfowl Nesting Areas;
    - Marsh Breeding Bird Habitat;
    - Terrestrial Crayfish;
    - Amphibian Movement Corridors;
- Key Feature – Wetland (associated with the Salt Creek and tributaries)
- Key and Supporting Features – Valleylands (associated with the Salt Creek and tributaries' valleylands);
- Key Feature – Watercourses, Seepage Area and Spring (Salt Creek and tributaries)

Stream Systems

In the SABE SWS, stream features were given a classification of high, medium, and low geomorphic constraint. High constraint features are regulated by the Conservation Authority and must not be relocated or altered in a post-development scenario. Medium constraint features have attributes in common with high constraint features, but are typically highly impacted or unstable, warranting potential realignment. Low constraint features are ephemeral in nature, and are typically poorly defined, yet must still be treated as watercourses prior to further analysis.

The following watercourses constraint rankings were provided in the SABE, and were updated in the MESR:

- SC(3) (including SC(3)-1 and SC(3)-2) was identified within the SABE as a high constraint watercourse. This was confirmed through interpretation of the GEO Morphix report (GEO Morphix, 2023), as well as a fluvial geomorphic assessment performed by GEI.
- SC(3)2-1 was identified within the SABE as a medium constraint watercourse. This was confirmed through interpretation of the GEO Morphix report (GEO Morphix, 2023), as well as a fluvial geomorphic assessment performed by GEI.
- SC(3)1-1 was identified within the SABE as an HDF. Although the feature is relatively undefined at the crossing with Old School Road – the location where the SABE's windshield assessment likely took place – the feature becomes much more defined in the vicinity of the main branch. It is of GEI's opinion that reach SC(3)1-1 should be classified as a low constraint watercourse.

2.6. Endangered Species Act (2007) and Bill 5, Protect Ontario by Unleashing our Economy Act (2025)

The Ministry of the Environment, Conservation and Parks (MECP) administers the provincial Endangered Species Act, 2007 (amended 2025), which was developed to:

- Identify species at risk (SAR), based upon best available scientific information, including information obtained from community knowledge and Indigenous traditional knowledge; and

- Provide for the protection and conservation of species at risk while taking into account social and economic considerations including the need for sustainable economic growth in Ontario.

The Endangered Species Act protects all Threatened, Endangered, and Extirpated species listed on the Species at Risk in Ontario List (SARO; Ontario Regulation 230/08). These species are legally protected from harm, and their habitats are legally protected from damage or destruction, as defined under the Endangered Species Act.

On June 5, 2025, Bill 5, the Protect Ontario by Unleashing our Economy Act, 2025 received Royal Assent, which will eventually replace the Endangered Species Act with the Species Conservation Act on a date to be determined. The Species Conservation Act, 2025 generally provides the same legal protections to SAR and their habitat.

2.7. Migratory Birds Convention Act (1994)

Environment and Climate Change Canada (ECCC) administers the *Migratory Birds Convention Act*, which protects the nests of migratory bird species from destruction, including incidental take (i.e., the unintentional destruction of a nest), as well as from disturbance. The *Migratory Birds Convention Act* does not provide a set date where activities, such as tree removal, can be completed without the risk of incidental harm to the nests of birds. The requirement to ensure that there are no bird nests present within the work area rests with the proponent of the activity.

2.8. Fisheries Act (1985)

Fisheries and Oceans Canada (DFO) administers the federal *Fisheries Act*, 1985, which defines fish habitat as “water frequented by fish and any other areas on which fish depend directly or indirectly to carry out their life processes, including spawning grounds and nursery, rearing, food supply and migration areas” (s. 2(1)). The *Fisheries Act* prohibits the death of fish by means other than fishing (s. 34.4(1)), and the harmful alteration, disruption or destruction of habitat (HADD; s. 35(1)). A HADD is defined as “any temporary or permanent change to fish habitat that directly or indirectly impairs the habitat’s capacity to support one or more life processes”.

3. Data Collection Methods and Approaches

GEI used two levels of investigation to obtain information about the natural heritage features and functions of the Subject Lands: 1) a background review of existing information sources and 2) on-site field surveys and assessments. The following sections describe each level of investigation in further detail.

3.1. Background References

GEI reviewed the following background material to determine existing natural heritage information for the Subject Lands:

- Ministry of Natural Resources (MNR) Natural Heritage Information Centre (NHIC) database (2025);
- MNR Geospatial Ontario (GEO) geographic database and natural features mapping (2025);
- Bird Studies Canada's Atlas of the Breeding Birds of Ontario (Cadman et al. 2007);
- Ontario Nature's Reptile and Amphibian Atlas (2023);
- Toronto Entomologists' Association's (TEA) Ontario Butterfly and Moth Atlases (2025);
- Fisheries and Oceans Canada's (DFO) Aquatic Species at Risk (SAR) Map (2025); and
- Online citizen science databases (e.g., eBird and iNaturalist).

3.1.1. Geospatial Ontario Natural Features Results

Based on the MNR GEO database (2025), the following features were found within and/or adjacent to the Subject Lands (**Figure 2**, **Appendix A**):

- Woodlands are located throughout the central and southeastern portions of the Subject Lands;
- Unevaluated wetlands are associated with the portions of Salt Creek (a tributary of the West Humber River) that flow southeast across the Subject Lands; and
- The Greenbelt Plan Area is located 0.7 km southwest of the Subject Lands

No other natural heritage features were identified through MNR mapping on the Subject Lands or the adjacent 120 m.

3.1.2. NHIC Database Results

The NHIC (MNR 2025) was searched for records of provincially significant plants, vegetation communities and wildlife on and in the vicinity of the Subject Lands. The database provides occurrence data by 1 km^2 area squares, with four squares overlapping the Subject Lands: 17NJ9850, 17NJ9851, 17NJ9750, 17NJ9751. The following species of interest were noted in the atlas squares that overlap the Subject Lands:

- Species listed as Threatened or Endangered on the SARO list:
  - Redside Dace (*Clinostomus elongatus*) - Endangered;
  - Bobolink (*Dolichonyx oryzivorus*) - Threatened; and
  - Eastern Meadowlark (*Sturnella magna*) – Threatened.

- Species of Conservation Concern (i.e., listed as Special Concern on the SARO list, or identified as an S1-S3 species):
  - Eastern Wood-Pewee (*Contopus virens*)- Special Concern; and
  - Wood Thrush (*Hylocichla mustelina*) - Special Concern.

In addition to the species identified, one wildlife concentration area is present: Mixed Wader Nesting Colony. This is a SWH type associated with colonially nesting birds within trees and shrub habitats.

3.1.3. Ontario Breeding Bird Atlas Results

The Ontario Breeding Bird Atlas (OBBA) contains detailed information on the population and distribution status of Ontario birds (Cadman et al. 2007). The data is presented on 100 km^2 area squares with one square overlapping the Subject Lands (17NJ95). It should be noted that the Subject Lands are a small component of the overall bird atlas square, and therefore it is unlikely that all bird species are found within the Subject Lands. Habitat type, availability, and size are all contributing factors in bird species presence and use.

A total of 117 bird species were recorded in the atlas square, with the following species of interest noted:

- Species listed as Threatened or Endangered on the SARO List:
  - Bank Swallow (*Riparia riparia*) - Threatened;
  - Bobolink - Threatened;
  - Chimney Swift (*Chaetura pelagica*) - Threatened;
  - Eastern Meadowlark – Threatened;
  - Prothonotary Warbler (*Protonotaria citrea*) – Endangered; and
  - Red-headed Woodpecker (*Melanerpes erythrocephalus*)– Endangered

- Species of conservation concern (i.e., listed as Special Concern on the SARO List or identified as an S1–S3 species B=breeding population, N=non-breeding population, M=migrant population):
  - Barn Swallow (*Hirundo rustica*) - Special Concern;
  - Eastern Wood-Pewee- Special Concern*;*
  - Grasshopper Sparrow (*Ammodramus savannarum*) - Special Concern;
  - Golden-winged Warbler (Vermivora chrysoptera) – Special Concern;
  - Upland Sandpiper (*Bartramia longicauda*) – S2B;
  - Wood Thrush - Special Concern.

3.1.4. Ontario Reptile and Amphibian Atlas Results

The Ontario Reptile and Amphibian Atlas contains detailed information on the population and distribution status of Ontario herpetofauna (Ontario Nature 2023). The data is presented on 100 km^2 area squares with one square overlapping the Subject Lands (17NJ95). It should be noted that the Subject Lands are a small component of the overall atlas square, and therefore it is unlikely that all herpetofauna species are found within the Subject Lands. Habitat type, availability and size are all contributing factors in herpetofauna species presence and use.

A total of 16 species were recorded in the atlas square that overlaps with the Subject Lands. Of these species, the following species is of interest was noted: Snapping Turtle (*Chelydra serpentina*) - Special Concern.

3.1.5. Ontario Butterfly and Moth Atlas Results

The Ontario Butterfly and Moth Atlas (Toronto Entomologists' Association 2025) contains detailed information on the population and distribution status of butterflies and moths in Ontario. The database provides occurrence data by 10 km x 10 km squares. The Subject Lands are located within the atlas square (17NJ95), which was used to determine a potential butterfly and moth species list for the area. The Subject Lands are a small component of the overall atlas square, and therefore all the butterfly and moth species listed for this atlas square may not be found within the Subject Lands. Habitat type, availability, and size are all contributing factors to butterfly and moth species presence and use.

A total of 79 species, including 54 butterfly species and 25 moth species, were recorded in the atlas square. Of these reported species, the following species of interest are noted: Monarch (*Danaus plexippus*) - Special Concern.

3.1.6. Aquatic SAR Distribution Mapping Results

The DFO Aquatic Species at Risk Map (2025) was reviewed to identify any known occurrences of aquatic SAR, including fish and mussels, within the subwatershed where the Subject Lands are located. Occupied Redside Dace habitat is identified within the Salt Creek. Additionally, the tributary of West Humber River located west of the Subject Lands (west of Torbram Road) is also identified as occupied Redside Dace habitat.

3.1.7. Citizen Science (iNaturalist and eBird)

The iNaturalist (2025) database is a large citizen science-based identification and data collection app. It allows any citizen to submit observations for review and identification by other naturalists and scientists to help provide accurate species observations. As the observations can be submitted by anyone, and the records are not officially vetted, the data obtained from this tool should not be used as a clear indicator of species presence, and species may be filtered out based on habitat and targeted survey efforts.

This online database was examined to identify observations made within the Subject Lands that were research grade. One species of interests was noted within 120 m of the Subject Lands: Little Brown Bat (*Myotis lucifugus*) – Endangered. It was observed at a residential home.

The eBird (2025) database is a large citizen science-based project with a goal to gather bird diversity information in the form of checklists of birds, archive it, and share it to power new data-driven approaches to science, conservation, and education. As the observations can be submitted by anyone, and the records are not officially vetted, the data obtained from this tool should not be used as a clear indicator of species presence, and species may be filtered out based on habitat and target survey efforts.

This online database was examined to identify observations made within the Subject Lands. No species of interest were noted.

3.1.8. Humber River Fisheries Management Plan (TRCA 2005)

A Humber River Fisheries Management Plan (FMP) was developed by the MNR and TRCA (2005) and was intended to characterize the existing conditions of seven aquatic habitat types found in the watershed and assess their habitat potential.

No aquatic sampling stations were identified within the Subject Lands; however, station HUO14WM is located downstream of the Study Area within the same branch of the West Humber River south of Castlemore Road and east of Centreville Creek Road (Figure 13 "Aquatic Sampling Stations"). As recorded within Appendix V of the FMP, Common Shiner (*Luxilus cornutus*), Blacknose Dace (*Rhinichthys atratulus*), Brown Bullhead (*Ameiurus nebulosis*), Rock Bass (*Ambloplites rupestris*), and Largemouth Bass (*Micropterus salmoides*) were recorded at HUO14WM. No in-stream barriers were identified within the immediate vicinity of the Subject Lands (Figure 10 "Instream barriers in the Humber River Watershed"). Finally, as shown within Figure 22 of the FMP ("The Locations of the Aquatic habitat categories in the Humber River Watershed"), the Subject Lands contain both small and intermediate riverine warmwater habitat types.

3.2. Technical Methods and Field Studies

The ecological field program built on the work that was completed as part of the MESR (2025) submission and relies on the information reviewed as part of that report, including studies completed for the Region of Peel SABE Study (2022), the Preliminary EIS prepared by NRSI (2023), and the Erosion Hazard Assessment prepared by Geomorphix (2023). Additional field assessments have been completed in 2025 as part of this EIS.

The following ecological field investigations were conducted by Natural Resource Solutions Inc. (NSRI), within and adjacent to the Subject Lands, starting in the fall of 2022 and concluding in June 2023:

- Ecological Land Classification (ELC) and three-season botanical inventories (spring, summer and fall);
- Breeding bird surveys (two rounds);
- Amphibian call count surveys (three rounds);
- Bat habitat survey (one survey); and
- Aquatic habitat assessment (one survey)

Methodology for field studies completed by NRSI are detailed in the Preliminary EIS (2023), included in **Appendix D**.

Additional ecological field surveys conducted by GEI within the Subject Lands in 2025 include:

- Bat Acoustic Monitoring;
- Headwater Drainage Feature Assessment (HDFA); and
- Detailed geomorphic assessment.

Methodology for field surveys conducted by GEI are summarized in the following sections.

3.2.1. Bat Acoustic Monitoring

Survey methods were developed based on guidance from MECP, professional experience and MNR survey guidelines as outlined in "Bats and Bat Habitats: Guidelines for Wind Power Projects" (MNR 2011).

Surveys to detect bat species were carried out in June 2025 and were completed using Wildlife Acoustics Song Meter SM4BAT recording devices over a duration of ten consecutive evenings. The methods and results of these surveys are provided herein.

Survey stations were selected based on aerial interpretation, bat habitat assessments, and ELC vegetation community types. A total of two stations (ARPT) were identified on the Subject Lands associated with the thicket communities as shown on **Figure 4** (**Appendix A**).

Passive acoustic recorders were programmed to begin recording at sunset and to end recording at sunrise. In addition, the SM4BAT passive recorder microphones were elevated approximately 2 m above the ground to reduce background noise and echo. **Table 1** (**Appendix B**) summarizes the dates and times, and weather conditions encountered during bat acoustic surveys.

All ultrasonic recordings were filtered to eliminate recordings with high levels of noise or with no bat calls, and then further analyzed using SonoBat's auto-classification tool. Any calls with a positive identification were manually vetted by a wildlife ecologist with training in bat species identification by sonogram. Calls that were not identifiable to species by SonoBat were manually reviewed by a wildlife ecologist with training in bat species identification by sonogram to identify those calls with characteristics of Species at Risk bats (i.e. calls with frequencies greater than 40kHz). Where recorded, these calls are classified as Unknown Myotis calls in accordance with MECP guidance.

Both the NHIC (2025) database and the SARO list (O.Reg. 230/08) were reviewed to determine the current provincial status for each bat species detected.

3.2.2. Headwater Drainage Feature Assessment (HDFA)

Ahead of conducting the first round HDFA, GEI completed a desktop review to identify the locations of potential headwater drainage features (HDFs). This was completed through an ArcGIS mapping exercise using available LiDAR data to determine where potential flow paths may be located within the landscape based on relative topographic relief. During the first site visit, all areas of the Study Area were walked to identify potential HDFs. As per the HDFA Guidelines (CVC and TRCA 2014), two rounds of HDF surveys were completed (one in early spring and one in late spring). A third round in summer was not required, since all identified HDFs were dry during the second round.

3.2.3. Detailed Geomorphic Assessment

A detailed geomorphic assessment for the receiving features was completed on March 18, 2025 and consisted of the collection of a topographic survey of the Study Area at a sufficient level of detail to allow the measurement of the longitudinal profile of the watercourse and cross-sectional geometry.

Where possible, in-situ documentation of bankfull stage indicators was also undertaken, as well as riparian vegetation cover and general site conditions. The characteristics of bed and bank materials (e.g., composition, grain size, etc.) were also recorded. The Manning's roughness coefficient was estimated using a visual method, as outlined by Arcement & Schneider (1989). Cross-sectional measurements and bankfull dimensions, the estimate of Manning's roughness, and the gradient, were used to back-calculate bankfull hydraulics. The surveyed cross sections were entered into FlowMaster (hydraulics software) along with the estimated Manning's roughness, to obtain the relevant bankfull hydraulics.

Reaches SC(3)1-1 and SC(3)2-1 were not assessed, due to their relative location within the Study Area, as well as their small extent of definition.

4. Biophysical Characterization

4.1. Physiography, Geology and Soils

The Subject Lands are situated within the South Slope physiographic region, the landform region on the southern slope of the Oak Ridges Moraine. This region is characterized by a flat to gently rolling, drumlinized till plain. The soils of the South Slope generally exhibit high runoff potential, with limited infiltration capacity due to their fine-grained texture. Drumlins in the area are elongated, narrow landforms oriented up the South Slope and are scattered throughout the landscape. Streams in this region flow downslope, often forming sharply incised valleys within the till deposits (Chapman and Putnam, 1984).

Within the Subject Lands, as documented in the MESR (2025), soil types include topsoil/fill, clayey silt till, and sandy silt till. According to Ontario Geological Survey (OGS) mapping, the regional surficial geology is dominated by Halton Till — a clay- to silt-textured glacial till derived from glaciolacustrine deposits (OGS, 2025). The overburden material overlies the shales of the Queenston Formation and the interbedded shales and limestones of the Georgian Bay Formation. Based on OGS and MECP mapping, depth to bedrock ranges from approximately 5 to 20 metres below ground surface (mbgs), with shallower bedrock exposures noted along the Salt Creek valley within the Subject Lands.

4.1.1. Hydrogeological

The hydrogeological assessment completed as part of the MESR (2025) characterized the existing groundwater and soil conditions within the Subject Lands. Key findings are summarized as follows:

- **Soils and Permeability:** Shallow soils consist primarily of clayey silt to silty clay till. Published hydraulic conductivity values for these materials range from 1×10^{-6} to 1×10^{-8} m/s, indicating low permeability and limited lateral and vertical groundwater flow.

- **Groundwater Levels:** Measured groundwater levels range from approximately 5 m below ground surface (mbgs) to 0.4 mbgs. Seasonal high-water levels typically occur in the spring, with seasonal lows observed during summer months.

- **Dewatering Requirements:** Given the shallow groundwater conditions, temporary dewatering will likely be required during construction.

4.2. Landscape Ecology

The Subject Lands occur within the Lake Simcoe-Rideau Eco-region 6E, which extends from Lake Huron to the Ottawa River, and includes most of the Lake Ontario shore and the Ontario portion of the St. Lawrence River Valley. Ecoregion 6E falls within the Great Lakes-St. Lawrence Forest region, an area of moderate climate where natural succession leads to forests of shade tolerant hardwood species including Sugar Maple (*Acer saccharum*), American Beech (*Fagus grandifolia*), and shade intermediate species such as Red Oak (*Quercus rubra*) and Yellow Birch (*Betula alleghaniensis*), as well as associations of White Pine (*Pinus strobus*) and Red Pine (*Pinus resinosa*).

Figure 2 (**Appendix A**) depicts the broader landscape and potential movement and linkage corridors surrounding the Subject Lands for abiotic and biotic movement of organisms, matter and energy. While the lands surrounding the Subject Lands are dominated by agricultural land uses, several natural heritage features are present within the greater landscape. The primary linkages in the area are associated with the Salt Creek system which ultimately connects to the Humber River. The associated Salt Creek corridor connects woodlands and wetland community types, and provides permanent linkages for aquatic, semi-aquatic and terrestrial species.

4.3. Vegetation

The results from the NRSI ecological investigations completed in 2022 and 2023 have been summarized and presented within the subsections below.

4.3.1. Ecological Land Classification

The Subject Lands, topographically, consist of a large tableland portion, covered almost entirely by active agricultural fields and a hedgerow, with the valley slope portion covered by thicket communities and wetland communities.

Reed-Canary Grass Graminoid Meadow Marsh (MAM2-2) characterizes the floodplain of Salt Creek, with small pockets interspersed along the channel and tributary to Salt Creek. The riparian habitat within the Salt Creek corridor was characterized as Mineral Cultural Thicket (CUT1) that has been heavily, culturally impacted. The CUT1 community is described as being dominated by the highly invasive Common Buckthorn (*Rhamnus cathartica*).

The ELC mapping of the Subject Lands are presented on **Figure 3** (**Appendix A**), and a detailed description of each community is provided in Table 3 of the NRSI Preliminary EIS (**Appendix D**).

4.3.2. Botanical Inventory

In total, 112 vascular plants were documented by NRSI biologists during the spring, summer, and fall vegetation surveys. Of these, 56% are native to Ontario and 44% are exotic.

No SAR plants or Species of Conservation Concern (SCC) were observed during field surveys. A total of 3 locally significant plant species (L3) (TRCA 2008c) were observed within the Subject Lands, including White Spruce (*Picea glauca*), Strict Blue-eyed-grass (*Sisyrinchium montanum*), and Spotted St. John's-wort (*Hypericum punctatum*). The full species list completed by NRSI is provided in Appendix IV of the Preliminary EIS (**Appendix D**).

4.4. Wildlife

The results from the NRSI ecological investigations completed in 2022 and 2023 have been summarized and presented within the subsections below.

4.4.1. Breeding Birds

A total of six point count stations were surveyed by NRSI within the Subject Lands on June 5 and June 26, 2023. The locations of the point count stations are shown on **Figure 4** (**Appendix A**) and are marked as Breeding Bird Monitoring Stations (BMB). NRSI observed 35 bird species within the Subject Lands during bird surveys and other field surveys. All species observed within the Subject Lands are listed in Appendix IV in the NRSI Preliminary EIS (**Appendix D**)

During field surveys, NRSI detected two SAR birds in the vicinity of the Subject Lands:

- Bobolink – Threatened in Ontario: One male was recorded vocalizing approximately 100 m south of BMB-003 (Figure B-3, NRSI Preliminary EIS) outside the Subject Lands during the June 5, 2023, breeding bird survey. No suitable breeding habitat for Bobolink or other grassland birds was identified within the Subject Lands, suggesting the male was likely searching for territory.
- Barn Swallow – Special Concern in Ontario: A single Barn Swallow was observed foraging in proximity to the MAM2-2 located east of Salt Creek; however, no suitable nesting habitat was observed within the Subject Lands.

4.4.2. Amphibians

A total of four amphibian call count stations (ANR) were surveyed by NRSI in 2023 within the Subject Lands. Call count station locations are shown on **Figure 4**, (**Appendix A**).

During breeding amphibian call count surveys, two species were recorded: Gray Treefrog (*Hyla versicolor*), and Western Chorus Frog (Great Lakes/St. Lawrence – Canadian Shield population) (*Pseudacris triseriata*). These species are provincially ranked S5 (common and secure) or S4 (apparently common and secure). The results of the monitoring are shown in Appendix IV of the Preliminary EIS (**Appendix D**).

4.4.3. Bat Habitat Assessment

Based on available records, numerous SAR are reported from the vicinity of the Subject Lands, suggesting the potential presence for SAR bats. Leaf-off bat habitat assessments and tree inventories conducted by NRSI identified 13 candidate bat roost trees (e.g., cavities, knotholes, sloughing bark) within the Subject Lands. The locations of candidate bat roost trees (RST) are identified within **Figure 4** (**Appendix A**).

Suitable bat roosting tree density surveys were completed within cultural thickets, which do not meet the ecosite criteria to qualify as bat maternity colony SWH. However, suitable roosting habitat for SAR bats may be present within the Subject Lands.

4.4.4. Bat Acoustic Monitoring

GEI completed acoustic monitoring for the Subject Lands in June 2025. Eight bat species were confirmed to be present within the woodlands: Big Brown Bat *(Eptesicus fuscus),* Silver-haired Bat *(Lasionycteris noctivagans),* Hoary Bat *(Lasiurus cinereus*), Eastern Red Bat (*Lasiurus borealis*), Tri-colored Bat (*Perimyotis subflavus*), Little Brown Myotis *(Myotis lucifugus),* Small-footed Myotis (*Myotis leibii),* and Northern

Myotis *(Myotis septentrionalis).* During 20 detector evenings of acoustic surveys, 824 calls were recorded and identifiable to species.

Of the 824 calls that were identifiable to species, 631 were Big Brown Bat, 134 were Silver-haired Bat, 21 were Hoary Bat, 12 were Eastern Red Bat, 11 were Eastern Small-footed Myotis, 1 was Northern Myotis, 13 were Little Brown Myotis, and 1 was a Tri-coloured Bat (**Table 2**, **Appendix B**). An additional 3 calls showed Myotis characteristics (i.e., calls with frequencies greater than 40 kHz).

Little Brown Myotis, Eastern Small-footed Myotis, Northern Myotis, Tri-coloured Bat, Eastern Red Bat, Silver-haired Bat, and Hoary Bat are listed as Endangered on the SARO List. These individuals were predominantly detected (83% of confirmed calls) at station ARPT-02 associated with the northern portion of the CUT1 community on the Subject Lands. The remaining 17% of SAR bat calls occurred at station ARPT-01, associated with the southern portion of the CUT1 community.

Since the detectors were deployed over ten detector evenings, the following call averages per night were recorded by species at ARPT-01: 47.5 by Big Brown Bat, 10.7 by Silver-haired Bat, 1.6 by Hoary Bat, 1.2 by Eastern Red Bat, 1 by Eastern Small-footed Myotis, 0.1 by Northern Myotis, 1.3 by Little Brown Myotis, and 0.1 by Tri-coloured Bat. These are relatively low call abundances and while numbers of calls recorded do not necessarily correspond to numbers of individuals, it can be assumed the overall abundance of each species is low given that these calls were recorded over ten consecutive evenings.

The total calls recorded for SAR bats were generally too few to confirm suitability of SAR habitat, and the nightly recordings for all species apart from Silver-haired Bats showed only a couple of passes. Given the relatively small number of bat habitat trees identified and relatively low number of calls recorded, the CUT1 community is considered to be of lower quality as bat habitat.

4.4.5. Incidental Wildlife Observations

NRSI observed two mammal species incidentally during field surveys in 2022 and 2023, including Eastern Coyote (*Canis latrans*) and White-tailed Deer (*Odocoileus virginianus*). These species are commonly observed within the TRCA (2019). All incidental wildlife observations are included within Appendix VII of the Preliminary EIS (**Appendix D**).

4.5. Aquatic Environment

4.5.1. Aquatic Habitat Assessment

An AHA of the Subject Lands was completed by NRSI on April 15, 2022. The AHA was focused on the section of Salt Creek that bisects the southern portion of the site and consisted of a visual survey of existing in-stream and riparian habitat conditions along the watercourses.

Salt Creek is a perennial watercourse originating north of the Subject Lands and flowing southeast through its extent. The channel exhibits a natural meandering pattern with evidence of erosion from high flow events, including bank undercutting, steep slopes, and exposed overburden. The gradient is low to moderate, supporting riffle, run, and pool habitats. Substrate composition is relatively uniform, consisting mainly of sand, silt, gravel, cobble, and pebble, with occasional exposures of hardpan clay and limestone

bedrock. Fine sediments such as silt and detritus are limited to slower-flowing sections, while coarse woody debris contributes to in-stream habitat complexity. Sparse aquatic vegetation, including grasses and Watercress (*Nasturtium officinale*), occurs in shallow and upper reaches, suggesting localized groundwater inputs.

Within the Subject Lands, the Salt Creek floodplain ranges from 0 to 20 metres in width and supports meadow marsh (MAM2-2) communities. Adjacent vegetation consists of Mineral Cultural Thicket (CUT1), dominated by Common Buckthorn with a mixed herbaceous and grass understory extending up to 120 metres from the channel. Beyond these areas, land use transitions to low-density residential and active agricultural lands. Creek banks are moderately vegetated with emergent and terrestrial species, as well as tree and shrub roots that contribute to bank stability. The canopy provides approximately 60% shading along the creek corridor.

4.5.2. Fluvial Geomorphic Assessment

The fluvial geomorphic assessment, performed by GEO Morphix Ltd. (GEO Morphix Ltd., 2023) serves to characterize existing conditions of watercourses within the Study Area, delineate meander belt limits associated with the watercourses, and to inform the determination of environmental constraint limits.

The key findings of the geomorphic assessment completed by GEO Morphix Ltd. are summarized below:

- **Tributary Characterization:** Tributaries of Salt Creek traverse the Study Area and are fully regulated by the TRCA. Reach boundaries were originally established through the Scoped Subwatershed Study (SWS) for the SABE and were generally maintained, with minor adjustments based on 2023 field observations.

- **Rapid Assessments:** GEO Morphix (2023) conducted rapid geomorphic assessments for each reach using the Rapid Geomorphic Assessment (RGA), Rapid Stream Assessment Technique (RSAT), and Downs Method. RGA scores ranged from 0.37 (transition/stressed) to 0.59 (in adjustment), while RSAT scores ranged from 33 (good) to 35 (excellent). Results from the Downs Method were consistent with RGA findings, indicating similar channel stability trends.

- **Erosion Hazard and Meander Belt Delineation:** Meander belt widths for two unconfined reaches were delineated using empirical relationships and an assessment of downstream meander amplitudes. For confined valley settings, the toe erosion allowance was determined in accordance with Ontario's *Technical Guide for River and Stream Systems: Erosion Hazard Limit* (2002). The final erosion hazard limit informed the delineation of Redside Dace Occupied Habitat.

4.5.3. Headwater Drainage Feature Assessment

Within the Subject Lands, four HDFs (HDFs- H1S1, H2S1/S2, H3S1/S2 and H4S1/S2) were identified. TRCA policies require HDFs to be identified and managed in accordance with their Evaluation, Classification and Management of Headwater Drainage Features Guideline (CVC and TRCA 2014).

HDFs are defined as non-permanently flowing drainage features that contribute to the overall health of the watershed. As such, the selection of the appropriate management recommendations is required to adequately protect or mitigate the feature and its ecological functions from any proposed development.

GEI completed 3 rounds of surveys in 2025 (April 6, May 20, July 22), utilizing the guidance provided in Part Two of the HDF Guidelines (CVC and TRCA 2014), which addresses the approach for assessment and classification of the HDFs. By design, the HDF Guidelines are focused on the classification of ephemeral and intermittent HDFs and are not intended to characterize those features that are watercourses.

Part 2 of the HDFA Guidelines provides an approach to classify HDFs by providing a step-by-step characterization of specific functions that may be associated with the features assessed, including hydrology, riparian function, and provision of fish or terrestrial habitat. **Appendix B, Table 3** highlights the key components of this analysis based on the three rounds of HDFA completed. A description of each HDF reach is provided below.

HDF H1S1

This feature is located within an active agricultural field characterized as a poorly defined erosional swale, H1S1 demonstrates a complete lack of terrestrial or riparian growth. The feature receives overland flow from surrounding agricultural field before connecting into the roadside ditch along Airport Road. H1S1 is an ephemeral feature, flowing in the early spring but dry by late spring.

Per the HDFA guidelines, H1S1 has been assigned a *Mitigation* recommendation.

HDF H2S1

H2S1 is characterized as a poorly defined swale. The feature originates within the center of an active agricultural field, conveying flow in a southwestern direction to the edge of the adjacent NHS corridor. H2S1 demonstrates a complete lack of terrestrial or riparian growth. The feature was evaluated to provide contributing hydrologic and fish habitat function to downstream stream reaches of occupied fish habitat.

Per the HDFA guidelines, H2S1 has been assigned a *Mitigation* recommendation.

HDF H2S2

H2S2 is characterized as a poorly defined swale within the CUT1 community, providing important (per the guidelines) riparian function. The feature receives agricultural drainage from H2S1, conveying these flows southwestward towards Salt Creek. H2S2 crosses the southern boundary of the Subject Lands prior to its connection with Salt Creek. The feature was evaluated to provide contributing hydrological and fish habitat function.

Per the HDFA guidelines, H2S2 has been assigned a *Conservation* recommendation.

HDF H3S1

H3S1 is characterized as a poorly defined swale within the CUT1 community, providing important (per the guidelines) riparian function. The feature appears to receive overland drainage from the active agricultural field to the west of the Subject Lands. H3S1 flows generally eastward towards Salt Creek. The feature provides contributing fish habitat function to occupied reaches downstream. H3S1 was flowing at the time of the first round, held isolated pools during the second, and was completely dry by the third round of evaluation.

Per the HDFA guidelines, H3S1 has been assigned a *Conservation* recommendation.

HDF H3S2

H3S2 is characterized as an artificially channelized feature within the CUT1 community, representing important (per the guidelines) riparian function. H3S2 receives drainage from H3S1 but is also suspected to receive additional drainage from a buried tile drainage outlet. Due to the collapsed banks at the upstream end of H3S2, the presence of a buried tile drainage outlet could not be confirmed. H3S2 connects with Salt Creek at the southern edge of the Subject Lands. Due to its steep banks, H3S2 is not navigable by fish species and has been evaluated to provide contributing fish habitat. The feature was flowing at the time of the first round, held isolated pools during the second, and was completely dry by the third round of evaluation.

Per the HDFA guidelines, H3S2 has been assigned a *Conservation* recommendation.

HDF H4S1

H4S1 is characterized as a poorly defined erosional swale. The feature originates along the northern edge of the agricultural field, conveying flow westward. H4S1 demonstrates a complete lack of terrestrial or riparian growth. The feature was evaluated to provide contributing hydrologic and fish habitat function to downstream stream reaches of occupied fish habitat.

Per the HDFA guidelines, H4S1 has been assigned a *Mitigation* recommendation.

HDF H4S2

H4S2 is a wetland (MAM2-2) located along the northern boundary of the Subject Lands, evaluated as providing valued terrestrial and important riparian habitat. The feature does not convey flow through any type of defined channel but does connect with Salt Creek along its western side. H4S2 represents contributing fish habitat. The feature held water at the time of the first round of inspection but was generally dry by the time of the second round.

Per the HDFA guidelines, H4S2 has been assigned a *Conservation* recommendation.

Management Recommendations

Management recommendations for all HDFs were decided upon utilizing Part 3 of the HDF Guidelines (CVC and TRCA 2014). This section of the Guidelines provides guidance in linking the habitat classification information to specific management recommendations that may be applied to those features. To assist, the HDFA Guidelines include Figure 2: "Flow Chart Providing Direction on Management Options". The flow chart depicts various decision points associated with hydrology, fish habitat, riparian vegetation and terrestrial habitat, and ultimately leads the user to an appropriate management recommendation for each HDF segment. The guidelines and information collected from the surveys were utilized to determine management recommendations for each HDF. All HDF reaches and their management recommendations are depicted on **Figure 5** (**Appendix A**) and discussed in **Table 3** (**Appendix B**). The following management recommendations have been identified for each HDF reach located on the Subject Lands:

Conservation (H2S2, H3S1, H3S2, H4S2)

- Maintain, relocate and/or enhance drainage feature and its riparian corridor zone;
- If catchment drainage had been previously removed or will be removed due to diversion of stormwater flows, restore lost functions through enhanced lot level controls (i.e. restore original catchment using clean roof drainage), as feasible;
- Maintain or replace on-site flows using mitigation measures and/or wetland creation, if necessary;
- Maintain or replace external flows;
- Use natural channel design techniques to maintain or enhance overall productivity of the reach; and/or
- Drainage feature must connect to downstream.

Mitigation (H1S1, H2S1, H4S1)

- Replicate or enhance functions through enhanced lot level conveyance measures, such as well-vegetated swales (herbaceous, shrub and tree material) to mimic online wet vegetation pockets or replicate through constructed wetland features connected to downstream;
- Replicate on-site flow and outlet flows at the top end of system to maintain feature functions with vegetated swales, bioswales etc. If catchment drainage has been previously removed due to diversion of stormwater flows, restore lost functions through enhanced lot level controls (i.e., restore original catchment using clean roof drainage);
- Replicate functions by lot level conveyance measures (e.g. vegetated swales) connected to the natural heritage system, as feasible and/or Low Impact Development (LID) stormwater options.

5. Analysis of Ecological and Natural Heritage Significance

Eight types of significant natural heritage features are defined in the PPS (MMAH 2024), as follows:

- Significant wetlands;
- Significant coastal wetlands;
- Significant woodlands;
- Significant valleylands;
- SWH;
- Fish habitat;
- Habitat of Endangered and Threatened species; and
- ANSI.

The presence or absence of these natural heritage features within or adjacent to the Subject Lands is discussed in the following subsections. The NHRM (MNR 2010) was referenced to assess the potential significance of natural areas and associated functions. Where significant natural heritage features are present, the sensitivity of those features is also discussed.

5.1. Wetlands

Within Ontario, provincially significant wetlands (PSW) are identified by the MNR or by their designates. Other evaluated or unevaluated wetlands may be identified for conservation by the municipality or the conservation authority.

There are no PSWs located on or within 120 m of the Subject Lands based on Geospatial Ontario mapping. However, two unevaluated wetlands associated with Salt Creek were identified on the Subject Lands. In 2024, NRSI delineated unevaluated wetlands within floodplain of Salt Creek on the Subject Lands with TRCA staff. These wetlands were both characterized as Reed-canary grass mineral meadow marsh (MAM2-2). Due to their size and association with the Salt Creek valleyland, these wetland communities are identified as candidate PSW.

As stated in the Ontario Wetland Evaluation System (OWES) protocol (MNRF 2022), wetlands smaller than 2 ha are generally not evaluated for significance. However, very small wetlands can provide habitat for wildlife or serve other ecological, hydrological, hydrogeological or social functions and therefore a wetland smaller than 2 ha can undergo a full wetland evaluation provided that the rationale for doing so is provided.

One additional wetland in the southwest corner of the site was identified. This wetland was also identified by NRSI as a MAM2-2 community. Given that this wetland is smaller than 2 ha, and that none of the results from the field investigations have identified any important ecological, hydrological, hydrogeological, or social functions associated with this feature, it is treated as non-significant.

5.1.1. Feature-Based Water Balance

A Weland Water Balance Risk Assessment was completed as part of the MESR for all wetlands within the Tullamore North Employment Secondary Plan Area and in accordance with the TRCA's Wetland Water Balance Risk Evaluation (2017). Results for the wetlands located within Subject Lands and assessed in the EIS are provided in **Table 4, Appendix B.** All of the wetlands within the Subject Lands have catchment areas which extend into the proposed development area, as well as a large external catchment area. All wetlands were found to have a high magnitude of hydrologic change based on the presence of upgradient ecologically significant groundwater recharge areas. Wetlands also had high ecological sensitivity due to the presence of breeding amphibians.

A Feature-based Water Balance Assessment was undertaken and is summarized in the Hydrogeological Investigation Report (C.F. Crozier & Associates Inc. 2025).

5.2. Significant Coastal Wetlands

Similar to significant wetlands, the MNR or their designates identify significant coastal wetlands present on the landscape. Coastal wetlands are defined in the NHRM (MNR 2010) as:

a) *"any wetland that is located on one of the Great Lakes or their connecting channels (Lake St. Clair, St. Mary's, St. Clair, Detroit, Niagara and St. Lawrence Rivers); or*

b) *Any other wetlands that is on a tributary to any of the above-specified water bodies and lies, either wholly or in part, downstream of a line located two km upstream of the 1:100-year floodplain (plus wave run-up) of the large water body to which the tributary is connected."*

No significant coastal wetlands are identified on the Subject Lands and would not be expected given the distance of the Subject Lands from the waterbodies noted above.

5.3. Significant Woodlands

Significant woodlands are identified by the planning authority in consideration of criteria established by the MNR. Under the NHRM (2010), woodlands are defined as:

> *"...treed areas that provide environmental and economic benefits to both the private landowner and the general public, such as erosion prevention, hydrological and nutrient cycling, provision of clean air and the long-term storage of carbon, provision of wildlife habitat, outdoor recreational opportunities, and the sustainable harvest of a wide range of woodland products. Woodlands include treed areas, woodlots or forested areas and vary in their level of significance at the local, regional and provincial levels."*

Significant woodlands are identified by the planning authority in consideration of criteria established by the MNR. Woodlands, as defined by the Peel OP (2022), include woodlots, cultural woodlands, cultural savannahs, plantations and forested areas and may also contain remnant of old growth forests. They further define woodlands as any area greater than 0.5 ha that has:

a) *A tree crown cover of over 60% of ground, determinable from aerial photography, or;*
b) *A tree crown cover of over 25% of the ground, determinable from aerial photography, together with on-ground stem estimates of at least:*
   i. *1,000 trees of any size per hectare;*
   ii. *750 trees measuring over five centimeters in diameter at breast height (1.37m), per hectare;*
   iii. *500 trees measuring over 12 centimeters in diameter at breast height (1.37m), per hectare; or*
   iv. *250 trees measuring over 20 centimeters in diameter at breast height (1.37m), per hectare (densities based on the Forestry Act of Ontario 1998); and, which have a minimum average width of 40 meters or more measured to crown edges.*

In accordance with the above definition, natural treed communities (Coniferous Forest, FOC; Mixed Forest, FOM; Deciduous Forests, FOD) are considered woodlands. Cultural woodlands (CUW) may potentially be excluded from the woodland definition based on an assessment of the stem density criteria above (as these features have less than 60% crown cover). A cultural plantation may also be excluded from consideration as a woodland if it meets one of the following characteristics:

a) managed for production of fruits, nuts, Christmas trees, nursery stock or other similar agroforestry type uses;
b) managed for tree products with an average rotation of less than 20 years (e.g. hybrid willow or poplar); or
c) established and continuously managed for the sole purpose of complete removal at rotation, as demonstrated with documentation acceptable to the Region or local municipality, without a woodland restoration objective. (Section 2.14.31, Peel OP)

Woodland patches are considered part of the same continuous woodland if they are within 20 m of each other.

The natural areas within the Salt Creek corridor of the Subject Lands were characterized by NRSI as CUT1 impacted by previous disturbance and regeneration. Based on the Peel OP (2022) definition, cultural thickets do not meet the definition of a woodland community. However, as the CUT1 is dominated by Common Buckthorn (*Rhamnus cathartica*), and the Town of Caledon classifies Buckthorn as a tree, the full extent of the CUT1 feature located to the east and the west of Salt Creek may be considered a woodland community by the Town.

Woodland Core Areas

All woodlands within the Tullamore North Secondary Plan Study Area, including those within the Subject Lands, were identified as candidate Core Area Woodlands. This is consistent with the findings within the SABE SWS (i.e., all woodlands within the Study Area were identified as Key Woodland Features), as well as the Caledon OP (i.e., all woodlands within the Study Area were identified as Significant Woodlands). GEI has reviewed the data collected by NRSI as well as historic aerial imagery to provide an evaluation of the significance of these woodland features.

The Caledon OP designates a woodland as 'Natural Features and Areas' if it meets one or more of the criteria for Core Area Woodland on Table 1 of the Peel OP. Woodlands are designated as 'Supporting Features and Areas' under the Caledon OP if the meet one or more criteria for NAC woodlands in Table 1 "Criteria and Thresholds for the Identification of Core Areas, Natural Areas and Corridors (NAC) and Potential Natural Areas and Corridors (PNAC) Woodlands" of the Peel OP or if it is ecologically important in terms of species composition, age, or size.

A review of the Peel OP was further completed to determine whether the woodlands within the Study Area are Core Area, NAC, or PNAC. As shown within Table 1 of the Peel OP, Core Areas are any woodlands within an Urban System that are equal to or greater than 4 ha in size, or that supports globally or provincially significant species or select vegetation communities. The woodland overlapping the Subject Lands exceeds the size criteria of 4ha, satisfying the designation as a Core Area woodland. The woodland also satisfies the NAC woodland criteria for linkage functions, proximity to another significant feature, and surface water quality.

Based on the existing conditions of the woodland on the Subject Lands, further analysis, supported by site-specific field investigations, may support excluding portions of the feature as a Core Area Woodland, in accordance with Caledon OP policy 13.11.4. Treed communities that are dominated by invasive, non-native tree species such as Buckthorn, Norway Maple (*Acer platanoides*), or other highly invasive species may be excluded as a Core Area Woodland or Significant Woodland subject to site-specific studies that consider the degree of threat posed, potential impacts to ecological functions or biodiversity of nearby native communities, and the projected natural succession of the community.

Field data collected by NRSI in 2023, indicated that the woodland has been heavily culturally impacted and is considered to be of poor quality. There are no characteristics of an old-growth forest and limited native species diversity, with invasive European Buckthorn dominant in the sub-canopy, understory, and ground layers. Buckthorn is a Category 1 invasive species that is regulated under *Ontario's Weed Control Act* as a noxious weed that can negatively impact agricultural crops. The woodland provides minimal economic or social functional value and European Buckthorn is likely to continue to impact adjacent active agricultural operations or establish within adjacent wetlands and buffers when farming activity stops.

On March 19th, 2025 GEI completed a woodland assessment within the area proposed for development for a more detailed assessment of woodland composition. A total of 13 plots were surveyed within the CUT1 on the east side of Salt Creek. The assessment confirmed that the area was dominated by Buckthorn and Hawthorn. Only trees with a DBH larger than 10cm were assessed for health and structural conditions but all trees within each plot were identified. In total, 129 trees with a DBH greater than 10cm were assessed, and 2,335 trees with a DBH below 10cm were documented. Of those species below 10cm DBH, approximately 97% were Buckthorn or Hawthorn. Trees larger than 10cm DBH primarily included White Elm, Slippery Elm, Buckthorn, Hawthorn, and Apple.

It is GEI's recommendation that, consistent with the Peel OP woodland definition, the Buckthorn-dominated cultural thicket community be excluded as a Core Area woodland. However, given that the woodland satisfies Peel OP criteria for NAC based on its location within the Salt Creek Valleyland and proximity to the watercourse and wetlands, the woodland should be designated as Supporting Features and Areas.

5.4. Significant Valleylands

Significant valleylands should be defined and designated by the planning authority. General guidelines for determining significance of these features are presented in the NHRM (MNR 2010) for Policy 2.1 of the PPS. Recommended criteria for designating significant valleylands include prominence as a distinctive landform, degree of naturalness, and importance of its ecological functions, restoration potential, and historical and cultural values. Table 8-1 of the NHRM provides ten recommended evaluation criteria for determining significant valleylands, with each criteria containing a number of standards to be used in assessing those criteria. An evaluation for the assessment of valleyland significance was undertaken for the watercourses within the Subject Lands using Table 8-1 as the framework.

The Salt Creek valleyland within the Subject Lands met several criteria for significance. According to the Salt Creek Erosion Hazard Assessment and Redside Dace Habitat Delineation Report, prepared by GeoMorphix in 2023, the average meander belt width of the valleyland was determined to be 31 meters, exceeding the 25-meter minimum required to meet the landform prominence criteria. The waterbody within the valleyland is buffered by naturally vegetated areas on both sides, satisfying the criteria for Degree of Naturalness, although it should be noted that these communities are heavily impaired by invasive species in many areas. The main body of Salt Creek is also recognized as Redside Dace habitat, fulfilling the criteria for unique communities and species.

Given the above, the Salt Creek valleyland is considered a significant valleyland within the Subject Lands.

5.5. Significant Wildlife Habitat

SWH is one of the more complex natural heritage features to identify and evaluate. There are several provincial documents that discuss identifying and evaluating SWH including the NHRM (MNR 2010), the *Significant Wildlife Habitat Technical Guide* (MNR 2000), and the SWH Eco-Region Criterion Schedule (MNR 2015). The Subject Lands are located in Ecoregion 6E and were therefore assessed using the *Significant Wildlife Habitat Criteria Schedules for Ecoregion 6E* (MNR 2015).

There are four broad categories of SWH types: seasonal concentration areas, rare vegetation communities and specialized wildlife habitat, habitats of species of conservation concern, and animal movement corridors. The following subsection discusses each of these broad categories in relation to the Subject Lands.

5.5.1. Seasonal Concentration Areas

Seasonal concentration areas are those sites where large numbers of a species gather at one time of the year, or where several species congregate. Seasonal concentration areas include deer yards; wintering sites for snakes, bats, raptors, and turtles; waterfowl staging and molting areas; bird nesting colonies; shorebird staging areas; and migratory stopover areas for passerines or butterflies. Only the best examples of these concentration areas are designated as SWH. Areas that support Special Concern species or provincially vulnerable to imperiled species (S1–S3) or that support a large proportion of the population are examples of seasonal concentration areas that should be designated as significant.

No seasonal concentration areas were identified on the Subject Lands.

5.5.2. Rare Vegetation Communities and Specialized Wildlife Habitat

Rare habitats are those with vegetation communities considered rare in the province. S-Ranks are rarity rankings applied to species at the provincial level and are part of a system developed by the Nature Conservancy (Arlington, VA). Generally, community types with S-Ranks of S1–S3 (extremely rare to rare/uncommon in Ontario), as defined by the NHIC, could qualify. These habitats are assumed to be at risk and likely support significant wildlife species.

Specialized habitats are microhabitats that are critical to some wildlife species. The NHRM (MNR, 2010) defines specialized habitats as those that provide for species with highly specific habitat requirements, areas with exceptionally high species diversity or community diversity, and areas that provide habitat that greatly enhances species' survival. Only habitats identified as exceptional examples, such as supporting a great diversity of species or large number of individuals, are typically designated as significant.

No rare or specialized habitats were identified on or adjacent to the Subject Lands

5.5.3. Habitats of Species of Conservation Concern

Species of conservation concern include those that are Special Concern and provincially rare (S1–S3). Several specialized wildlife habitats are also included in this SWH category, such as terrestrial crayfish habitat and significant breeding bird habitats for marsh, open country, and early successional bird species. Habitats of species of conservation concern do not include habitats of Endangered or Threatened species as identified by the *Endangered Species Act*. **Section 5.7** discusses Endangered and Threatened species.

NRSI previously completed a SWH Screening for the Subject Lands, which is included in Appendix III of the Preliminary EIS (**Appendix D**). The SWH screening discusses all types of SWH relevant to the Subject Lands based on background review and field surveys completed for the Subject Lands.

During anuran call surveys, NRSI confirmed the presence of Western Chorus Frog on the Subject Lands, documenting calling from approximately 200m west of survey station ANR-002 (**Figure 4, Appendix A).** Based on the presence of Western Chorus Frog, NRSI identified the presence of SWH for Special Concern and Rare Wildlife species. In Canada, COSEWIC has assessed the Great Lakes / St. Lawrence – Canadian Shield populations of Western Chorus Frog as Threatened, and the Carolinian population as not at risk. However, in Ontario, terrestrial SAR are regulated under the ESA and both populations of Western Chorus Frog are assessed as not at risk. As such, the presence of Western Chorus Frog within the wetland communities is not considered SWH as defined by MNR.

Barn Swallow, a Special Concern species, was observed foraging over the wetland in the north portion of the Subject Lands. However, there are no suitable nest structures located on the Subject Lands. No other habitat of species of conservation concern was identified on the Subject Lands.

Candidate habitat for Terrestrial Crayfish may be present on adjacent lands, within the marsh habitat that extends along the length of the Salt Creek floodplain.

5.5.4. Animal Movement Corridors

Animal movement corridors are areas traditionally used by wildlife to move from one habitat to another. This is usually in response to different seasonal habitat requirements. Animal movement corridors are only identified as SWH where a confirmed or candidate significant wildlife habitat has been identified by MNR or the planning authority.

For ecoregion 6E, animal movement corridors include Amphibian Movement Corridors, which are a required component of Amphibian Breeding Habitat SWH (wetlands).

5.6. Fish Habitat

Fish habitat is defined in the federal *Fisheries Act* as "water frequented by fish and any other areas on which fish depend directly or indirectly to carry out their life processes, including spawning grounds and nursery, rearing, food supply and migration areas."

Both the high constraint (SC(3)-1/(3)-2) and medium constraint (SC(3)2-1) watercourses are assumed to support direct fish habitat. The low constraint watercourse (SC(3)1-1) is assumed to provide indirect fish habitat. HDFs (H1S1, H2S1/S2, H3S1/S2 and H4S1/S2) provide indirect fish habitat.

5.7. Habitat of Endangered and Threatened Species

Endangered and Threatened species are those identified on the SARO list (O. Reg. 230/08). GEI reviewed existing background information and identified known SAR records from the broader landscape surrounding the Subject Lands, as summarized in **Section 3.1**. Furthermore, NRSI completed targeted ecological field surveys, which were supplemented by GEI. The results of the field studies are summarized in **Section 3.2**.

Individual trees within the Subject Lands have the potential to provide SAR bat roosting/breeding habitat. All woodlands and hedgerows were identified as potential SAR bat habitat.

The main tributary of Salt Creek is occupied Redside Dace habitat;

5.8. Significant Areas of Natural and Scientific Interest

ANSIs are identified by the MNR based on having provincially or regionally significant representative geological or ecological features.

There are no ANSIs located on or within 120m of the Subject Lands.

5.9. TRCA Regulated Features

Pursuant to O. Reg. 41/24, the TRCA has the authority to regulate development within its regulated areas. The TRCA regulates the following:

- hazardous lands;
- wetlands;
- river or stream valleys the limits of which shall be determined in accordance with the regulations;
- areas that are adjacent or close to the shoreline of the Great Lakes-St. Lawrence River System or to an inland lake and that may be affected by flooding, erosion or dynamic beach hazards, such areas to be further determined or specified in accordance with the regulations; and
- other areas in which development should be prohibited or regulated, as may be determined by the regulations. 2017, c. 23, Sched. 4, s. 25.

Natural hazards found within the Subject Lands include:

1. Reed Canary Grass Mineral Meadow Marsh (MAM2-2) Wetlands;
2. Flood hazards (associated with watercourses and valleylands);
3. Erosion hazards (associated with unconfined valleylands and watercourses); and
4. Slope stability hazards (associated with confined valleylands – includes staked top of bank and long term stable top of slope).

5.10. Town of Caledon – Natural Environment System

Natural heritage features were assessed in the context of both the current in-force Caledon OP (2024 Consolidation) and the Caledon OP (2024). Within the current in-force OP (Caledon, 2024 Consolidation), the Town's Ecosystem Framework includes Natural Core Areas, Natural Corridors, Supportive Natural Systems, and Natural Linkages, which are all identified within Table 3.1 of the OP.

The Caledon OP (2024) defines a Natural Environment System as a comprehensive NHS and water resource system. The components of these align closely with the Region of Peel's Core Areas, NACs and PNACs.

As evaluated within the sections above, the following Natural Areas and Features and Supporting Areas and Features are identified within the Subject Lands:

- Significant Valleylands;
- Valley and stream corridors meeting one or more of the criteria for Core Area valley and stream corridors in Table 2 of the Peel Region OP.
- Unevaluated wetlands, including candidate PSW;
- Woodlands meeting one or more of the criteria for NAC woodland in the Peel Region OP Table 1;
- Fish habitat;
- Habitat of aquatic SAR:
- Habitat of endangered and threatened species defined in accordance with the *Endangered Species Act*;
- Enhancement Areas; and
- Linkages.

5.11. Region of Peel – Greenland System

A review of the Peel OP (2022) was undertaken to understand what components of the Regional Greenlands System, as defined in the Peel OP, are present and adjacent to the Subject Lands. The Greenlands System is comprised of Core Areas, NACs and PNACs, as previously defined in section 2.3.

As evaluated within the sections above, the following Core Areas, NACs, and PNACs are identified within the Subject Lands:

- Unevaluated wetlands, including candidate PSWs;
- Significant Valley and Stream Corridors (associated with all medium and high constraint watercourses);
- Woodlands meeting one or more of the criteria for NAC woodland in Table 1;
- Fish habitat (direct and indirect);
- Habitat for aquatic SAR (Redside Dace);
- Habitat of endangered and threatened species (Redside Dace, candidate SAR bat habitat); and
- Enhancement areas, buffers and linkages.

5.12. Summary of Ecological Components Subject to Impact Assessment

Identified natural heritage features on the Subject Lands include the following:

- Unevaluated wetlands, including candidate PSWs; and
- Valley and Stream Corridors (associated with all medium and high constraint watercourses).
- Woodlands meeting one or more of the criteria for NAC woodland in Table 1;
- Fish habitat (direct and indirect);
- Habitat for aquatic SAR (Redside Dace);
- Habitat of endangered and threatened species (Redside Dace, candidate SAR bat habitat); and
- Enhancement areas, buffers and linkages.

6. Proposed Development

The Subject Lands are proposed to be developed as future employment lands, with two distinct parcels, each housing a proposed warehouse and associated parking and truck turnarounds. Building A, located on the proposed north parcel has a footprint of 22,946.27 square meters. Building B, located on the proposed south parcel has a proposed footprint of 47,386.21 square meters. Retaining walls are proposed under the buildings in the southwest corner of Building A, and the southeast corner at the rear of Building B. The Site Plan is overlaid on aerial imagery in **Figure 7** (**Appendix A**).

As discussed, it is the consultant team's opinion that portions of the natural heritage features are not Core Areas given the ecological impairment associated with the prevalence of invasive species and are therefore not required to be retained in place; however, efforts were taken to retain naturally occurring communities with higher ecological functions.

The existing Salt Creek corridor will be retained in place and buffered and all existing wetlands associated with Salt Creek will also be retained in place.

A portion of the CUT1 will be removed and compensated on site at a 1:1 ratio within the area located west of Salt Creek that has been assessed and determined to meet the Town of Caledon's woodland exclusionary clause of the Woodland definition. The Arborist Report and Tree Preservation Plan (C.F. Crozier & Associates Inc., 2025) have assessed the trees within and adjacent to the proposed development and has identified 127 individual trees for removal. Species identified for removal are limited to European Buckthorn, Hawthorn (*Crataegus sp.*), Apple (*Malus sp.*), Pear (*Pyrus sp.*), and Slippery Elm (*Ulmus rubra*). In addition to the individual trees identified for removal, ten tree groupings with trees under 10cm DBH were inventoried. All ten tree groupings primarily contained European Buckthorn and Hawthorn.

The woodland compensation will occur through restoration of the area located on the west side of Salt Creek as described in **Section 9**. Woodland plantings will occur adjacent to the retained woodland and within Redside Dace occupied habitat. Outside of the removal of the CUT1, all other retained and created natural heritage features will be buffered from adjacent development (buildings, parking lots, SWM infrastructure) and property boundaries.

As recommended in the MESR, the post-development drainage patterns have been designed to match pre-development conditions and ensure drainage for each site is contained within each individual parcel. Stormwater design for the Subject Lands include a combination of rooftop storage, underground storage chambers, and infiltration galleries. Additional details on the proposed development and site servicing is provided in the Servicing & Stormwater Management Report prepared by C.F. Crozier & Associates Inc. and submitted under separate cover.

External drainage entering the northwest corner of the site will be directed to Salt Creek through a swale along the north edge of the north parcel. The swale will convey the Regional storm event and maintain existing drainage inputs to Salt Creek.

A SWM outfall is proposed for each parcel. Both outfalls will be directed toward Salt Creek and located along the edge of the retained woodland (near the top of slope). Each outfall will consist of a headwall that will convey flows from the underground storage tanks into a spillway before outletting to Salt Creek. The headwalls and spillways will be located within the woodland setback.

Rooftop runoff will be directed to one of two infiltration galleries on each proposed parcel, to provide infiltration of clean runoff and match pre-development infiltration conditions. Overflow from the galleries will be directed to the underground storage chambers for further quantity control. For quality control, Jellyfish filtration systems will be installed to treat all stormwater before it outlets into Salt Creek.

Fencing will be provided along the limits of the proposed parking and truck turnaround. This will act as a physical barrier to prevent human interaction and limit disturbance with the NHS.

The Hydrogeological Investigation Report (C.F. Crozier & Associates Inc., 2025) concluded that construction and long-term dewatering is not anticipated, as the proposed buildings will be constructed as slab on grade.

7. Impact Assessment and Mitigation Measures

This section assesses the potential impacts, predicted effects, proposed mitigation and enhancement measures associated with proposed development of the Subject Lands. Potential effects to the natural heritage features and environmental functions that exist on and adjacent to the Subject Lands are evaluated over the short and long term, with consideration given to measures to avoid and/or mitigate negative impacts, where appropriate. Areas to be maintained, and where possible, improved or restored, to promote the health, diversity and size of natural heritage features on and adjacent to the Subject Lands, are also identified.

The range of potential impacts associated with a proposed development can generally be divided into three categories:

1. Direct impacts are normally associated with the physical removal or alteration of natural features that could occur based upon a land use application;
2. Indirect impacts may be changes or impacts (these could be minor or major) to less visible functions or pathways that could cause negative impacts to natural heritage features over time; and
3. Induced impacts are associated with post-development impacts that may result in increased demand on natural resources.

This EIS presents and discusses the natural heritage features and associated functions that occur on and/or adjacent to the Subject Lands. In addition to the concept plan, the following reports were reviewed to inform this impact assessment:

- Servicing and Stormwater Management Report (C.F. Crozier & Associates Inc. 2025); and
- Hydrogeological Investigation Report (C.F. Crozier & Associates Inc. 2025).

The impacts presented within this section of the report are strictly associated with the proposed development application. While future alignment of an east-west corridor road is considered as part of the MESR for the Tullamore North Employment Area Secondary Plan Area, a complete review of impacts associated with future road alignment will be explored through the Municipal Class Environmental Assessment (EA) process.

The following sections discuss the impacts associated with site alteration and construction proposed by the conceptual site plan, as displayed on **Figure 7** (**Appendix A**). Impact avoidance, mitigation and/or restoration measures are identified along with predicted effects. Recommended monitoring strategies are provided to assess the effectiveness of mitigation measures.

7.1. General Construction Mitigation

7.1.1. Migratory Birds and Bats

The federal MBCA (1994) prohibits the killing, capturing, injuring, taking or disturbing of migratory birds (including eggs) or the damaging, destroying, removing or disturbing of nests. Similarly, the provincial ESA protects seven of the eight species of bat within the province from harm. During construction, particularly

during activities that may result in tree or native vegetation removals, with lack of appropriate mitigation, species at risk bats, or migratory birds and their nests/eggs, could be harmed inadvertently.

All tree removals should occur outside of the active bat maternity window (March 15 to November 30 and the migratory bird window (April 1 to August 31). If this window cannot be avoided:

- As it relates to birds, nest searches would be necessary to determine the presence/absence of nesting birds or breeding habitat every 72 hours until clearing is complete, or until August 31, whichever comes first. If an active nest is observed, a designated setback will be identified within which no construction activity will be allowed while the nest remains active. The setback distance typically ranges from 5 m to 60 m from the nest, depending on the species and its sensitivity to adjacent activities.
- In relation to bats, it may be possible in some situations to complete an exit survey of suitable bat habitat features if this window cannot be avoided. Any vegetation will then have to be removed within 48 hours or a rescreening will be required. If a species at risk bat is identified, then no construction activity will be allowed while the area remains in use, and a designated setback will be established by a qualified biologist.

With the implementation of the above-stated mitigation measures, no disturbance to migratory birds and/or their nests or bats are anticipated during the breeding season.

7.1.2. Light and Noise Effects on Wildlife

Light could also be a concern where it is directed towards sensitive natural features, with functions and/or species that may be intolerant of light disturbance. Primary sources for “new light” will be from the warehouses and associated parking lots. Given that the existing woodland provides low habitat diversity and is dominated by invasive species, existing wildlife communities are expected to be somewhat tolerant of disturbance.

Additionally, noise associated with heavy equipment movement may temporarily disturb wildlife. However, given the agricultural setting and existing noise associated with large farm machinery, as well as local roads, it is expected that local wildlife communities are desensitized and are fairly tolerant of anthropogenic noise sources.

7.1.3. Erosion and Sedimentation

Erosion and sedimentation from the disturbed work area associated with the proposed development could impact water quality (e.g., increased turbidity). Sedimentation could have negative effects on fish (e.g., injury or mortality due to suspended sediments or altered habitat use) or fish habitat (e.g., loss of interstitial spaces in rocky areas, smothering of aquatic vegetation and/or incubating eggs) within the Study Area and in downstream areas.

An Erosion and Sedimentation Control (ESC) Plan should be prepared to minimize the potential for erosion and sedimentation during construction. The ESC Plan should be developed based on the guidance provided in the ESC Guideline for Urban Construction (GGHCA 2019). Basic elements of the plan should include consideration of:

- Construction phasing to minimize the amount of time soils are barren and therefore, more susceptible to erosion;
- Requirements and timing for rehabilitation of disturbed areas;
- Stormwater management strategies during construction;
- Erosion prevention measures (e.g., hydroseeding, sodding, erosion control matting, tarping of stockpiles);
- Sedimentation control measures (e.g., silt fences); and
- Inspection and performance monitoring requirements and adaptive management considerations.

ESC measures should be installed prior to construction along the limit of the retained features. ESC measures should be monitored throughout the construction period and removed at the end of the construction period.

7.1.4. Accidental Spills

Accidental spills of potentially hazardous materials (e.g., fuel and oil from heavy equipment), could cause stress or injury to downstream fish and wildlife.

To mitigate the potential adverse effects on aquatic and wetland habitats due to accidental spills during construction, it is recommended that a spill prevention and response plan be prepared to outline the material handling and storage protocols, mitigation measures (e.g., spill kits on-site), monitoring and emergency response procedures (i.e., emergency contacts, and containment and clean-up measures). Implementation of an effective spill prevention and response plan is anticipated to be largely effective in preventing adverse effects on natural heritage features.

7.1.5. Dust

During construction activities such as clearing and grubbing, dust can lead to changes in vegetation due to increased heat absorption and decreased transpiration; adverse effects to plants and/or wildlife that are not adapted to high levels of sedimentation; and visual impact. To mitigate dust, it is recommended to dampen exposed soil areas with water during construction activities, thereby minimizing the presence of dust within the development zone. Erosion and sediment control measures implemented per **Section 7.1.3** will assist in the reduction of dust.

7.2. Significant Valleylands

Significant valleylands are located on the Subject Lands and are delineated by the long-term stable top of slope, as identified in the Geotechnical Report prepared by MTE Consultants.

A 15m setback from the LTSTOS has been identified as a constraint to development and has driven the development of the site plan. Given that the development limit includes the recommended 15m setback from the LTSOS, no direct impacts are expected as a result of the proposed development application. Indirect impacts associated with construction of the Subject Lands could include increased erosion of the valleyslopes, resulting from an increased impervious area and stormwater runoff volumes and removal of vegetation above the LTSTOS.

The Servicing and Stormwater Management Report details stormwater controls that are designed to match the pre-development drainage conditions of the Subject Lands during the use of the site. The Erosion and Sediment Control Plan will specify measures to be implemented during the construction phase to prevent erosion and sedimentation of valley slopes. Given the existing land-use and condition of the vegetation along the valley slope, it is anticipated that the proposed stormwater outlets and associated spillways will mitigate erosion potential. Other proposed mitigative measures include planting native species within the retained woodland buffer and west of the proposed development. A Landscape Plan has been prepared by C.F. Crozier & Associates Inc., which proposes native plantings in the areas adjacent to the retained woodland which will be cleared to accommodate site grading. The landscape plan proposes planting 81 trees and 316 shrubs along the retained woodland edge (LP-4 and LP-5). Additional tree and shrub plantings are proposed throughout the site.

7.3. Unevaluated Wetlands

Three unevaluated wetlands are identified on the Subject Lands. Two of these wetlands are situated well away from the proposed development within the vegetated valleyland. The third wetland is located within the valleyland, but outside of the CUT1 community.

All wetlands on the Subject Lands will be retained in place with a minimum 30 m setback, and no direct impacts are anticipated. Indirect impacts associated with construction include erosion and sedimentation into the wetland feature. Mitigation measures to address erosion and sedimentation are documented in **Section 7.1.3**.

Other indirect impacts to the wetland post-construction may include changes to site drainage and groundwater inputs that currently support the hydrology of the wetland. Additionally, salt contributions from parking associated with Building A into the wetland may occur given its proximity.

Mitigation for changes to site drainage and infiltration has been incorporated into the general servicing plan, as recommended by the Hydrogeological Investigation Report (C.F Crozier & Associates Inc. 2025). Site servicing has been designed to match the pre-development drainage and infiltration conditions within the Subject Lands and includes the use of infiltration galleries within the north parcel. These mitigation measures are described in the Servicing & Stormwater Management Report (C.F. Crozier and Associates Inc. 2025).

Provided that surface water volume and quality controls are implemented and managed as indicated in the site servicing plan, negative effects associated with surface water runoff are not anticipated. Additionally, as noted above the wetland is riparian and is located at the upstream limit of the Subject Lands. The majority of the catchment area for the wetland is located off-site, and flow volumes within Salt Creek from the upstream catchment will remain unaltered.

The retained wetland will be buffered with a 30m setback that will be planted with native plant material, including tree compensation for other removals. Although the wetland does not currently support sensitive species (i.e., breeding amphibians), planting within the wetland buffer will consider the use of salt-tolerant plants. This could include species such as Gray Dogwood (*Cornus racemosa)*, Red-osier Dogwood (*Cornus sericea)*, Choke Cherry (*Prunus virginiana)*, Wild Red Raspberry (*Rubus idaeus sp. strigosus)*, or Nannyberry (*Viburnum lentago)*.

In addition to the vegetated buffers, fencing will be established along the limits of the proposed parking limiting human interactions with the NHS. While the access road along the realigned WC2 corridor will be located within the NHS (and thus within the fenceline) additional mitigative measures such as the inclusion of thorny barrier plantings will be considered to discourage people from entering into the retained woodland.

Flows will continue to be conveyed to downstream wetland communities; thus, no negative impacts to receiving wetlands and their associated hydrology are expected.

Cumulative impacts to the existing wetlands on the Subject Lands are likely largely associated with the active agricultural management within the landscape. Agricultural management requires the disturbance of soils, which could cause increased erosion within the fields resulting in excess sedimentation in the wetland. Future development within the upstream catchment may have negative impacts to wetland hydrology, depending on the mitigative measures enacted at the time of construction. The MESR has recommended site controls for all future development along the east side of Salt Creek, and it is anticipated that suitable quantity and quality control measures will be implemented to ensure there is no negative impacts to downstream wetlands, including those located on the Subject Lands.

No negative impacts to non-significant wetlands are expected as a result of the proposed development, subject to mitigative measures. No loss in wetland habitat will occur and the wetland that occurs outside of the CUT community will be subject to plantings within the 30m vegetated buffers to increase the ecological function of the adjacent lands, while also enhancing resilience of the wetland community within the local NHS.

7.4. Non-Significant Woodlands

An invasive Buckthorn-dominated cultural thicket community that meets the Town of Caledon's definition of woodland based on the inclusion of Common Buckthorn as a species of tree was identified within the Subject Lands. Given the limited ecological function of this vegetation community, GEI has assessed the feature as non-significant, however given the Town of Caledon's policies with respect to inclusion of Buckthorn as a tree species, potential impacts to this community are assessed within this section.

The proposed site plan recommends encroachment into the vegetation community of approximately 0.45 ha to accommodate truck trailer storage and turnaround. Additional encroachment of approximately 0.106 ha is required to accommodate site grading and stormwater infrastructure. Consideration was given to avoidance of encroachment into this community, however the Project Team has determined that avoidance of this area would result in an available footprint that would not support the ultimate planned use for this area. Given the limited ecological function of the CUT1 community associated with the dominance by invasive Buckthorn, GEI has determined avoidance of this feature is not required and alternative mitigation approaches in line with the mitigation hierarchy could be explored.

To mitigate impacts on the retained portions of the CUT1 community, where trees are proposed for removal, arboricultural best management practices should be undertaken to prevent damage to retained trees. Woody vegetation removals should generally be completed outside of the migratory bird breeding period (generally April 15 to August 15) and outside of the bat active period (generally April 1 to November 30), where possible.

To mitigate the removal of a portion of the CUT1 community, a 1:1 compensation planting is proposed. A preliminary conceptual restoration planting plan has been prepared and is discussed further in **Section 8**. In addition to the proposed compensation planting, native plantings are proposed adjacent to the retained portions of the CUT1, as detailed in the Landscape Plan (C.F. Crozier & Associates Inc. 2025). An area of 0.66ha will be re-vegetated with native species, providing natural heritage benefits to the overall NHS.

In addition to the removal of 0.556 ha of CUT1 community, potential impacts to retained portions could include:

- changes in woodland hydrology;
- edge effects associated with tree removal (e.g., sunscald, windthrow, increased light penetration);
- impacts associated with site grading and machinery (e.g., soil compaction, stress/dieback); and
- noise and light disturbance, impacting local wildlife.

The woodland community is dominated by European Buckthorn, which is tolerant of drier conditions. Similarly, common herbaceous plants (Garlic Mustard, Dandelion, Goldenrod, Wild Strawberry, Herb-robert, and Lesser Burdock) recorded within the community are associated with drier conditions. Based on this review, indirect impacts to the hydrology of the woodland are not expected to negatively impact the longevity of this community. Other proposed mitigative measures that are recommended to reduce and/or minimize these negative impacts include:

- Construction activities adjacent to the retained woodland should be timed outside of the nighttime and early morning periods during the bat breeding seasons (April 1 to November 30), wherever possible. Some localized movement of wildlife out of these edge areas may still occur during the construction phase; however, refuge habitats exist within the broader landscape;
- New lighting should be directed away from the woodland to avoid impact to wildlife activities. Lighting should follow the City of Toronto's Best Practices for Effective Lighting strategy (2017) to incorporate bird friendly solutions;
- To slow the spread of invasive species (such as Common Buckthorn), all woody vegetation should be disposed of locally to reduce transportation to other local municipalities.

It is understood that trees provide a variety of functions including canopy cover, energy conservation, and wildlife habitat to the overall community and are integral to minimizing impacts to air pollution and climate change, as well as enhancing biodiversity (Caledon OP policy 5.5.1a and 5.5.3c). A total of 0.556 ha of CUT1 habitat will be removed to accommodate the proposed development and associated site grading.

Compensation for the removal of woodland (CUT) will occur on an area basis at a recommended 1:1 ratio. Specifically, 2.174 ha excluded from the woodland area have been identified for enhancement on the west side of the Salt Creek. Compensation woodlands will have a 10 m setback applied from adjacent lot lines and infrastructure (road and SWM facilities). The conceptual approach for this compensation area is outlined in **Section 9**.

As a result of the proposed mitigative and compensation measures discussed above, no net negative impact to the area identified as woodland in accordance with the Town of Caledon's policies on the Subject Lands are expected. Rather, there is potential to have a positive impact on the overall ecological health of

this area. The identified compensation area will increase the overall size of the area meeting the definition of woodland. Further, the area being removed is an impaired community dominated by invasive Buckthorn that is not likely to establish into anything more than a Buckthorn thicket, while the compensation area can be planted with native species and monitored/managed to create a woodland community that is dominated by native species. No loss in woodland habitat will occur as a result of the proposed concept plan, however it is recognized that there will be a time-lag between the establishment of planted stock to provide similar or enhanced habitat as that which occurs today. Given the limited ecological function of the buckthorn thicket community, concerns around time lag in this situation are of relatively limited concern. The greatest potential factor would be local microclimatic changes resulting from reduced canopy cover during the initial establishment of the compensation planting area; however, this effect would likely be materially reduced within 10 years of establishment.

7.5. Fish Habitat

Three watercourses were identified within the Subject Lands. Salt Creek (SC(3)) flows southeast through the central portion of the Subject Lands, providing direct fish habitat. A second watercourse (SC(3)2) conveys flows from north of the Subject Lands, through the central portion of the Tullamore North Employment Area to reach SC(3)-2 of Salt Creek. The third watercourse (SC(3)1) conveys flows from the northwest portion of the Tullamore North Employment Area to SC(3)-2. This third watercourse was evaluated as an HDF in the MESR based on existing information available in the Peel Region SABE report and TRCA regulation mapping. However, field investigations confirm that SC(3)1-1, which enters the northwest corner of the Subject Lands meets the definition of a watercourse. Direct fish habitat has not been confirmed for SC(3)2-1 or SC(3)1-1; however, both watercourses are treated as if they provide seasonal direct fish habitat.

All three watercourses will be retained in their current locations. The retained SC(3) will be protected through establishment of 15 m setbacks from the LTSOS; this setback is greater than the 15 m buffer requirement from the bankfull of the existing channel. As a result, impacts to SC(3) will be largely avoided. Establishment of ESC measures ahead of construction must occur along the limit of the NHS (i.e., along the outer limit of the NHS). ESC measures should be monitored throughout the construction period; if any deficiencies are detected then they must be corrected immediately. The establishment of permanent fencing around the proposed development will limit human interactions and discourage dumping within the NHS.

Four discrete HDFs (H1, H2, H3 and H4) consisting of 7 different HDF reaches, were identified within the Subject Lands and were assigned either a Conservation or Mitigation management recommendation. All HDFs drain towards Salt Creek, with drainage for H2, H3, and H4 contained within the Subject Lands, and H1 draining to a downstream reach of Salt Creek via roadside ditches along Airport Road. HDFs identified as Conservation and Mitigation are identified as providing indirect fish habitat functions to downstream habitats.

A drainage swale along the northern property boundary is proposed to convey off-site flows that currently enter HDF H4 along the north property boundary. The swale will consist of naturalized vegetation with no maintenance being required and will not receive any direct runoff from impervious areas in the proposed

development. This swale will convey the Regional storm event with an additional 0.3m of freeboard maintaining indirect fish habitat functions (e.g., organic material provision).

The majority of HDFs will be removed or realigned within the Subject Lands. HDF H4S2 contained wetland habitat, and no direct impacts to this feature are proposed. Mitigation measures identified above with respect to wetlands (**Section 7.2**) would also be effective at mitigating potential impacts on the fish habitat component of this HDF. HDFs designated Mitigation will have their hydrological functions replicated through SWM and LID infrastructure. Specifically, a portion of H4S1 will be realigned with the external drainage swale to maintain existing surface water conveyance. This swale will be vegetated with native species and will not require any long-term maintenance.

Flows from HDF H1S1 will be rerouted into the underground storage chamber which will outlet into the Salt Creek corridor. The drainage previously contributed by HDF H1 into Salt Creek at the Airport Road crossing will continue to be conveyed to Salt Creek and downstream habitats. Similarly, flows from HDF H2 will be captured in rooftop storage and conveyed to an infiltration gallery or underground storage chamber and will outlet into Salt Creek.

Additional potential indirect effects on fish habitat downstream that could occur from the proposed development include:

- Impaired fish habitat and/or negative impacts on aquatic biota (e.g., fish and benthic invertebrates), including deteriorated health or mortality, due to erosion and sediment from site alteration and development;
- Mortality or health impacts due to accidental spills of toxic materials during or post-construction;
- Alterations in watercourse water balance (e.g., timing and volume of flows) and associated negative impacts on fish habitat functions; and
- Long-term impairment of watercourse quality (including chemical contaminants, suspended solids and temperature) due to surface runoff from the proposed development.

The following mitigative measures are proposed to prevent or minimize negative effects on fish and fish habitat:

- Implementation of ESC measures, as described in **Section 7.1.3.**
- Construction equipment should be regularly maintained to prevent spills within and adjacent to the NHS. Refer to **Section 7.1.4** for mitigation measures related to accidental spills;
- As noted in the Geotechnical Report (Terra-Dynamics Consulting Inc. 2023) dewatering is not expected to be required for the majority of excavations on the Subject Lands during construction. However, as noted in the report, evaluation of the potential for deeper sewer excavations to interact with the underlying aquifer will be required and if there is potential, additional hydrogeological investigations and potentially a dewatering plan (identifying any recommended mitigative measures) may be required;
- Implementation of SWM infrastructure to provide lot-level controls (rooftop storage, infiltration galleries, and OGS units, **Section 6**) will maintain or improve all relevant water quality criteria (e.g., total suspended solids; TSS) and maintain site water balance (e.g., infiltration). SWM infrastructure has been designed to provide Level 1 TSS removal. SWM infrastructure (i.e., underground storage

and infiltration galleries) will also help reduce thermal loading to downstream aquatic habitats relative to conventional wet SWM ponds;

Stormwater outlets from the underground storage chambers are expected to consist of concrete headwalls and riverstone spillways located near the top of slope of the Salt Creek corridor and will not outlet directly into the watercourse; rather the flows from the SWM facility will be rerouted into SWM Facility C. No direct conveyance channels will be constructed from the outlets to the adjacent watercourse to avoid direct impacts on the channel banks and riparian vegetation.

No negative impacts to downstream receiving watercourses are expected. Construction mitigation measures (e.g., removal of features outside of sensitive timing windows, installation and monitoring of ESC measures, etc.) are expected to mitigate against negative impacts to downstream habitats. Given that the water flows south/southeast within the Subject Lands, no impacts are expected to the upstream portions of the watercourses as a result of the proposed development plan.

To ensure that watercourses and fish habitat are appropriately protected, monitoring of ESC measures throughout the construction period, and establishment of an effective spill prevention and response plan is recommended.

7.6. Habitat for Endangered and Threatened Species

The following threatened and endangered species were observed within the Subject Lands:

- Silver-haired Bat;
- Hoary Bat;
- Eastern Red Bat;
- Tri-colored Bat;
- Northern Myotis;
- Eastern Small-footed Myotis; and
- Little Brown Myotis.

Seven SAR bats were recorded within the CUT1 community within the Subject Lands. While some species, such as Eastern Small-footed Myotis will roost in rock piles or rock outcrops most roost in tree cavities, under loose bark, or in foliage. NRSI completed a bat habitat assessment and identified a total of 13 trees which may provide suitable roosting habitat (Map 3, Preliminary EIS 2023). Of the 13 candidate roost trees, 3 are located within the development area. Removals of these habitats will occur outside of the active bat window (April 1 to November 30) to mitigate potential impacts to roosting bats. Compensation plantings for tree removals have been identified in the Landscape Plan (C.F. Crozier & Associates Inc. 2025) and will occur adjacent to the retained woodland.

In addition to the SAR bats documented during field investigations, Salt Creek (SC(3)) is identified as occupied habitat for Redside Dace. The occupied habitat for Redside Dace as defined under the current ESA includes "*the entire wetted area of the occupied reach, plus a 30 m vegetated riparian area along the length of the occupied reach".* The potential impacts and recommended mitigation measures identified

for direct fish habitat (**Section 7.5**) and valleylands (**Section 7.2**) would also apply to occupied Redside Dace habitat.

The impacts of the removal of HDFs H1S1, H2S1, H2S2, and H4S1 as well as proposed mitigation detailed in **Section 7.5** may also be applied to impacts associated with baseflow contributions to occupied Redside Dace habitat. Baseflow contributions will continue to be replicated through stormwater infrastructure. Post-construction surface water will be conveyed through underground storage tanks to provide enhanced quality control. The proposed stormwater infrastructure and LID measures will help reduce thermal loading to downstream Redside Dace habitat. All SWM discharge infrastructure should be designed in accordance with the MNRF's Guidance for Development Activities in Redside Dace Protected Habitat (MNRF, 2016).

Potential impacts to SAR and their habitat will be addressed in compliance with the requirements of the provincial ESA/SCA, or the federal Species at Risk Act, as applicable. Implementation of the mitigation measures identified above will largely be effective at avoiding negative impacts to SAR and their habitats.

8. Monitoring Plan

8.1. Construction Monitoring

Construction monitoring components are defined and described in the following sections and are intended to ensure that potential impacts as a result of construction are effectively managed and mitigated.

Additional monitoring efforts typically associated with construction not addressed herein are required, including the reporting of deficiencies and landscaping survival assessments. These activities should be conducted in a standard manner to provide a level of certainty to approval agencies that works have been constructed as designed and approved.

Vegetation Monitoring

All landscaped works within the woodland compensation area and NHS buffers will be reviewed during the construction period to ensure all planting and surface treatments are installed per specifications. Ecological oversight should be conducted on all construction and works associated with woodland compensation, including but not limited to:

- Identify suitable native species substitutions and/or stock size adjustments and secure approval for these substitutions from the Town of Caledon and other reviewing agencies, if required;
- Review layout of plant material prior to/during installation, including species type, location and densities;
- Observation of installations of planting, mulch, beds, seeding, and topsoil amendments; and
- Verify native vegetation at the site prior to installation, as per the Issued for Construction Drawings.

As noted above, ecological guidance will also be provided regarding suitable native plant substitutions should certain plant materials not be available for installation. All plant material substitutions will be reviewed by a qualified professional to ensure that all plant materials installed follow the planting requirements determined at Detail Design.

Tree Protection Zones

Monitoring of the TPZ should be conducted or supervised by a Certified Arborist prior to and during construction to ensure compliance with tree protection guidelines. Proposed monitoring will assess the health and structure of the trees, identify changes to environmental conditions, and respond appropriately where necessary. The Certified Arborist must be on site at all times prior to and during any construction activity occurring within any TPZ to monitor root exposure, identify root disturbance, and propose site specific mitigation where appropriate.

All other construction monitoring should be conducted on a bi-weekly basis (at a minimum) during the active construction period. Accidental damage to any part of a tree, including accidental incursion into the TPZ, must be reported to the Certified Arborist within six hours.

Erosion and Sediment Control

The ESC Plan will assist in mitigating potential negative impacts on natural heritage features and functions due to erosion and sedimentation during construction by preventing the release of sediment from the construction site. All temporary erosion and sediment controls will be routinely inspected (at minimum once a week) and after significant rainfall events to ensure they are maintained in proper working order. Any necessary repairs should be implemented within 48 hours

8.2. Post-Construction Compliance Monitoring

Post-construction compliance monitoring is intended to demonstrate compliance with permits or other approvals through local monitoring to verify that measures have been constructed as designed. This type of monitoring applies to the vegetated buffer and the woodland enhancement zone.

Post-development vegetation monitoring requirements for the woodland compensation will be conducted once per year for two years to ensure that all landscape works are established during the warranty period. These efforts will aim to prevent non-native and/or invasive species from becoming established on site.

9. Conceptual Compensation Plan

In accordance with the Town of Caledon Development Standards Manual (2019) and the Terms of Reference for Arborist Reports, Tree Preservation Plans, and Tableland Tree Removal Compensation (2020), compensation is required for the removal of trees. While the Town of Caledon does not provide specific criteria for woodland compensation, this Preliminary Woodland Compensation Plan (PWCP) aligns with the Toronto and Region Conservation Authority (TRCA) Guideline for Determining Ecosystem Compensation (2023).

To offset the loss of natural woodland habitat, the TRCA guideline recommends a minimum 1:1 replacement-to-loss ratio for woodland compensation. Accordingly, land-based compensation has been proposed to address the removal of 1.03 ha of woodland from the Subject Lands by the previous landowner, as well as the proposed removal of 0.556 ha to accommodate the Site Plan.

This PWCP serves as a preliminary compensation framework and is to accompany the Master Environmental Servicing Report (MESR) prepared by GEI. The client will require buy-in from the Town of Caledon prior to proceeding with the proposed compensation design plan. A comprehensive Woodland Compensation Plan, including a detailed planting list, landscape and/or planting plans, will be finalized during detailed design.

The woodland community (CUT1) currently located within the southwestern half of the Subject Lands was identified within the Preliminary EIS (NRSI, 2023). This community was assessed as a culturally influenced thicket habitat bisected by Salt Creek and meadow marsh habitat associated with the floodplain of Salt Creek.

The woodland community has been significantly impacted by cultural disturbances and contains a mix of native and non-native species. The dominant species in this community is European Buckthorn, which thrives in dry, disturbed conditions. The canopy is primarily composed of American Elm (*Ulmus americana*), with Sugar Maple and Manitoba Maple (*Acer negundo*) occurring in equal abundance. The sub-canopy includes Common Buckthorn, Dotted Hawthorn (*Crataegus punctata*), and Common Apple (*Malus pumila*). In the understory, Common Buckthorn and Chokecherry are prevalent. Groundcover species are dominated by Common Buckthorn, with Timothy (*Phleum pratense*) and Panicled Aster (*Symphyotrichum lanceolatum*) present in equal amounts.

Prior to acquisition of the land by the applicant, an area along the east edge of the natural area was previously removed. Upon initiation of the secondary planning process, the Town identified the previous removals and noted that they would be subject to Caledon OP policy 13.12.7 Natural Features That Have Been Disturbed. Historical images from Google Earth reveal a 1.03 hectare portion of this woodland was removed between November of 2021 and May of 2022. Based on ongoing discussions with the Town of Caledon, it has been determined that compensation for this woodland removal will need to be incorporated into future development.

9.1. Proposed Woodland Compensation Area

A conceptual compensation plan has been prepared to show how woodland habitat and functions will be compensated and/or enhanced within the Subject Lands and incorporated into the future NHS. The compensation plan has been prepared to offset the proposed encroachment into the CUT1 habitat, as well as woodland removals that were undertaken by the former landowner to facilitate an increase in agricultural potential of the Subject Lands. An area west of Salt Creek has been identified that is distinct from the retained woodland in terms of species composition and densities. The definition of a woodland in the Town of Caledon OP includes an exclusionary clause that states:

> *Additional exclusions may be considered for treed communities which are dominated by invasive non-native tree species such as buckthorn (*Rhamnus *species) and Norway maple (*Acer platanoides*), or others deemed to be highly invasive, that threaten the ecological functions or biodiversity of native communities. Such exceptions should be supported by site-specific studies that consider 1) the degree of threat posed; 2) any potential positive and/or negative impact on the ecological functions or biodiversity of nearby or adjacent native communities; and 3) the projected natural succession of the community. Communities where native tree species comprise approximately 10 percent or less of the tree crown cover and approximately 100 or fewer stems of native tree species of any size per hectare would be candidates for exclusion.*

GEI has ground-truthed the limit of the CUT1 community on the west side of Salt Creek. Based on a stem density analysis performed by GEI in November of 2024, it was determined that a portion of the Subject Lands located west of Salt Creek does not meet the woodland stem density requirements. Areas A and B, as shown in **Figure 8**, **Appendix A** are dominated by European Buckthorn, with English Hawthorn (*Crataegus monogyna*) and Apple (*Malus domestica*) trees.

For the purposes of determining woodland suitability, only native tree species are included in the 10% tree crown cover and 100-stems-per-hectare calculation. As such, the Apple trees in this area are excluded from the assessment. If Hawthorn trees are considered:

- **Area A** was determined to have **64 stems per hectare** of native species.
- **Area B** was determined to have **83 stems per hectare** of native species (excluding saplings) or **127 stems per hectare** (including saplings).

Based on these results:

- **Area A** does not meet the criteria to be considered a woodland and is considered a suitable location for woodland compensation.
- **Area B** may also be suitable for woodland compensation.

The conceptual compensation plan proposes restoration of Areas A and B to increase native species cover and create enhanced woodland habitat. Restoration of woodland habitat within Areas A and B create 2.174 ha of woodland habitat, to compensate 1.555 ha of woodland removals, including 1.03 ha removed by the previous landowner, and 0.556 ha of encroachment into the NHS feature (CUT1). At the detailed design stage, a Design Brief will be prepared for review by the Town of Caledon ahead of submitting the

planting plan drawings. The Design Brief will provide specific details for the compensation area, and additional NHS buffer plantings including: plant species lists, proposed plant stock type and sizing, planting timing considerations, created wetland design parameters, and wildlife habitat structure details.

9.2. Goal of Woodland Compensation

The overarching goal of the PWCP is to create a native woodland stand that improves ecological functionality of the woodlands within the Subject Lands through an increase in species diversity and wildlife habitat availability. This will be achieved through removal of existing vegetation within Areas A and B, and planting of native species. This planting will create a healthier naturalized area of woodland within the landscape resulting in an increase the size and resiliency of the NHS. Incorporation of wildlife enhancements (e.g., pollinator habitat and bat roosting habitat) will be reviewed during detailed design.

The compensation area will feed into the larger ecological landscape, primarily within the Salt Creek corridor. This compensation will occur adjacent to the same natural heritage system where the initial removal occurred, enhancing habitat availability for terrestrial species while maintaining connectivity within the system. By expanding and enhancing natural features adjacent to the NHS, the compensation efforts will improve biodiversity, support native species, and mitigate the impacts of development.

A finalized plant list and native seed mix with associated planting sizes/seeding rates will be provided along with the finalized Woodland Compensation Plan during detailed design. The type of planting stock is dependent on the species and their modes of reproduction, as well as practicality. The following plant stock will be considered within the NHS:

- Herbs (forbs, graminoids): seeds, plugs;
- Shrubs: 1-gallon pots, stem cuttings, rootstock cuttings; and
- Trees: seed, bareroot, ball and burlap, whips, potted seedlings.

A cover crop will also be recommended during detailed design and would be mixed with the native seed mix. Consideration of site preparation (e.g., the need for soil amendments) will be reviewed during the detailed design stage. Native plant materials should be sourced from native plant nurseries and seed suppliers within 100 km of the Subject Lands, if possible, to reduce transplant shock. All plant materials will be obtained and installed in accordance with the Canadian Nursery Stock Standard.

9.3. Responsibilities for Restoration

Broccolini Airport Road Limited Partnership assumes all responsibility for the implementation of the compensation plan outlined within the finalized Woodland Compensation Plan and Design Brief.

9.4. Schedule for Implementation of Compensation Measures

The schedule for the implementation of compensation measures is to be determined once the finalized Woodland Compensation Plan has been approved by the reviewing agencies.

9.5. Monitoring

A fulsome post-construction performance monitoring program will be prepared during the detailed design stage. It is likely that the post-construction monitoring will be a two to five year monitoring program that will be designed to understand whether the compensation goal has been met.

Milestone reporting requirements will also be outlined within the final Woodland Compensation Plan and Design Brief, which will be prepared during the detailed design stage.

9.6. Natural Heritage System Assumption

It is our understanding that the Town of Caledon will assume the compensation lands. This will be confirmed with the Town during the detailed design stage.

The Woodland Compensation Plan will be designed such that long-term maintenance is not required. Any maintenance would be at the discretion of the Town as it relates to their long-term objectives for this area.

10. Conclusion

This EIS has been developed as part of the planning process for the Zoning By-law and Site Plan Application for the Subject Lands. An assessment of impacts on natural features and their associated functions has been conducted and discussed in relation to the PPS and associated provincial implementation guidance contained in the Natural Heritage Reference Manual (NHRM; MNR 2010).

Based on the studies and analyses carried out on the Subject Lands, the following conclusions are provided:

- The results of the natural heritage assessment identified the following significant natural heritage features on or adjacent to the Subject Lands:
    - Unevaluated wetlands, including candidate PSWs;
    - Valley and Stream Corridors;
    - Woodlands meeting one or more of the criteria for NAC woodland in Table 1;
    - Fish habitat (direct and indirect);
    - Habitat for aquatic SAR (Redside Dace); and
    - Habitat of endangered and threatened species (Redside Dace, candidate SAR bat habitat).

Stormwater management for the proposed development includes use of underground storage chambers, rooftop storage, and infiltration galleries.

- The hydrogeological investigation report recommends maintaining groundwater function at the site by following typical LID measures such as collection of runoff from the building rooftops and redirection to infiltration galleries;
- Provided that surface water volume and quality contributions to the wetlands and fish habitat can be managed as predicted within the Servicing and Stormwater Management Report (C.F. Crozier & Associates Inc. 2025), the proposed stormwater management approaches and mitigation measures will mitigate negative impacts to wetlands and downstream fish habitat associated with surface water runoff;
- The proposed woodland compensation will create 1.555 ha of woodland habitat, to offset the woodland removal;
- An ESC Plan is recommended to be implemented to mitigate impacts to vegetation communities within on and adjacent to the Study Area as well as downstream fish habitat;
- Vegetation removal during the construction phase is recommended to occur outside of the migratory bird window (April 1 to August 15) and bat active window (April 1 to November 30). If timing windows cannot be avoided, a nest search is recommended prior to construction activities;
- As discussed within this EIS, no direct impacts are anticipated to any significant natural heritage features. Encroachment of 0.556 ha into non-significant woodland (CUT1) is proposed and will be offset through proposed woodland compensation. Indirect impacts can be avoided through the application of the prescribed mitigation measures.

In summary, the proposed woodland compensation and mitigation measures are expected to maintain and enhance the natural features and associated functions occurring on and adjacent to the Subject Lands. Considering the above, GEI is of the opinion that the proposed development of the Study Area can be completed without measurable negative impacts on the natural heritage features and associated functions.

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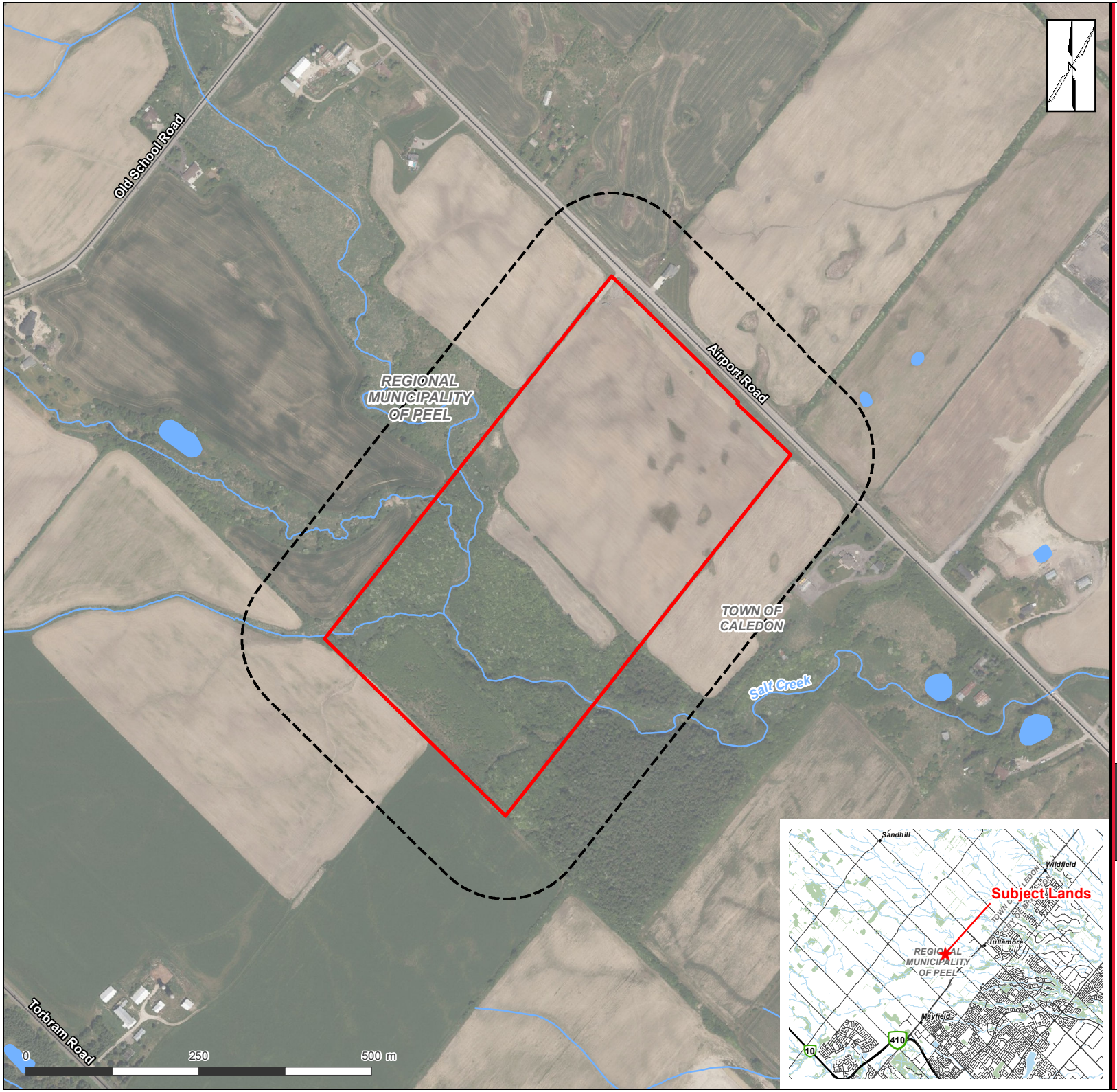
Appendix A Figures



Reference(s):

1. Coordinate System: NAD 1983 CSRS UTM Zone 17N.
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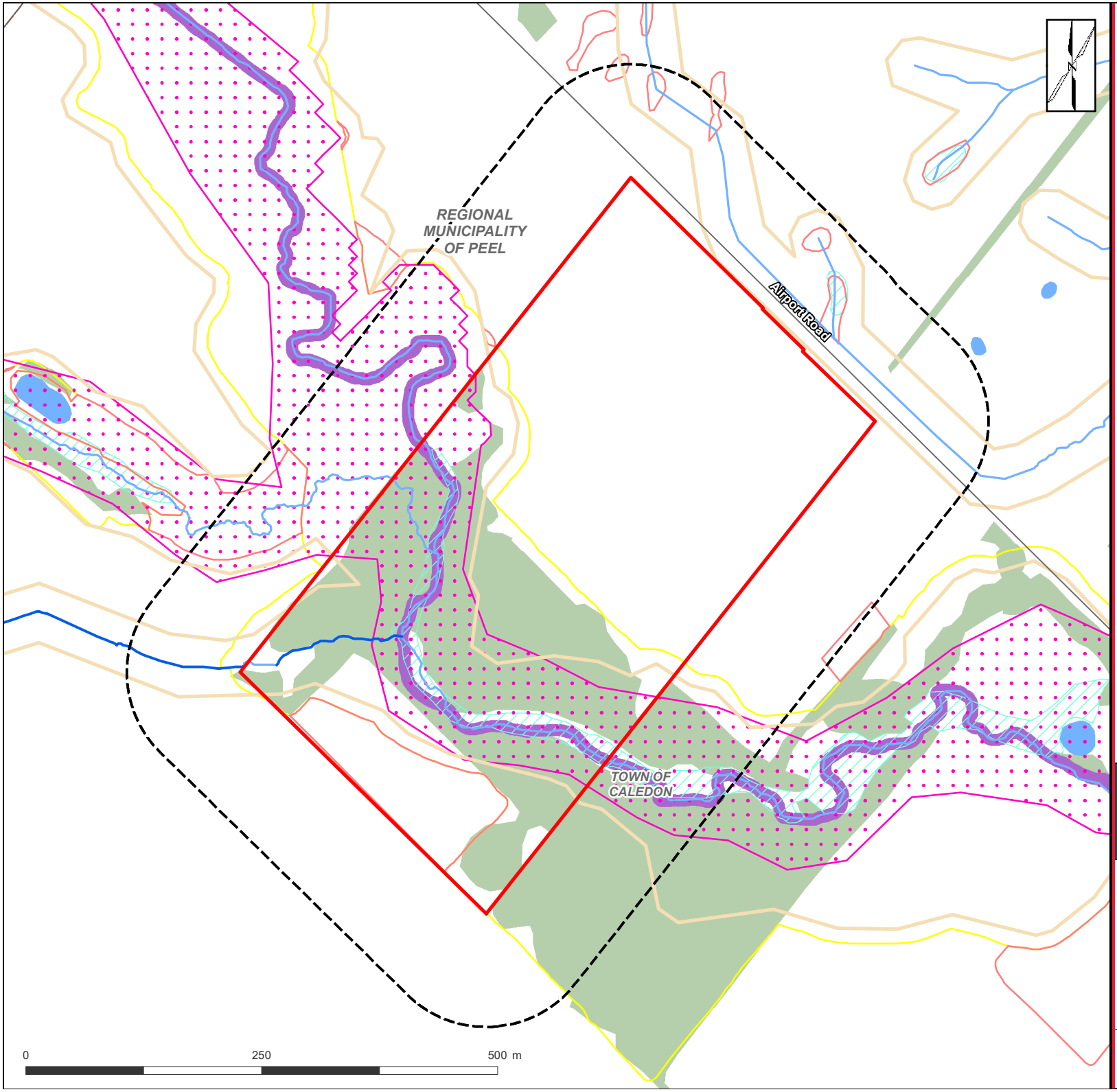
Figure 1
Location of Subject Lands

Project Name:
Airport Road Environmental Impact Study

Client Name:
Broccolini Airport Road Limited Partnership
(Caledon, Ontario)

GEI Consultants

Last Updated: October 2025
Document ID: 2500849



Subject Lands
Subject Lands +120m
Trail Segment (OTN)
Municipal Boundary, Lower/Single Tier
Municipal Boundary, Upper Tier
Wetland - Not evaluated per OWES
Waterbody
Wooded Area
Aquatic Species at Risk - Fish
Headwater Drainage Feature

Future Caledon Official Plan (Draft, 2024)

Preliminary Natural Environment System - Schedule D1 and D2a

Natural Features and Areas
Supporting Features and Areas

Town of Caledon Official Plan (2024 Consolidation) - Schedule A

Environmental Policy Area

Toronto and Region Conservation Authority (TRCA)

Toronto and Region Conservation Authority Approximate Regulation Limit
Watercourse (TRCA)

Reference(s):

1. Coordinate System: NAD 1983 CSRS UTM Zone 17N.
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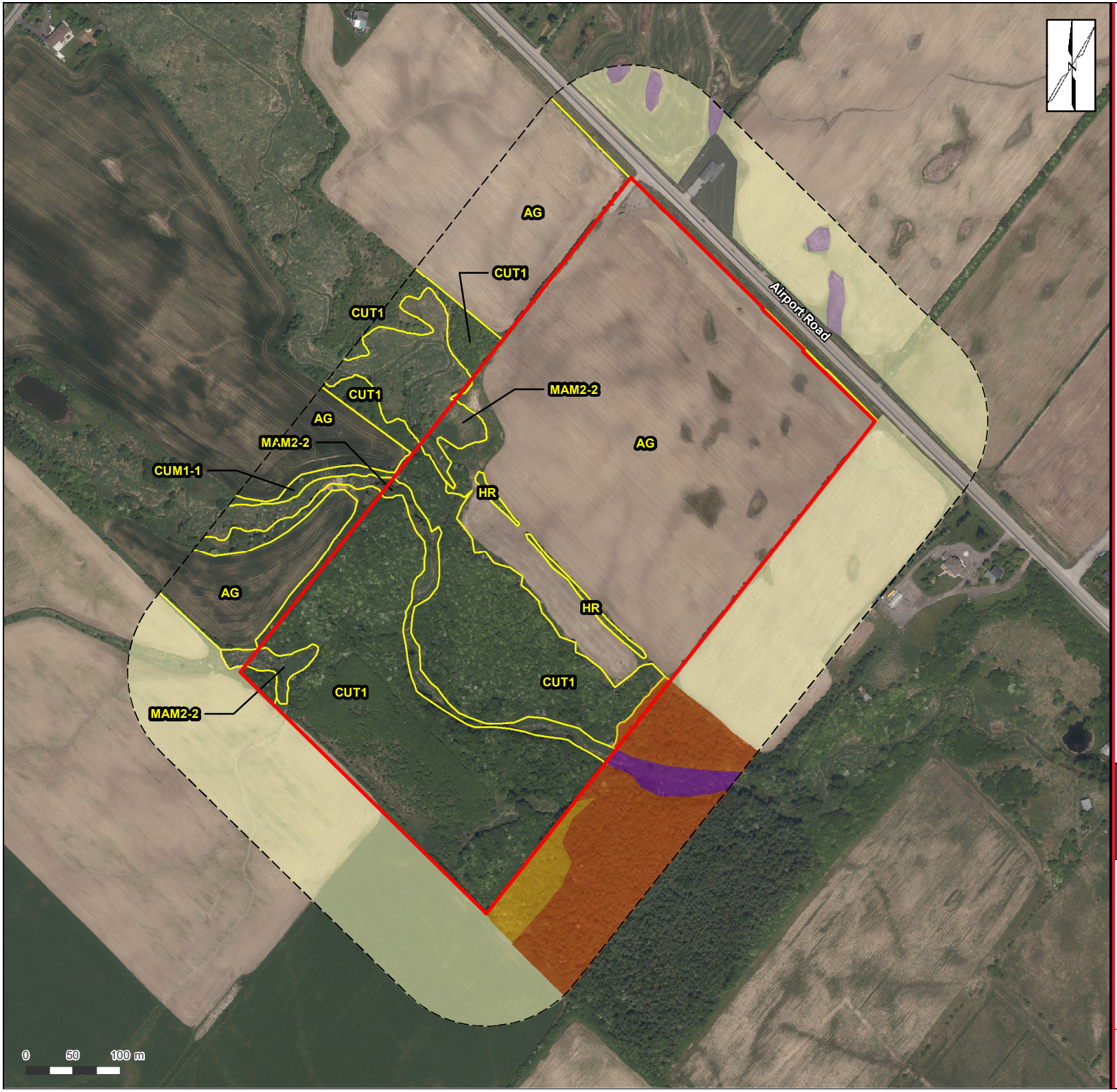
Figure 2
Landscape Setting

Project Name:
Airport Road Environmental Impact Study

Client Name:
Broccolini Airport Road Limited Partnership
(Caledon, Ontario)

GEI Consultants Canada

Last Updated: October 2025
Document ID: 700000-G-000



Subject Lands
Subject Lands +120m
Ecological Land Classification (NRSI, 2023)*

ELC LEGEND

AG, Agricultural
CUM1-1, Dry - Moist Old Field Meadow
CUT1, Mineral Cultural Thicket
HR, Hedgerow
MAM2-2, Reed-canary Grass Mineral Meadow Marsh

SABE ELC

AG, Agricultural
ANTH, Anthropogenic
CUP, Cultural Plantations
CUS, Cultural Savannah
MA, Marsh
MAM, Meadow Marsh

**ELC data is only available for the Participating Broccolini Property.*

Reference(s):

1. Coordinate System: NAD 1983 CSRS UTM Zone 17N.
2. Base features produced under license with the Ontario Ministry of Natural Resources and Forestry © King's Printer for Ontario, 2025.
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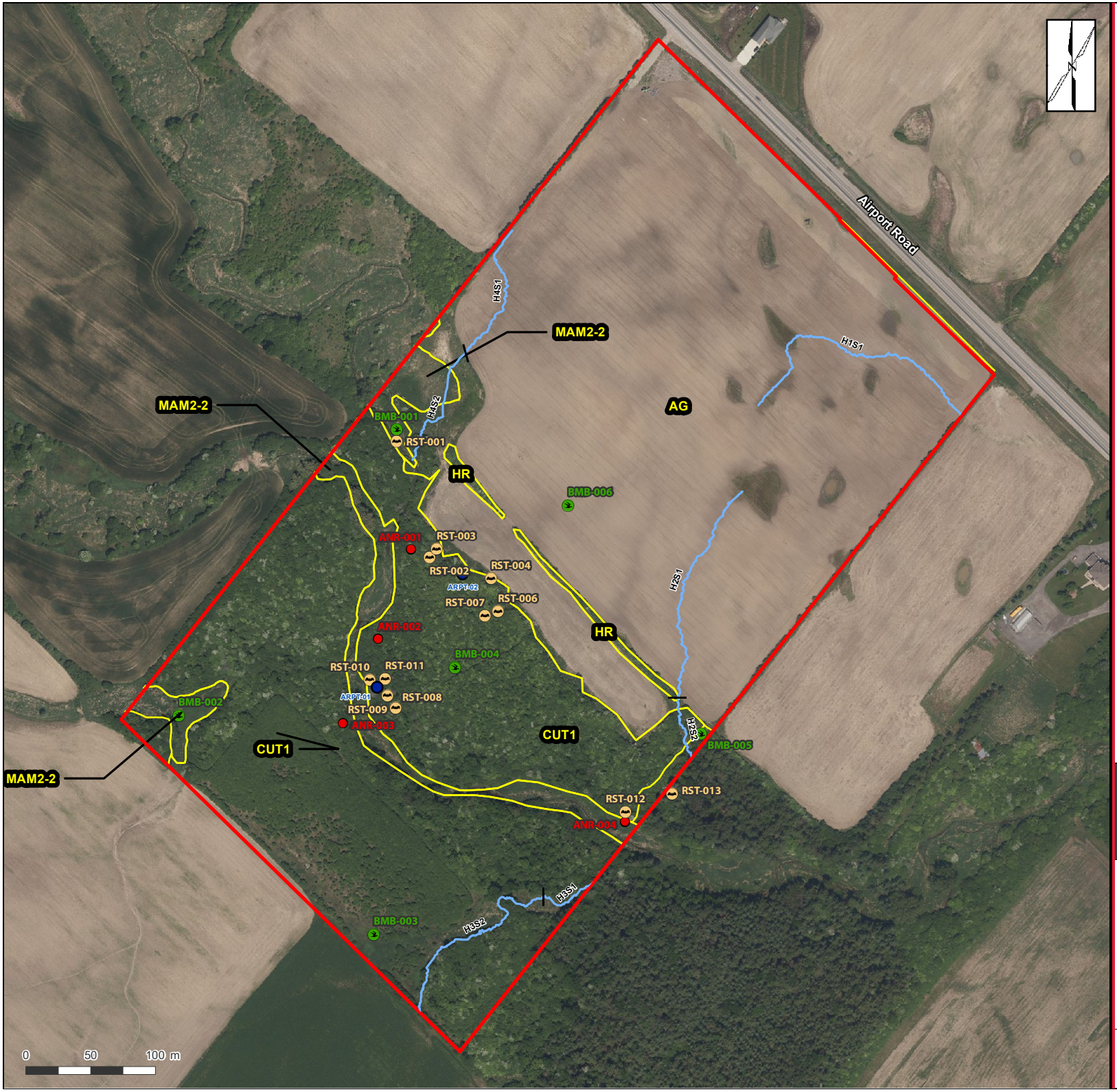
Figure 3
Ecological Land Classification

Project Name:
Airport Road Environmental Impact Study

Client Name:
Broccolini Airport Road Limited Partnership
(Caledon, Ontario)

GEI Consultants Canada

Last Updated: October 2025
Document ID: 700000-G-000



- Subject Lands
- Ecological Land Classification (NRSI, 2023)*
- Breeding Bird Survey Stations (NRSI, 2023)
- Bat Habitat Assessment (NRSI, 2023)
- Amphibian Call Count Survey Locations (NRSI, 2023)
- Bat Acoustic Monitoring Stations (GEI, 2025)
- Headwater Drainage Features
- Breaks

ELC LEGEND

AG, Agricultural
CUM1-1, Dry - Moist Old Field Meadow
CUT1, Mineral Cultural Thicket
HR, Hedgerow
MAM2-2, Reed-canary Grass Mineral Meadow Marsh

**ELC data is only available for the Participating Broccolini Property.*

Reference(s):

1. Coordinate System: NAD 1983 CSRS UTM Zone 17N.
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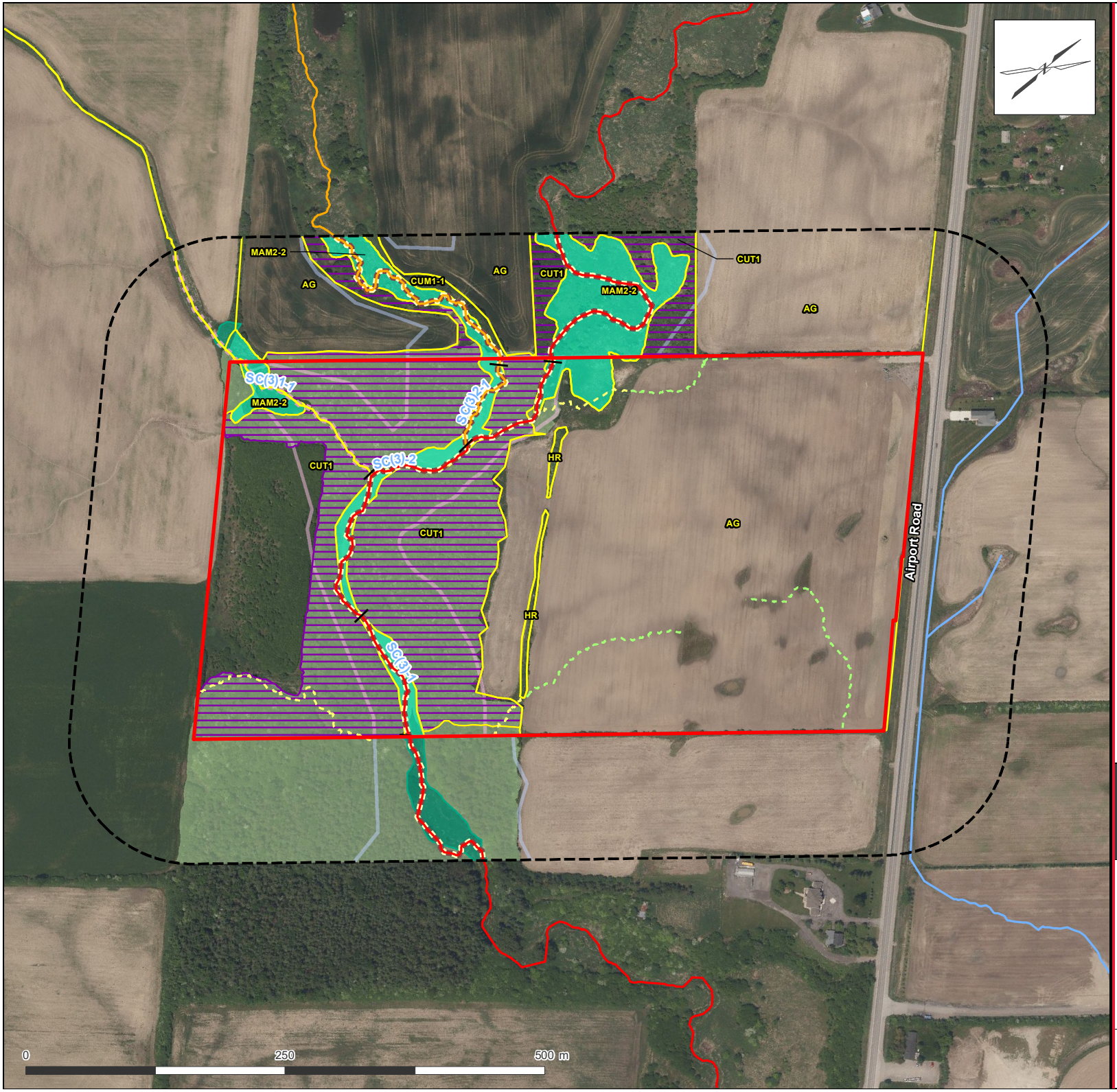
Figure 4
Ecological Survey Locations

Project Name:
Airport Road Environmental Impact Study

Client Name:
Broccolini Airport Road Limited Partnership
(Caledon, Ontario)

GEI Consultants Canada

Last Updated: November 2025
Document ID: 700000-G-000



Subject Lands
Subject Lands +120m
Road

Watercourse Constraints Ranking
High
Medium
Low
Other Watercourse
Reach Breaks

Headwater Drainage Feature - Management Recommendation
Conservation
Mitigation
Candidate Significant Wetland (NRSI)
Unevaluated Wetland
Candidate Core Area Woodland
Significant Valleyland (TRCA)
Significant Valleyland (TRCA, MTE, GEI)
Habitat of Endangered and Threatened Species (SAR Bats)
Redside Dace Occupied Habitat
Direct Fish Habitat
Indirect Fish Habitat
Ecological Land Classification (NRSI, 2023)*

ELC LEGEND
AG, Agricultural
CUM1-1, Dry - Moist Old Field Meadow
CUT1, Mineral Cultural Thicket
HR, Hedgerow
MAM2-2, Reed-canary Grass Mineral Meadow Marsh

*Watercourse naming is from the SABE.

Reference(s):
1. Coordinate System: NAD 1983 CSRS UTM Zone 17N.
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3. Orthoimagery © First Base Solutions, 2025. Imagery taken in 2024.

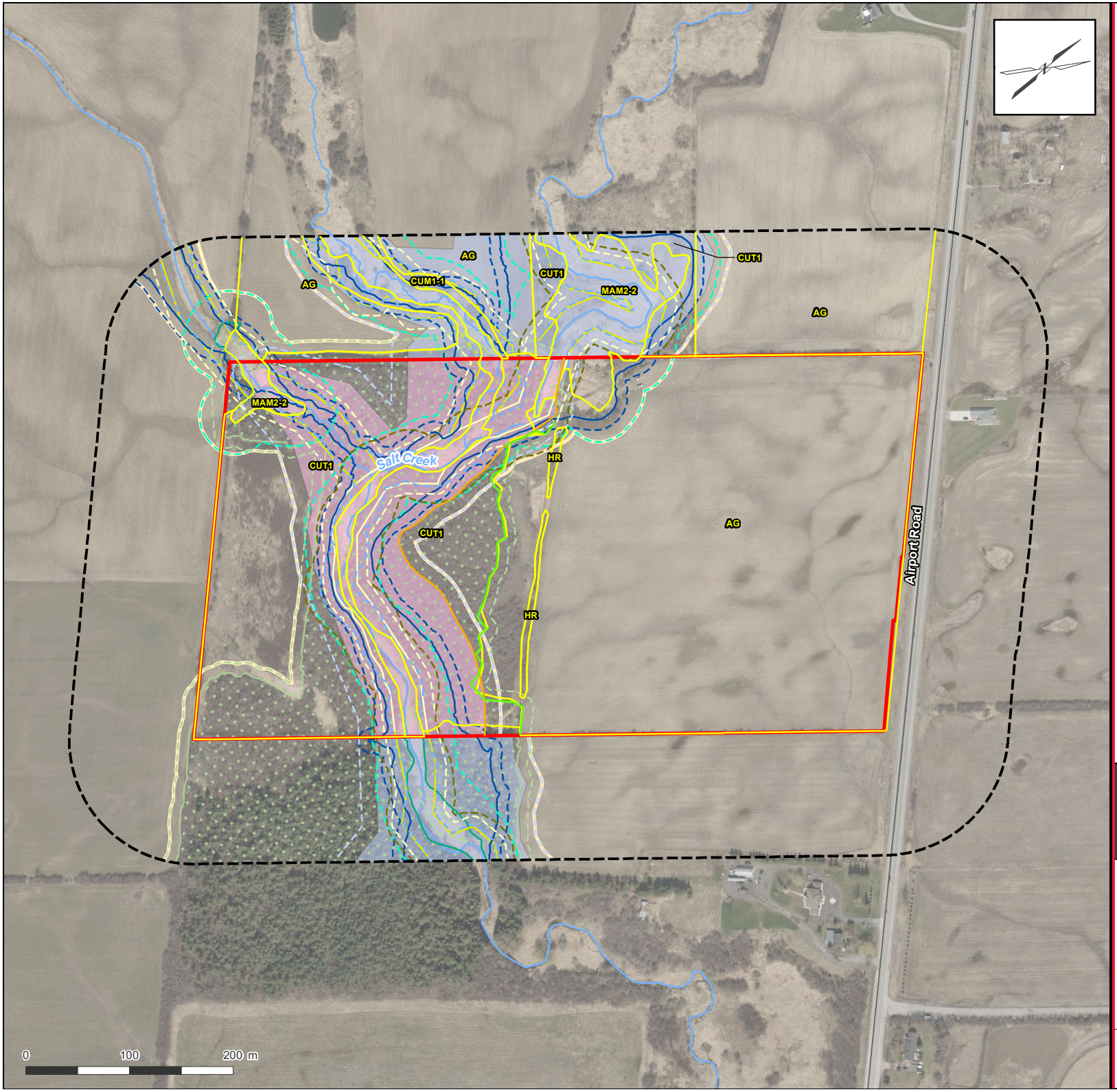
Figure 5
Significant Natural Heritage Features

Project Name:
Airport Road Environmental Impact Study

Client Name:
Broccolini Airport Road Limited Partnership
(Caledon, Ontario)

GEI Consultants

Last Updated: November 2025
Document ID: 2408553



Subject Lands
Road
Watercourse (Fish Habitat)
Development Limit

Natural Features and Natural Hazards

Occupied Redside Dace Habitat (Watercourse +30m)
Candidate Significant Wetland (NRSI)
Candidate Significant Wetland (GEI)
Significant Valleyland (TRCA)
Significant Valleyland (TRCA, MTE, GEI)
Staked Dripline (R-PE Surveying Ltd)
Non-Significant Woodland
Flood Hazard (TRCA 2024)
Meander Belt (Geo Morphix)
Meander Belt (TRCA)
Long Term Stable Top of Slope (MTE)

Natural Feature Buffers and Natural Hazard Setbacks

Fish Habitat (Watercourse +15m)
Candidate Significant Wetland +30m
Significant Valleyland +15m
Non-Significant Woodland +10m
Floodline +10m
Meander Belt +10m
Ecological Land Classification (NRSI, 2023)*

ELC LEGEND

AG, Agricultural
CUM1-1, Dry - Moist Old Field Meadow
CUT1, Mineral Cultural Thicket
HR, Hedgerow
MAM2-2, Reed-canary Grass Mineral Meadow Marsh
OAO, Open Aquatic

- The limits of the valleyland should be defined by a geotechnical engineer (i.e., stable top of slope and staked top of bank).
- The SABE identifies the Woodland as a Key Woodland Feature, thus, the Town could recommend a 20 m buffer applied from the dripline if they interpret it as a significant woodland.
- HDFs, Tributaries of Salt Creek and riparian wetlands are identified as contributing Redside Dace habitat.

Reference(s):

1. Coordinate System: NAD 1983 CSRS UTM Zone 17N.
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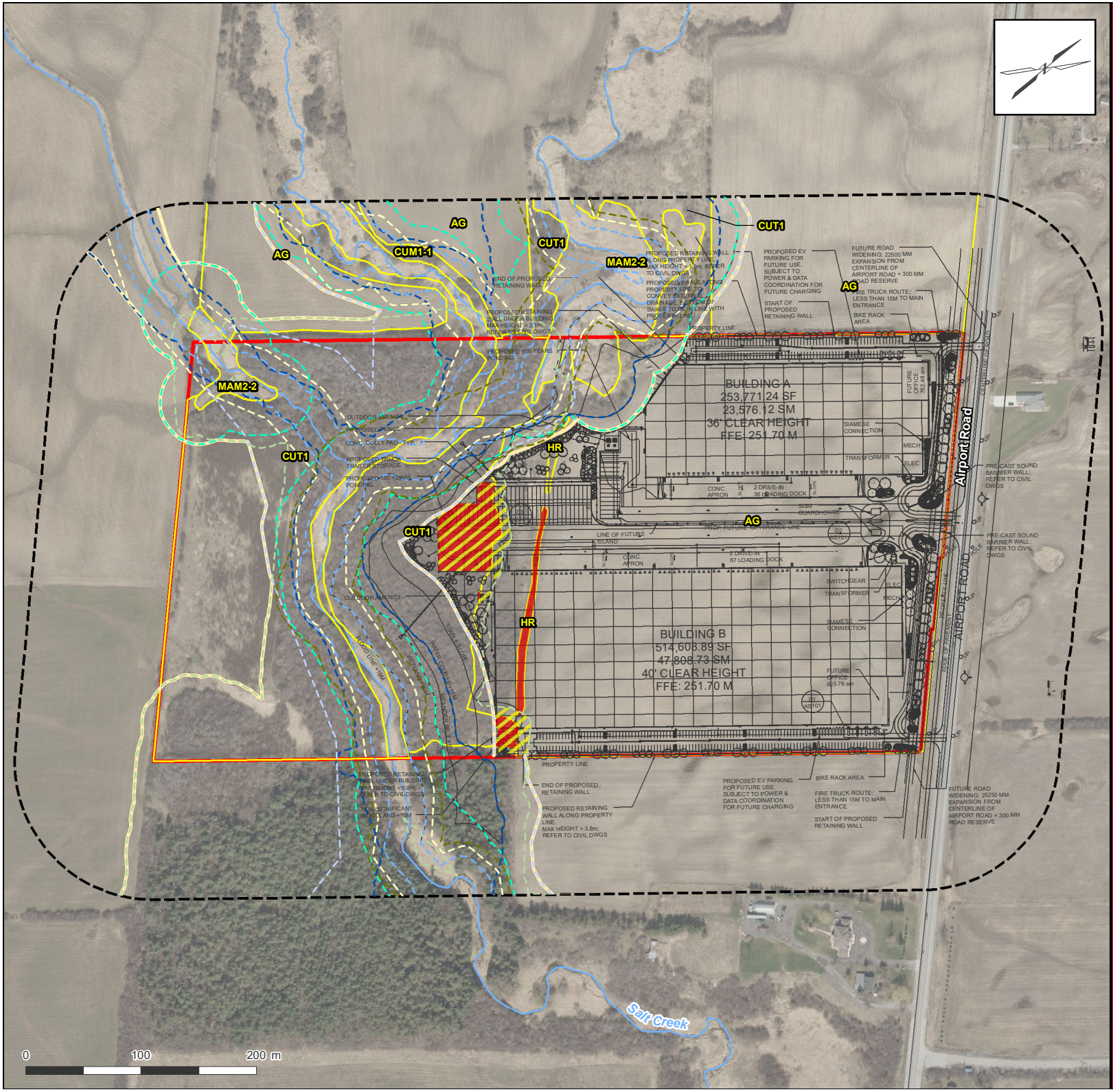
Figure 6
Ecological Constraints

Project Name:
Airport Road Environmental Impact Study

Client Name:
Broccolini Airport Road Limited Partnership
(Caledon, Ontario)

GEI Consultants

Last Updated: November 2025
Document ID: 2500849



- Subject Lands
- Road
- Watercourse (Fish Habitat)
- Ecological Land Classification (NRSI, 2023)*
- Site Plan
- Occupied Redside Dace Habitat (Watercourse +30m)
- Fish Habitat (Watercourse +15m)
- Candidate Significant Wetland +30m
- Significant Valleyland +15m
- Non-Significant Woodland +10m
- Floodline +10m
- Meander Belt +10m
- Development Limit
- Vegetation Removals (0.45 ha)
- Buffer Enroachments (0.51 ha)

ELC LEGEND

AG, Agricultural
CUM1-1, Dry - Moist Old Field Meadow
CUT1, Mineral Cultural Thicket
HR, Hedgerow
MAM2-2, Reed-canary Grass Mineral Meadow Marsh
OAO, Open Aquatic

- The limits of the valleyland should be defined by a geotechnical engineer (i.e., stable top of slope and staked top of bank).
- The SABE identifies the Woodland as a Key Woodland Feature, thus, the Town could recommend a 20 m buffer applied from the dripline if they interpret it as a significant woodland.
- HDFs, Tributaries of Salt Creek and riparian wetlands are identified as contributing Redside Dace habitat.

Reference(s):

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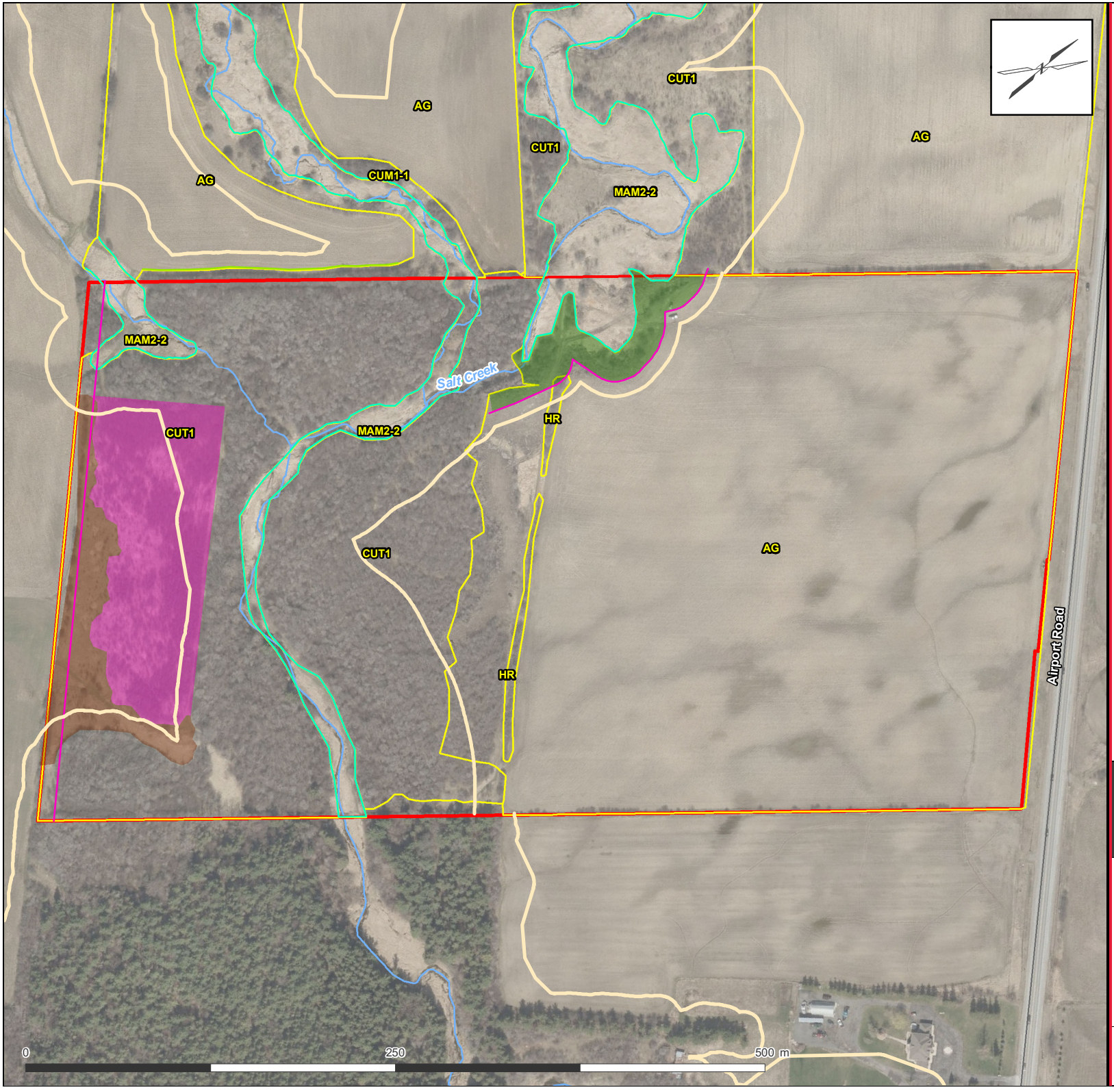
Figure 7
Proposed Site Plan

Project Name:
Airport Road Environmental Impact Study

Client Name:
Broccolini Airport Road Limited Partnership
(Caledon, Ontario)

GEI Consultants

Last Updated: November 2025
Document ID: 2500849



Subject Lands
Road
Watercourse
Surveyed Dripline
Surveyed Wetland Boundary
Development Limit
Ecological Land Classification

Proposed Areas for Compensation

Area A (0.650 ha)
Area B (1.524 ha)
Area C - NHS Setback (0.435 ha)

ELC Legend

Ag, Agricultural
CUM1-1, Dry - Moist Old Field Meadow
CUT1, Mineral Cultural Thicket
H, Hedgerow
MAM2-2, Reed-canary Grass Mineral Meadow Marsh
OAO, Open Aquatic

Reference(s):

1. Coordinate System: NAD 1983 CSRS UTM Zone 17N.
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Figure 8
Proposed Compensation Area

Project Name:
Airport Road Environmental Impact Study

Client Name:
Broccolini Airport Road Limited Partnership
(Caledon, Ontario)

GEI Consultants

Last Updated: November 2025
Document ID: 2500849

Appendix B Tables

Table 1: Field Studies and Natural Inventories (2024-2025)

SURVEYORS (SURNAME, INTL)	SURVEY ROUND	SURVEY TYPE	DATE (2024)	TIME		AIR TEMP (C°)	WATER TEMP (C°)	HUMIDITY (%)	CLOUD COVER (%)	BEAUFORT WIND SPEED	PRECIPITATION COMMENTS
				START	END						
Leslie, J. McDonald, A.	1	Stem Density Survey	28-NO	08:00	15:00	1	N/A	88	70	2	N/A
2025											
Mueller, L.	1	Detailed Geomorphic Assessment	18-MR	09:00	15:00	10	N/A	44	0	5	N/A
Teddy, P. McDonald, C.	1	Woodland Analysis	19-MR	08:00	15:00	16	N/A	50	60	3	N/A
Kimble, B.	1	Headwater Drainage Feature Assessment	16-AP	08:00	14:00	3	N/A	65	100	3	N/A
Kimble, B.	2	Headwater Drainage Feature Assessment	20-MA	08:00	13:00	3	N/A	47	90	4	Light Snow
Nieroda, M. Anderson, T.	1-1	Bat Acoustic Deployment/ Dusk to Dawn Acoustic Recording Survey	18-JN /19-JN	10:00	05:37	19	N/A	94	40	2	N/A
Nieroda, M. Anderson, T.	1-1	Dusk to Dawn Acoustic Recording Survey	19-JN/ 20-JN	21:05	05:37	15	N/A	84	15	3	N/A

Table 1: Field Studies and Natural Inventories (2024-2025)

SURVEYORS (SURNAME, INTL)	SURVEY ROUND	SURVEY TYPE	DATE (2024)	TIME		AIR TEMP (C°)	WATER TEMP (C°)	HUMIDITY (%)	CLOUD COVER (%)	BEAUFORT WIND SPEED	PRECIPITATION COMMENTS
				START	END						
Nieroda, M. Anderson, T.	1-1	Dusk to Dawn Acoustic Recording Survey	20-JN/ 21-JN	21:05	05:37	18	N/A	81	15	2	N/A
Nieroda, M. Anderson, T.	1-1	Dusk to Dawn Acoustic Recording Survey	21-JN/ 22-JN	21:06	05:37	25	N/A	65	10	4	N/A
Nieroda, M. Anderson, T.	1-1	Dusk to Dawn Acoustic Recording Survey	22-JN/ 23-JN	21:06	05:38	23	N/A	81	0	1	N/A
Nieroda, M. Anderson, T.	1-1	Dusk to Dawn Acoustic Recording Survey	23-JN/ 24-JN	21:06	05:38	25	N/A	72	5	3	N/A
Nieroda, M. Anderson, T.	1-1	Dusk to Dawn Acoustic Recording Survey	24-JN/ 25-JN	21:06	05:38	24	N/A	69	10	2	N/A
Nieroda, M. Anderson, T.	1-1	Dusk to Dawn Acoustic Recording Survey	25-JN/ 26-JN	21:06	05:39	18	N/A	67	30	3	N/A
Nieroda, M. Anderson, T.	1-1	Dusk to Dawn Acoustic Recording Survey	26-JN/ 27-JN	21:06	05:38	17	N/A	74	70	3	Light intermittent drizzle
Nieroda, M. Anderson, T.	1-1	Dusk to Dawn Acoustic	27-JN/ 28-JN	21:06	05:38	22	N/A	93	100	2	N/A

Table 1: Field Studies and Natural Inventories (2024-2025)

SURVEYORS (SURNAME, INTL)	SURVEY ROUND	SURVEY TYPE	DATE (2024)	TIME		AIR TEMP (C°)	WATER TEMP (C°)	HUMIDITY (%)	CLOUD COVER (%)	BEAUFORT WIND SPEED	PRECIPITATION COMMENTS
				START	END						
		Recording Survey									
Nieroda, M. Anderson, T.	1-1	Bat Acoustic Recording Collection	1-JL	08:00	10:00	14	N/A	83	0	2	N/A
Kimble, B.	3	Headwater Drainage Feature Assessment	22-JL	09:00	14:00	24	N/A	51	25	4	N/A

LEGEND:

BEAUFORT WIND SPEED SCALE	
0	Calm (<1 km/hr)
1	Light Air (1-5 km/hr)
2	Light Breeze (6-11 km/hr)
3	Gentle Breeze (12-19
4	km/hr)
	Moderate Breeze (20-28 km/hr)

MONTH (CODE)	
JA	January
FB	February
MR	March
AP	April
MA	May
JN	June
JL	July
AU	August
SE	September
OC	October
NO	November
DE	December

Table 2: Bat Acoustic Results Table

Acoustic Monitor Station	ELC	Low Frequency Calls					High Frequency Calls								
		Hoary Bat	Big Brown Bat	Silver-haired Bat	Unknown Low Freq.	Total Low Freq. Calls	Eastern Red Bat	Eastern Small-footed Myotis	Northern Myotis	Little Brown Myotis	Tri-colored Bat	Unknown Myotis (40K)	Unknown High Freq.	Total High Freq.	TOTAL
ARPT-01	CUT1	5	156	27	78	266	0	1	0	0	0	0	0	1	267
ARPT-02	CUT1	16	475	107	34	632	12	10	1	13	1	3	2	42	632
TOTAL		21	631	134	112	898	12	11	1	13	1	3	2	43	899

Table 3: Headwater Drainage Feature Classification and Management Recommendations

DRAINAGE FEATURE SEGMENT	STEP 1. HYDROLOGY		STEP 2. RIPARIAN	STEP 3. FISH HABITAT	STEP 4. TERRESTRIAL HABITAT	MANAGEMENT RECOMMENDATION
	FUNCTION	MODIFIERS				
H1S1	FT – 7 FC – 4 (Round 1) FC – 1 (Round 2) **Contributing**- Feature was flowing during early spring.		**Limited** – Riparian corridor is dominated by cropped agricultural land.	**Contributing** – No suitable fish habitat is present. Feature may provide contributing functions during rainstorms or snowmelt to support downstream direct fish habitat.	**Limited** – As per Table 7 in HDFA Guidelines, swale provides limited terrestrial function.	**Mitigation**
H2S1	FT – 7 FC – 4 (Round 1) FC – 1 (Round 2) **Contributing**- Feature was flowing during early spring.		**Limited** – Riparian corridor is dominated by cropped agricultural land.	**Contributing** – No suitable fish habitat is present. Feature may provide contributing functions during rainstorms or snowmelt to support downstream direct fish habitat.	**Limited** – As per Table 7 in HDFA Guidelines, swale provides limited terrestrial function.	**Mitigation**
H2S2	FT – 7 FC – 4 (Round 1) FC – 1 (Round 2) **Contributing**- Feature was		**Important –** Riparian corridor dominated by cultural thicket.	**Contributing** – No suitable fish habitat is present. Feature may provide contributing functions during rainstorms or	**Limited** – As per Table 7 in HDFA Guidelines, swale provides limited terrestrial function.	**Conservation**

Table 3: Headwater Drainage Feature Classification and Management Recommendations

DRAINAGE FEATURE SEGMENT	STEP 1. HYDROLOGY		STEP 2. RIPARIAN	STEP 3. FISH HABITAT	STEP 4. TERRESTRIAL HABITAT	MANAGEMENT RECOMMENDATION
	FUNCTION	MODIFIERS				
	flowing during early spring.			snowmelt or to support downstream direct fish habitat.		
H3S1	FT – 7 FC – 4 (Round 1) FC – 2 (Round 2) FC – 7 (Round 3) **Valued**- Feature was observed flowing in early spring, holding standing water in late spring and dry by summer.	Buried tile drain outlet is suspected but could not be confirmed at the upstream end of the feature.	**Important –** Riparian corridor dominated by cultural thicket.	**Contributing** – Feature is not navigable by fish. Feature may provides contributing functions during rainstorms or snowmelt to support downstream direct fish habitat.	**Limited –** As per Table 7 in HDFA Guidelines, channelized features provide limited terrestrial function.	**Conservation**
H3S2	FT – 2 FC – 4 (Round 1) FC – 2 (Round 2) FC – 7 (Round 3) **Valued**- Feature was observed flowing in early spring, holding standing water in late spring		**Important –** Swale feature within cultural thicket community.	**Contributing** – No suitable fish habitat is present. Feature may provide contributing functions during rainstorms or snowmelt to support downstream direct fish habitat.	**Limited** – As per Table 7 in HDFA Guidelines, swale provides limited terrestrial function.	**Conservation**

Table 3: Headwater Drainage Feature Classification and Management Recommendations

DRAINAGE FEATURE SEGMENT	STEP 1. HYDROLOGY		STEP 2. RIPARIAN	STEP 3. FISH HABITAT	STEP 4. TERRESTRIAL HABITAT	MANAGEMENT RECOMMENDATION
	FUNCTION	MODIFIERS				
	and dry by summer.					
H4S1	FT – 7 FC – 4 (Round 1) FC – 1 (Round 2) **Contributing**- Feature was flowing during early spring.		**Limited** – Riparian corridor is dominated by cropped agricultural land.	**Contributing** – No suitable fish habitat is present. Feature may provide contributing functions during rainstorms or snowmelt to support downstream direct fish habitat.	**Limited** – As per Table 7 in HDFA Guidelines, swale provides limited terrestrial function.	**Mitigation**
H4S2	FT – 6 FC – 2 (Round 1) FC – 1 (Round 2) **Contributing**- Feature held water during early spring.		**Important –** Feature is a wetland.	**Contributing** – No suitable fish habitat is present. Feature may provide contributing functions during rainstorms or snowmelt to support downstream direct fish habitat.	**Valued –** Feature provides habitat suitable for feeding or hydration for low mobility wildlife (i.e. amphibians).	**Conservation**

LEGEND:

FT	Feature Types (1-defined natural channel, 2-channelized, 3-multi-thread, 4-no defined feature, 5-tiled drainage, 6-wetland, 7-swale, 8-roadside ditch, 9-online pond outlet)
FC	Flow Conditions (1-no surface water, 2-standing water, 3-interstitial flow, 4-surface flow minimal, 5-surface flow substantial)

Note: Codes correspond with Ontario Stream Assessment Protocol (OSAP) guidelines

Table 4: FBWB Risk Assessment: Overall Risk Assessment

Wetland ID	ELC Vegetation Community	Magnitude of Hydrological Change	Sensitivity of Wetland	Risk Assessment
WL1	Reed-canary Grass Mineral Meadow Marsh (MAM2-2)	High	High	High
WL2	Reed-canary Grass Mineral Meadow Marsh (MAM2-2)	High	High	High
WL3	Reed-canary Grass Mineral Meadow Marsh (MAM2-2)	High	High	High

Appendix C Terms of Reference

August 25, 2025
Project No. 2500849

VIA EMAIL: Jason.Elliott@caledon.ca; Michael.Hynes@trca.ca

Jason Elliott, Senior Environmental Planner
Town of Caledon

Michael Hynes, Planner
Toronto and Region Conservation Authority

Re: Terms of Reference- Environmental Impact Study
Airport Road
Town of Caledon, Ontario

Dear Jason Elliott and Michael Hynes:

GEI Consultants Canada Ltd. (GEI) was retained by Broccolini Airport Road Limited Partnership (Proponent), to complete an Environmental Impact Study (EIS) in support of the proposed development legally described as Lot 21 Concession 6 East of Centre Road Chinguacousy. The site is generally located south of Old School Road, west of Airport Road, east of Torbram Road and north of Mayfield Road in Caledon, Ontario (herein referred to as the Subject Lands; **Figure 1, Appendix A**).

The Subject Lands are a participating property within the Tullamore North Employment Area Secondary Plan Area. This Secondary Plan area is currently undergoing a Master Environmental and Servicing Plan (MESP), to support a privately initiated Secondary Plan and Official Plan Amendment, to the Town of Caledon's Official Plan (OP). GEI is currently assisting with delivery of the MESP on behalf of the Proponent. The first submission of the MESP Report (MESR) was provided on May 16th, 2025 (along with the overall Secondary Plan OPA).

A Pre-Application Review Committee (PARC) meeting is scheduled for August 28th, 2025 and it is anticipated that the Town of Caledon will request the preparation of an EIS Terms of Reference (TOR).

The EIS will be required to assess the potential impacts of the proposed development on the natural heritage features and associated functions on and adjacent to the Subject Lands. This EIS must be prepared to the satisfaction of the Town of Caledon in consultation with the TRCA and will be guided by this TOR. This TOR is intended to align with Section 13.12.11 of the Future Caledon Official Plan (2024).

This Terms of Reference (TOR) has been prepared based on the existing natural feature types within and adjacent to the Subject Lands, as determined through the review of existing background information, air photo imagery, and ecological field studies completed as part of the MESR. Any subsequent data collected through the MESR process as that is finalized will also be used for the EIS.

The following outlines the EIS and proposed work program for the Subject Lands.

1. NATURAL HERITAGE PLANNING CONSIDERATIONS

The Subject Lands are subject to federal, provincial, and municipal legislation as well as land use policies established by the Town of Caledon, Peel Region, and the TRCA. The EIS will reference natural heritage components of the following regulatory agencies, local and regional municipalities, and/or legislation:

- Provincial Planning Statement (PPS; 2024);
- Region of Peel OP (2024 Consolidation);
- Town of Caledon OP (2024 Consolidation);
- Future Caledon OP (Future Caledon Draft OP, 2024);
- Ontario Regulation 41/24 under the *Conservation Authorities Act* (1990);
- TRCA Regulation Mapping (Draft 2024 Update);
- *Endangered Species Act* (ESA; 2007, as amended);
- *Fisheries Act* (1985); and
- *Migratory Birds Convention Act* (1994).

2. BACKGROUND REVIEW

The following resources were reviewed within the MESR for information relating to natural features and species that may be found on the Subject Lands:

- Ministry of Natural Resources (MNR) Natural Heritage Information Centre (NHIC) database (2025);
- MNR's Land Information Ontario (LIO) database (2025);
- Bird Studies Canada's Atlas of the Breeding Birds of Ontario (Cadman et al. 2007);
- Ontario Nature's Reptile and Amphibian Atlas (2020);
- Toronto Entomologists' Association's (TEA) Ontario Butterfly and Moth Atlases (2023, 2020);
- Fisheries and Oceans Canada's (DFO) Aquatic Species at Risk (SAR) Map (2025);
- Online citizen science databases (e.g., eBird and iNaturalist);
- Airport Road, Caledon Preliminary Environmental Impact Study (NRSI 2023);
- Master Environmental Servicing Report – Tullamore North Secondary Plan (GEI 2025);
- Region of Peel:
    - Settlement Area Boundary Expansion Study;
    - Environmental Screening Report (Wood, 2020); and
    - Scoped SWS (Part A, B, & C, Wood et al. 2022).

Any updates to background information since the completion of the MESR will be incorporated into the EIS.

3. ECOLOGICAL FIELD INVESTIGATIONS

An ecological survey program was completed as part of the Region of Peel's Settlement Area Boundary Expansion (SABE) Study and a more site-specific Preliminary Environmental Impact Study (NRSI, 2023) to provide the data required to complete a significance assessment for the natural heritage features present on and adjacent to the Subject Lands. Ecological surveys that were completed as a component of these programs included:

- Ecological Land Classification (ELC) using the standard ELC System for Southern Ontario (Lee et al., 1998);
- Three-season vascular flora inventory;
- Breeding Bird Surveys (Ontario Breeding Bird Atlas 10-minute point counts);
- Amphibian call count surveys (Bird Studies Canada 2009);
- Bat habitat assessment (MNRF 2017); and
- Aquatic habitat assessment (Stanfield et al. 2017)

In addition to the surveys undertaken by NRSI, GEI completed three rounds of Headwater Drainage Feature Assessments along with bat acoustic monitoring in 2025.

A feature-based wetland water balance is also being completed to support the impact assessment.

In addition to the above noted investigations, wetland staking has been completed by NRSI in September 2024 and a top of slope was surveyed by MTE and TRCA in September 2024. A woodland dripline staking will need to be scheduled with the Town this year.

Given the extensive field investigations undertaken on the Subject Lands to date, all of which remains current and applicable, no additional field investigations are warranted at this time.

4. ENVIRONMENTAL IMPACT ASSESSMENT

The EIS will characterize the biophysical environment of the Subject Lands by outlining the results of the background information review and the field data collected as part of the MESR. The following aspects of the natural environment will be described: topography, physiography, soils and geology; surface water and groundwater; flora and fauna; and natural hazards.

A detailed assessment of the significance of natural features and functions based on the results from the background review and the ecological fieldwork program will be completed as part of the EIS for the Subject Lands. These assessments will reference the PPS (MMAH 2024), municipal OPs, the Natural Heritage Reference Manual (MNR 2010), Significant Wildlife Technical Guide (MNR 2000), and the Significant Wildlife Habitat Eco-Region Criterion Schedule: Ecoregion 6E (MNRF 2015). The EIS will also address the presence of any TRCA regulated features (watercourses, wetlands, or other hazardous lands) within the Subject Lands.

Based on the proposed site plan for the Subject Lands, the EIS will identify and assess the potential impacts of the proposal on the environment and the significant features and functions within and adjacent to the Subject Lands. This assessment will consider direct and indirect potential effects, including those occurring during construction (e.g., short-term disturbance type effects), those more permanent impacts that will persist throughout the life of the development (e.g., long-term footprint effects), and potential cumulative effects. Where relevant, engineering and other technical reports will be incorporated into the impact assessment to assess potential impacts to the Subject Lands. The impact assessment will be completed for the physical and biological resources within and adjacent to the Subject Lands.

Where potential negative impacts are identified (i.e., and where they can't be avoided), the EIS will list and describe mitigation measures and/or design modifications that are proposed to eliminate or reduce potential negative impacts on natural area features and functions. As well, opportunities will be identified that could support the restoration or improvement of natural area features and functions and/or to compensate/offset net losses that may occur. The EIS will also determine the requirements for buffers and/or setbacks to protect natural features and address municipal requirements. Potential construction and post-construction monitoring and adaptive management plans, if required, will also be considered within the EIS.

Closing

We trust this Terms of Reference letter is satisfactory. Please don't hesitate to contact us at your earliest convenience with any questions or concerns.

Sincerely,

GEI Consultants Canada Ltd.

Anne McDonald
Ecologist, Project Manager
(519) 803-4355
anmcdonald@geiconsultants.com

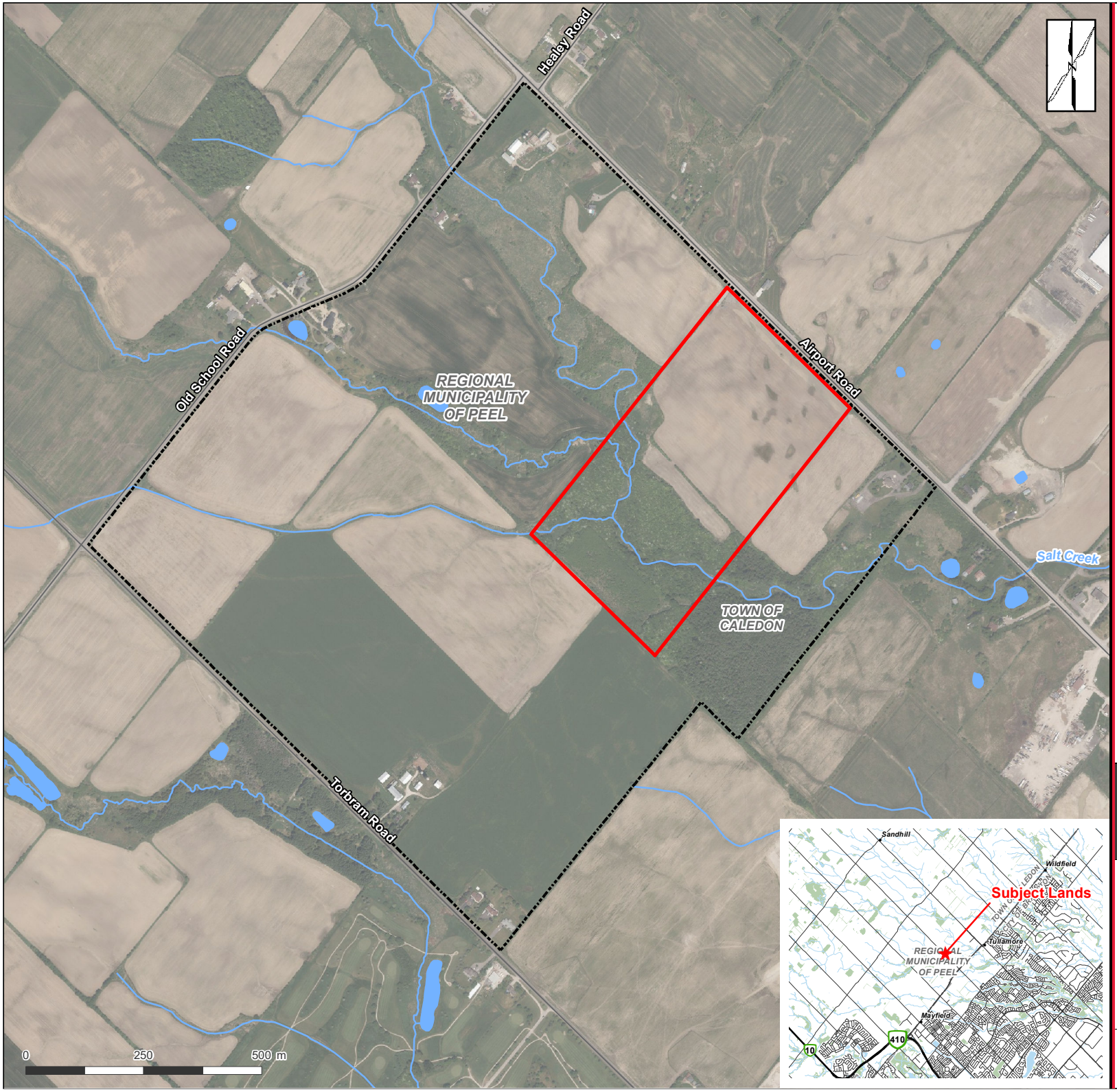
Sean Male
Project Director
(289) 407-7483
smale@geiconsultants.com

Appendices

Figure 1 Subject Lands

AM/SM

Appendix A Figures



Secondary Plan Area

Broccolini Property Boundary (Subject Lands)

Road

Watercourse

Waterbody

Reference(s):

1. Coordinate System: NAD 1983 CSRS UTM Zone 17N.
2. Base features produced under license with the Ontario Ministry of Natural Resources and Forestry © King's Printer for Ontario, 2025.
3. Orthoimagery © First Base Solutions, 2025. Imagery taken in 2024.

Figure 1
Subject Lands

Project Name:
Airport Road EIS

Client Name:
Broccolini Airport Road Limited Partnership
(Caledon, Ontario)

GEI Consultants

Last Updated: Aug 2025
Document ID: 2500849

McDonald, Anne

From: Maria Parish <Maria.Parish@trca.ca>
Sent: Friday, September 5, 2025 10:12 AM
To: Michael Hynes; Mumta Mistry; Jehan Zeb; Dilnesaw Chekol
Cc: Adam Miller; Jason Wagler; McDonald, Anne
Subject: [EXT] RE: Airport Road EIS - Terms of Reference

EXTERNAL EMAIL

Hi Michael

Well that was the shortest TOR I have ever seen.

No comments at this time as they commit to a FBWB.

Please use this email as my sign off.

M

Maria Parish, B.Sc., M.A., CAN-CISEC
Senior Planning Ecologist
Planning Ecology | Policy Planning

T: (437) 880-1969
E: maria.parish@trca.ca
A: 5 Shoreham Drive, Toronto, ON, M3N 1S4 | trca.ca

Toronto and Region Conservation Authority

GREATER TORONTO'S TOP 2025 EMPLOYERS

-----Original Appointment-----
From: Michael Hynes <Michael.Hynes@trca.ca>
Sent: August 27, 2025 8:10 AM
To: Michael Hynes; Mumta Mistry; Jehan Zeb; Maria Parish; Dilnesaw Chekol
Cc: Adam Miller; Jason Wagler; McDonald, Anne
Subject: Airport Road EIS - Terms of Reference
When: September 5, 2025 7:00 AM-7:30 AM (UTC-05:00) Eastern Time (US & Canada).
Where: Microsoft Teams Meeting

Good Morning, I am circulating the Airport Road EIS – Terms o Re erence – It's a very small document so I have given only 10 days to review.

Ann you have been added to advise that I have circulated the document.

_____

Microsoft Teams Need help?

Join the meeting now

Meeting ID: 223 838 449 936 1

Passcode: zT7rm9kb

For organizers: Meeting options

_____

Appendix D Preliminary EIS

Airport Road, Caledon

Preliminary Environmental Impact Study

Prepared for:

AJ Taylor
Broccolini Real Estate Group
2680 Skymark Avenue, Suite 800
Mississauga, Ontario – L4W 5L6

Project No. 2849A | June 2023

NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

Airport Road, Caledon

Preliminary Environmental Impact Study

Project Team

Jessica Linton	Senior Terrestrial and Wetland Biologist, Project Advisor
Sam Catry	Aquatic Biologist, Project Manager
Hashveenah Manoharan	Terrestrial and Wetland Biologist, Certified Arborist
Jeremy Bannon	Terrestrial and Wetland Biologist, Certified Arborist
Christy Humphrey	Terrestrial and Wetland Biologist
Gerry Schaus	G.I.S. Specialist

Report submitted on June 29, 2023

Sam Catry
Project Manager
Aquatic Biologist

Table of Contents

List of Tables

List of Appendices

Maps

1.0 Introduction

Natural Resource Solutions Inc. (NRSI) was retained in July 2022 by Broccolini Real Estate Group to complete an Environmental Impact Study (EIS) for a proposed industrial development located south of Airport Road between Old School Road and Mayfield Road in Caledon, Ontario (Map 1). The majority of the subject property is currently designated as Agricultural (A1) within the Town of Caledon Official Plan (2018). However, a small portion of the subject property within the southwest is zoned as Environmental Policy Area. The subject property is proposed to be included within the Region of Peel Settlement Area Boundary Expansion (SABE) as Future Strategic Employment Area (Region of Peel 2022). As such, it is anticipated that local official plans (Town of Caledon and Region of Peel) and zoning by-laws will be updated to specify permitted land-uses, including Industrial use. Therefore, no Official Plan Amendment or Zoning By-law Amendment is proposed at this time.

For the purposes of this report, the term "subject property" refers to the portion Lot 21, Concession 6 East of Centre Road, Chinguacousy owned by the proponent. The term 'study area' will be used in this report when referring to the subject property and adjacent lands within 1km, as well as contiguous natural features (Map 1).

The subject property, shown on Map 1, is approximately 24.7ha in area. The subject property borders Airport Road along the northeast property boundary, and is otherwise bordered by agricultural and naturalized areas along the remaining property boundaries. The northern half of the property consists of agricultural fields while the southern half is characterized by culturally influenced thicket habitat bisected by Salt Creek, and meadow marsh habitat associated with the floodplain of Salt Creek. The wetland features, Salt Creek, the floodplain, and steep valley/erosion hazard slopes associated with the creek are regulated by the Toronto Region Conservation Authority (TRCA) under O.Reg 166/06. The Region of Peel (2014) designates the corridor associated with Salt Creek as a Core Valley and Stream Corridor within the Greenland System, and is also designated as an Environmental Policy Area by the Town of Caledon (2018).

Finally, the study area is nested within a broader geographical area for which a variety of available background information sources were reviewed. Legacy data was also collected from several wildlife atlases, which are available in a 10x10km grid, as well as the Natural Heritage Information database (NHIC), which is available in a 1x1km grid (MNRF 2022).

2.0 Project Scoping

2.1 Terms of Reference

A proposed draft Terms of Reference (ToR) for the final EIS was scoped based on available background information, the TRCA Environmental Impact Statement Guidelines (2014), and both Regional (Region of Peel 2022) and local (Town of Caledon 2018) Official Plans. The draft ToR for the EIS (Appendix I) was submitted to the TRCA, Town of Caledon, and Peel Region for review and comment on September 2, 2022. Comments from the TRCA indicated that the proposed development was in relation to a new employment use area associated with the Region of SABE. TRCA also indicated that broader planning exercises, including a Secondary Plan, local subwatershed studies, and block level functional servicing studies are required in advance of site-specific studies. Therefore, at this time, the TRCA will not provide comments on a ToR for a site-specific EIS in advance of the broader landscape studies (pers. comm. Nick Cascone, TRCA 2022). The Town of Caledon and Region of Peel have not provided comment on the submitted draft ToR.

The draft ToR provided in Appendix I has been scoped based on existing policies and guidelines and NRSI's experience conducting similar studies in the Region of Peel. It is anticipated that the existing ToR and EIS will be updated once the broader planning studies are completed by the Town, Region, and TRCA to incorporate any additional requirements.

2.2 Collection and Review of Background Information

Existing natural heritage information for the study area was collected and reviewed. This information assisted in the identification of key habitats and species that are reported from, or have the potential to occur, within the study area. Background information sources that were reviewed include:

- Ministry of Natural Resources and Forestry (MNRF), Guelph District;
- Natural Heritage Information Centre (NHIC) database (MNRF 2022);
- Toronto and Region Conservation Authority (TRCA) Regulation Mapping (TRCA 2020);
- Town of Caledon Official Plan (2018);
- Region of Peel Official Plan (2022);
- Growth Plan for the Greater Golden Horseshoe (Government of Ontario 2020);
- Department of Fisheries and Oceans (DFO) Aquatic Species at Risk Mapping (2022);

- Distribution and status of the vascular plants of the Greater Toronto Area (Varga 2009);
- Humber River Watershed Plan (TRCA 2008a);
- Ontario Breeding Bird Atlas (Bird Studies Canada et al. 2006);
- Ontario Reptile and Amphibian Atlas (Ontario Nature 2019);
- Atlas of the Mammals of Ontario (Dobbyn 1994);
- Ontario Butterfly Atlas (MacNaughton et al. 2020); and,
- Ontario Odonate Atlas Database (OOAD 2022).

2.2.1 Significant Species Screening

Initial wildlife lists were compiled as part of the due diligence process to provide information on species reported from within a 10km radius of the study area using the atlases listed above. The atlases provide data based on 10km x 10km survey squares; information on species from the square overlapping the study area (17NJ95) was compiled. These initial species lists were used to guide the scope and type of wildlife surveys required, as outlined in the following sections.

Based on these initial species lists, numerous Species at Risk (SAR) and Species of Conservation Concern (SCC) were reported from the vicinity of the study area. SAR are those species listed on the SAR in Ontario List (SARO) (MNRF 2020). These include species identified by the Committee on the Status of Species at Risk in Ontario (COSSARO) as provincially Endangered or Threatened. Species listed by COSSARO as Endangered or Threatened are protected by the *Endangered Species Act*, 2007 (ESA), which includes protection of the species' habitat, and are referred to as regulated SAR. SCC are defined as:

- Species designated provincially as Special Concern;
- Species that have been assigned a conservation status (S-Rank) of S1 to S3 or SH by NHIC; and
- Species that are designated federally as Threatened or Endangered by the Committee for the Status of Endangered Wildlife in Canada (COSEWIC), but not provincially by COSSARO. If these species are listed under the Species at Risk Act (SARA) under Schedule 1 they are protected by the federal Act but not the provincial ESA.

Habitat for SCC is considered Significant Wildlife Habitat (SWH), which is afforded protection under the Provincial Policy Statement (PPS, OMMAH 2020), the Town of Caledon Official Plan

(2018), and Region of Peel Official Plan (2022). The preferred habitats for reported SAR/SCC were cross-referenced against habitats within and adjacent to the study area. This was completed to ensure that the potential presence of all SAR and SCC was adequately assessed in this scoped EIS.

Of the SAR and SCC that were identified as having records within the study area and surrounding 10km, numerous species were flagged during the preliminary desktop screening as potentially having suitable habitat within the study area. Field surveys conducted in 2022 and 2023 were designed to detect the presence of the potential SAR and SCC and their habitats. The final significant species screening, updated based on the results of field surveys, is provided in 0. This EIS analyzes potential impacts to any SAR or SCC that may be using habitats within the study area.

2.2.2 Significant Wildlife Habitat Screening

A screening exercise was also conducted to determine the presence of any SWH types within the study area. The Significant Wildlife Habitat Technical Guide (SWHTG) is a guideline document that outlines the types of habitats that the MNRF considers significant in Ontario (OMNR 2000), as well as criteria to identify these habitats within Ecoregion 6E where the study area is located (MNRF 2015a). The SWHTG groups SWH into four broad categories: i) seasonal concentration areas, ii) rare vegetation communities and specialized wildlife habitat, iii) habitats of SCC, and iv) animal movement corridors.

Based on the results of this preliminary desktop screening exercise and early site investigations, several candidate SWH types were identified as occurring, or having the potential to occur within the study area. Field surveys assessing the presence of the potential SWH types were completed and the results are summarized in the sections below. The final SWH screening updated based on the results of field surveys is provided in Appendix III.

3.0 Relevant Policies, Legislation and Planning Studies

Natural features identified during the review of background information and field investigations were evaluated against relevant policies, legislation, and planning studies, summarized in Table 1. Relevant Policies, Legislation, and Planning Studies, to help inform suitable land-use concepts, guide the layout of development, and identify areas to be protected.

Table 1. Relevant Policies, Legislation, and Planning Studies

Policy/Legislation/Planning Study	Description	Project Relevance
Provincial Policy Statement (OMMAH 2020)	• Issued under the authority of Section 3 of the *Planning Act* and came into effect on May 1, 2020, replacing the 2014 PPS (OMMAH 2014). • Section 2.1 of the PPS – Natural Heritage establishes clear direction on the adoption of an ecosystem approach and the protection of resources that have been identified as 'significant'. • The Natural Heritage Reference Manual (OMNR 2010) and the Significant Wildlife Habitat Technical Guide (OMNR 2000) were prepared by the MNRF to provide guidance on identifying natural features and in interpreting the Natural Heritage sections of the PPS.	• Based on preliminary analysis and the initial site visit, suitable recovery SAR habitat is present within Salt Creek. This habitat will require protection and adequate buffering. • No significant natural heritage features or candidate SWH was identified within the subject property as having potential implications under the PPS.
Endangered Species Act (Government of Ontario 2007)	• The *Endangered Species Act* (ESA), came into force in 2007. • The ESA prohibits killing, harming, harassing or capturing Species at Risk (SAR) and protects their habitats from damage and destruction. • Ontario Regulation 242/088 under the ESA applies to all species on the Species at Risk in Ontario List, as of June 2, 2017.	• Salt Creek is designated as 'recovery habitat' for Redside Dace, and is therefore regulated under the ESA. • Protection for recovery habitat of Redside Dace includes the meander belt width and an additional 30 m from the edge of the meander belt. • No other SAR identified within the background review have suitable habitat identified within the subject property.
Species at Risk Act (Government of Canada 2022)	• The SARA applies to all species listed on Schedule 1 that are on federal lands, are an aquatic species, or are a species of migratory bird protected by the MBCA (1994). The SARA provides protection to endangered and threatened species and their habitat.	• Salt Creek contains 'recovery habitat' for Redside Dace, and is therefore subject to protections under the SARA.

Policy/Legislation/Planning Study	Description	Project Relevance
Migratory Birds Convention Act (Government of Canada 1994)	• The *Migratory Birds Convention Act (*MBCA) protects migratory game birds, insectivorous birds, and several other migratory non-game birds from persecution in the form of harassment. • The schedule of on-site work must consider MBCA windows, with timing of the breeding bird season typically occurring between April 1 and August 31; however, this is a guideline, since the MBCA applies to nesting bird species. • "Incidental take" is considered illegal, with the exception of a permit obtained by the Canadian Wildlife Service (CWS).	• Species protected by the MBCA are known to occur and were observed within the study area property during 2022 and 2023 field surveys. • Four species of birds were confirmed to be breeding within the subject property, including: o Killdeer (*Charadrius vociferus*) o American Robin (*Turdus migratorius*) o Red-winged Blackbird (*Agelaius phoeniceus*) o Common Grackle (*Quiscalus quiscula*) • Additional species exhibited possible or probable breeding evidence. • The timing of construction activities, especially vegetation clearing and site grading, must have consideration for the MBCA.
The Canadian *Fisheries Act* (Government of Canada 1985)	• Last amended in August 2019, the federal Fisheries Act provides for the protection of fish and fish habitat. • Fish are protected through two core prohibitions: Section 34.4(1) prohibits the death of fish by means other than fishing, and Section 35(1) prohibits the harmful alteration, disruption, or destruction (HADD) of fish habitat (Government of Canada 2019). • Fish habitat is defined as "spawning grounds and any other areas, including nursery, rearing, food supply and migration areas, on which fish depend directly or indirectly in order to carry out their life processes".	• The need for project review by the Department of Fisheries and Oceans (DFO) Fish and Fish Habitat Protection Program (FFHPP) will be determined based upon final draft design, and upon the completion of a proponent-led assessment of whether the proposed undertaking can meet all measures to protect fish and fish habitat (as outlined in the DFO's online Projects Near Water guidelines). • Based on the current design, adequate buffering is provided from Salt Creek to mitigate against the harmful alteration, disruption, or death to fish and fish habitat.
Fish and Wildlife Conservation Act (Government of Ontario 1997)	• The *Fish and Wildlife Conservation Act* (FWCA) provides protection for certain bird species not protected under the MBCA (e.g., raptors), as well as furbearing mammals and their dens or habitual dwellings, aside from the Red Fox (*Vulpes vulpes*) and Striped Skunk (*Mephitis mephitis*).	• The timing of construction activities, especially vegetation clearing and site grading must have consideration for bird nesting (including nesting season for Raptors, Hawks and Owls) and den sites for furbearing mammals. • Wildlife sweeps by a qualified biologist are recommended in advance of any vegetation

Policy/Legislation/Planning Study	Description	Project Relevance
		clearing and site grubbing during the bird active season to ensure that no active nests/dens are present.
O.Reg 166/06 - Toronto and Region Conservation Authority: Regulation of Development, Interference with Wetlands and Alterations to Shorelines and Watercourses (Government of Ontario 2013)	○ The O. Reg. 166/06 identifies restrictions to development, interference, and alteration of wetlands, watercourses, and shorelines regulated under the Toronto Region Conservation Authority (TRCA). ○ O. Reg 166/06 identifies constraints associated with wetlands, watercourses, and shorelines within the TRCA jurisdiction.	○ Development, alteration, or interference with wetlands is prohibited within 30 meters of all wetlands under O.Reg. 166/06, subject to approval by the TRCA. ○ Development, alteration, or interference with watercourses is prohibited within 15m of stable top of bank of Salt Creek, subject to approval by TRCA. ○ The TRCA may grant permission of development within the buffers of regulated areas should it be shown that no impact will occur. An application for submission must be submitted to the TRCA prior to any approval for development within these regulated areas.
Region of Peel Official Plan (Region of Peel 2022)	○ The *Region of Peel Official Plan* (OP) (2022) identifies the natural features comprising the Greenlands System and Natural Heritage System (NHS) within the region. ○ The NHS consists of both the Greenbelt Natural Heritage System and the Oak Ridges Moraine Conservation Plan. ○ Examples of key features identified within the Greenlands System includes significant wildlife habitat (SWH), valleys and stream corridors, wetlands, woodlands, and habitat for SAR.	○ Development or site alteration is prohibited within the Core Areas of the Greenlands System in Peel Region. Any development or site alteration on adjacent lands to the Greenlands System requires an EIS. ○ An area associated with the Salt Creek corridor is designated as a Core Valley and Stream Corridor of the Greenland System within the Region's OP (Schedule A). ○ The subject property falls outside the boundaries of the Greenbelt System and the Oak Ridges Moraine Conservation Plan.
Town of Caledon Official Plan (Town of Caledon 2018)	○ The *Town of Caledon Official Plan (OP)* (2018) identifies the natural features, ecological functions and potential linkages and corridors that comprise Natural Core Areas and Natural Corridors. These	○ Development within or adjacent to the EPA requires the completion of an Environmental Impact Study (EIS) and Management Plan (MP) to demonstrate that it will not negatively impact the natural heritage or hydrologic features.

Policy/Legislation/Planning Study	Description	Project Relevance
	features are also designated as Environmental Policy Area (EPA) and subject to detailed land use policies. ○ Examples of key features identified within the Natural Core Areas and Corridors include significant habitat of SAR, fish habitat, wetlands, woodlands, ANSI, Environmentally Significant Areas (ESAs), stream and valley corridors, and Significant Wildlife Habitat (SWH).	○ The majority of the subject property is zoned as Prime Agricultural Area, however a small portion associated with Salt Creek is designated as an EPA (Schedule A). ○ A minimum of 15m natural vegetation buffer for tributaries to the Humber River (including Salt Creek) is required. ○ Based on the OP, a scoped EIS would be necessary for future development due to the presence of the EPA.

4.0 Field Methods

Field studies were completed within the study area to characterize existing conditions and identify significant natural heritage features and species that have the potential to be adversely affected by the proposed development. The scope and methods of the field survey program were determined based on the review of background information and existing habitat types present within the study area. The field program was initiated in fall 2022, and was completed in June 2023. Surveys completed are summarized in Table 2. Field Survey .

Observations of all wildlife species were recorded while on site during all surveys. This included direct observations, as well as observations of signs such as tracks, scat, or vocalizations. All natural and human-induced disturbances within the study area were documented during site visits. The verification and continued assessment of SWH and SAR was ongoing during all site visits.

4.1 Terrestrial Field Surveys

4.1.1 Ecological Land Classification and Vegetation Inventories

Vegetation community delineation was completed within the study area using aerial imagery interpretation and refined through investigations in the field. The standard ELC System for southern Ontario was applied (Lee et al. 1998). Details of the vegetation communities were recorded, including species composition, dominance, uncommon species or features, and evidence of anthropogenic disturbance. A three-season vascular flora inventory was conducted within the study area. During vascular flora inventories, NRSI biologists completed a systematic search within each identified ELC polygon and documented all plant species observed. The boundary of the wetland (MAM2-2) was delineated by staff trained in the Ontario Wetland Evaluation System (OWES) on May 23, 2023 in conjunction with the summer vegetation inventory.

Table 2. Field Survey Summary

Survey Type	Protocol	Date	NRSI Staff
Vegetation Mapping and Surveys			
Spring Vegetation and ELC	Systematic Search by ELC polygon (Lee et al. 1998)	April 15, 2022	J. Linton
Summer Vegetation Inventory and Wetland Boundary Delineation		May 23, 2023	C. Humphrey A. Kraut
Fall Vegetation Inventory and ELC refinements		September 2, 2022	H. Manoharan
Bird Surveys			
Breeding Bird Surveys	10-minute Point Counts (OBBA (2001)	June 5, 2023	J. Nafziger A. Kraut
		June 26, 2023	M. Alexandrou J. Robinson
Mammal Surveys			
Bat Habitat Assessment (Leaf-off)	MNRF 2017	April 10, 2023	M. Beck H. Manoharan
Herpetofauna			
Anurans (Calling Amphibian) Surveys	BSC 2009	April 21, 2023	A. Cantwell J. Nafziger
		May 30, 203	R. Pivar A. Kraut
		June 16, 2023	K. Van Geothem J. Robinson
Aquatic Habitat			
Aquatic Habitat Assessment	Stanfield et al. 2017	April 15, 2022	S. Catry

4.1.2 Breeding Bird Surveys

Breeding bird surveys were completed on June 5 and June 26, 2023. Surveys consisted of 10-minute point counts at 6 locations representing the different habitat types throughout the subject property. Incidental observations between point count locations and in conjunction with other field investigations provided supplementary breeding bird data. Surveys occurred between dawn and 1000hrs. Point count locations are shown on Map 2, as indicated by Breeding Bird Monitoring Station (BMB). All visual and auditory observations of birds were recorded, as well as the highest level of breeding evidence exhibited for each species. Breeding evidence was recorded according to the Ontario Breeding Bird Atlas protocol (BSC 2009).

4.1.3 Mammal Surveys

Bat Cavity Habitat Assessments

An inventory of cavity trees that may provide suitable habitat for bats was conducted on April 10, 2023 during leaf-off conditions. All trees with crevices or exfoliating bark were assessed and documented where bat habitat may be provided. The leaf-off survey was completed in accordance with the MNRF Survey Protocol for Species at Risk Bats within Treed Habitats (2017).

4.1.4 Herpetofauna Surveys

Anuran Surveys

A total of three evening anuran (frog and toad) calling surveys were conducted on April 21, May 30, and June 16, 2023 according to the Marsh Monitoring Program protocol (BSC 2009) at four stations (Map 2). Monitoring focused on calling frogs and toads during three-minute surveys, which included call intensity and an estimated number of individuals. Additional information, including survey time, air and water temperature, wind speed, and cloud cover were recorded at each survey station where possible

4.1.5 Significant Wildlife Habitat and Species at Risk Habitat Assessment

The assessment of potential SWH and habitat for SAR within the study area was conducted during all field surveys. All ELC polygons delineated within the study area were thoroughly inspected for characteristics consistent with the criteria outlined in the SWHTG and supporting documents (OMNR 2000, MNRF 2015a), with a particular focus on the candidate SWH types identified during the preliminary SWH screening exercise (Appendix III). Natural habitats were also assessed for their potential to provide habitat for those SAR and SCC with records from within the study area (0).

4.2 Aquatic Surveys

An aquatic habitat assessment was completed on April 15, 2022. NRSI biologists completed the aquatic habitat characterization on the section of Salt Creek bisecting the southern portion of the subject property. The survey followed a modified version of the standard Ontario Stream Assessment Protocol (OSAP) methodology (Stanfield 2017). The following information was recorded during the survey:

- General characteristics and channel morphology;
- Substrate composition;
- Flow conditions;
- In-stream and riparian vegetation;
- Location and type of fish habitat available, if present (e.g., refuge areas, nesting sites, areas and types of food supply including overhanging vegetation, woody debris);
- Adjacent land use and slopes; and
- Evidence of groundwater discharge.

5.0 Existing Conditions

5.1 Soil, Terrain and Drainage

The study area is located within the Niagara Escarpment physiographic region and is characterized by drumlinized till plains (Chapman and Putnam 1984). Bedrock within the study area is composed of the Queenston Formation, and is comprised primarily of shale, limestone, dolostone, and siltstone (OGS 2022). The surficial geography of the Niagara Escarpment is characterized by steep, rocky topography which is overlain by significant morainic deposits within the Caledon area (Chapman and Putnam 1984). Soils within this region are characterized by deposits of clay to silt-textured till derived from glaciolacustrine deposits and shale, with modern alluvial deposits of clay, silt, sand, gravel, and organics associated with Salt Creek and the adjacent floodplain (OGS 2022).

The topography within the subject property is relatively flat, generally sloping gradually southeast towards Salt Creek. The clay-dominated surface soils in conjunction with the gradual slope within the subject property provides inputs of surficial run-off into Salt Creek (TRCA 2008a).

The study area lies within the TRCA's jurisdiction, within the West Humber Subwatershed, within the greater Humber River Watershed. Salt Creek originates to the northwest of the subject property and flows southeast through the southern portion of the property. Downstream of the subject property, the creek converges with the West Humber River southeast in Brampton. West Humber River continues to flow generally southeast until it outlets into Lake Ontario in Etobicoke.

5.2 Vegetation

5.2.1 Vegetation Communities

A summary of ELC communities characterized within the study area is provided in Table 3 Vegetation Communities, and the location of each community is shown on Map 2. The subject property where the development is proposed is characterized by agricultural fields, with naturalized features located along the southern extent of the property associated with Salt Creek. A Reed-Canary Grass Graminoid Mineral Meadow Marsh (MAM2-2) characterizes the floodplain of Salt Creek, with small pockets interspersed along the channel and tributary to Salt Creek. A Mineral Cultural Thicket (CUT1) exists within the Salt Creek corridor, likely associated with previous disturbance and regeneration, and is dominated primarily by Common Buckthorn

(*Rhamnus cathartica*). Hedgerows exists along the northeastern extent of the CUT1, left as hedgerows following recent clearing by the previous landowner.

Table 3 Vegetation Communities

ELC Code	Community Type	Community Description
Cultural		
CUT1	Mineral Cultural Thicket Ecosite	This cultural thicket community occurs along the eastern and western sides of Salt Creek, occupying the majority of the southern extent of the subject property. This community has been heavily culturally impacted, and contains a mixture of native and non-native species. The most abundant shrub comprising this thicket community is non-native Common Buckthorn (*Rhamnus cathartica*), which is tolerant of dry, disturbed conditions. The regionally significant species (L3) White Spruce (*Picea glauca*) and Spotted St. John's-wort (*Hypericum punctatum*) were observed in small numbers in this community. The regionally significant tree species, White Spruce, is likely attributed to introduction through anthropogenic means. No federally or provincially significant vegetation species were observed in this community. Canopy: American Elm (*Ulmus americana*) > Sugar Maple (*Acer saccharum*) = Manitoba Maple (*Acer negundo*) Sub-canopy: Common Buckthorn > Dotted Hawthorn (*Crataegus punctata*) > Common Apple (*Malus pumila*) Understory: Common Buckthorn > Chokecherry (*Prunus virginiana*) Groundcover: Common Buckthorn > Timothy (*Phleum pratense*) = Panicled Aster (*Symphyotrichum lanceolatum)*
H	Hedgerow	The hedgerows present within the subject property occur to the east of the existing Cultural Thicket, and is a remnant of the outer extent as a result of recent vegetation clearing. As such, the characteristics of the hedgerows closely reflect existing conditions within the thicket, including the heavy cultural influence and mixture of native and non-native species. The most abundant shrub within the hedgerow is non-native Common Buckthorn, and native Downy Hawthorn (*Crataegus mollis*). One regionally significant species (L3), Strict Blue-eyed Grass (*Sisyrinchium montanum*), was observed in low abundances within this community. No federally or provincially significant vegetation species were observed within this community. Canopy: N/A Sub-canopy: Common Buckthorn = Downy Hawthorn (*Crataegus mollis*) > Common Apple Understory: Chokecherry = Tartarian Honeysuckle (*Lonicera tatarica*) = Common Apple Groundcover: Orchard Grass (*Dactylis glomerata*) = Kentucky Bluegrass (*Poa pratensis*) = Wild Strawberry (*Fragaria virginiana*)

Wetland		
MAM2-2	Reed Canary Grass Graminoid Mineral Marsh Meadow	The mineral marsh community occurs in various patches throughout the western portion of the subject property, generally associated with Salt Creek and its' tributaries. This community also occurs within the floodplain of Salt Creek. This community has been heavily culturally impacted, containing a mixture of native and non-native species. The most abundant shrub within this community is non-native Common Buckthorn and Dotted Hawthorn (*Crataegus punctata*). No regionally, federally, or provincially significant species were documented within this community. Canopy: N/A Sub-canopy: Common Buckthorn = Dotted Hawthorn > Crack Willow (*Salix euxina*) Understory: Manitoba Maple = Wild Cucumber (*Cucumis sativus*) Groundcover: Reed Canary Grass (*Phalaris arundinacea*) > Elecampane (*Inula helenium*) = Common Dandelion (*Taraxacum officinale*)

5.2.2 Vascular Flora

In total, 112 plant species were observed by NRSI biologists during the three-season vegetation inventory. Of the 112 vascular flora species reported from within the study area, 63 (56%) are considered native and 49 (44%) are considered non-native.

No plant SAR or SCC were observed by NRSI biologists during field surveys. A total of 3 locally significant plant species (L3) (TRCA 2008c) were observed within the subject property, including White Spruce (*Picea glauca*), Strict Blue-eyed-grass (*Sisyrinchium montanum*), and Spotted St. John's-wort (*Hypericum punctatum*).

A complete list of the vascular plant species observed in the study area during vascular flora inventories and ELC completed by NRSI biologists is provided in Appendix IV.

5.3 Wildlife

5.3.1 Birds

According to the Ontario Breeding Bird Atlas (OBBA) (BSC et al. 2006), 118 bird species are reported from the 10km x 10km square (17NJ95) that overlaps with the study area.

NRSI biologists observed 35 bird species from within the study area during breeding bird surveys and other field surveys. Most species were observed exhibiting possible or probable evidence of breeding, as indicated by singing males, courtship displays, or the presence of the species within a permanent territory. Species that were confirmed as breeding within the study area included American Robin (*Turdus migratorius*), Killdeer (*Charadrius vociferus*), Red-winged Blackbird (*Agelaius phoeniceus*), and Common Grackle (*Quiscalus quiscula*).

During field surveys, NRSI observed one SAR bird within the subject property, Bobolink (*Dolichonyx orzivorus*), and one SCC, Barn Swallow (*Hirundo rustica*), within the subject property. Barn Swallow was documented foraging in proximity to the MAM2-2 located east of Salt Creek, however, no suitable nesting habitat is present within the subject property. A single male Bobolink was documented singing approximately 100m south of BMB-003 (Map 2) outside the subject property during the June 5, 2023 breeding bird survey. There is no suitable nesting habitat for Bobolink or other grassland birds within the subject property, which indicates this was likely a lone male looking for territory.

The full list of all birds observed by NRSI biologists is provided in Appendix V.

5.3.2 Herpetofauna

According to the Ontario Reptile and Amphibian Atlas (ORAA) (Ontario Nature 2019), 15 species of herpetofauna are reported from the 10km x 10km square (17NJ95) that overlaps with the study area. The majority of these species are common throughout southern Ontario and considered to have stable populations. Species reported by the ORAA includes a single herpetofauna SCC: Snapping Turtle (*Chelydra serpentina*) and no SAR herpetofauna.

NRSI biologists documented two herpetofauna species from within the study area during targeted anuran surveys and incidentally during other field surveys, including Gray Treefrog (*Hyla versicolor*) and Western Chorus Frog (Great Lakes/ St. Lawrence – Canadian Shield population) (*Pseudacris triseriata*). Gray Treefrog was documented calling in low numbers during targeted anuran surveys from ANR-003 and ANR-004 during the May 30, 2023 survey. Western Chorus Frog is listed as Threatened federally, and is considered a SCC. This species was only documented calling approximately 200m west of ANR-002 (Map 2).

Appendix VI provides a full list of all herpetofauna species with records from within the study area.

5.3.3 Mammals

According to the Mammal Atlas of Ontario (Dobbyn 1994), 46 mammal species are reported from the 10km x 10km atlas square that overlaps with the study area (NU95). In total, two mammal species were observed incidentally by NRSI biologists during field surveys in 2022 and 2023, including Eastern Coyote (*Canis latrans*) and White-tailed Deer (*Odocoileus virginianus*). These species observed are common within the TRCA (2019). Appendix VII provides a full list of all mammal species with records from within the study area.

Based on available records, numerous SAR and SCC are reported from the vicinity of the study area (Dobbyn 1994), which includes the potential for SAR bats. Leaf-off bat habitat assessments and tree inventories identified 13 trees with suitable roosting features (e.g., cavities, knotholes, sloughing bark) were observed within the subject property (Map 3).

5.3.4 Freshwater Fish

According to existing Aquatic Resource Area data (MNRF 2019), 15 species of fish are known to be present within Salt Creek. All species are known to inhabit cool- to warmwater thermal

regimes, and with the exception of Redside Dace (*Clinostomus elongatus*), are all common within Ontario.

The DFO and MNRF both indicate that Redside Dace is potentially present within Salt Creek (2023; 2019). Currently, Redside Dace are not known to occupy the watercourse, however, the watercourse is regulated as 'Recovery Habitat' and is therefore protected under the ESA and SARA, as Redside Dace are Endangered both provincially and federally. Recovery habitat is identified as previously occupied habitat, and includes supporting habitat, such as riparian zone, meander belt, wetlands, and groundwater supply. No targeted fish sampling was proposed as part of the work plan due to existing data. Appendix VIII provides a full list of all fish species with records from within the study area.

5.3.5 Insects

According to the Ontario Odonata Atlas Database (OOAD 2022) and Natural Heritage Information Centre (NHIC), three odonata (dragonfly and damselfly) species are reported from the 10km x 10km square (17NJ95) that overlaps with the study area. Based on available records, no SAR or SCC odonates are reported from the study area.

According to the Ontario Butterfly Atlas (McNaughton et al. 2020), 34 butterfly species are reported from the 10km x 10km square (17NJ95) that overlaps with the study area. Available records indicated that one butterfly SCC, Monarch (*Danaus plexippus*), is reported from the vicinity of the study area (McNaughton et al. 2020).

Targeted surveys were not completed for insects. However, two odonate species were observed incidentally: Twelve-spotted Skimmer (*Libellula pulchella*) and Autumn Meadowhawk (*Sympetrum vicinum*), both of which are common within Ontario. No butterflies were observed during any field surveys.

Appendix IX and Appendix X, respectively, provide full lists of all odonata and lepidoptera species with records from within the study area.

5.4 Aquatic Features

5.4.1 Salt Creek

Salt Creek is a perennial watercourse that originates to the northwest of the subject property and flows generally southeast through the southern extent of the subject property. The channel has a natural meander with evidence erosion as a result of high flows (such as bank

undercutting, areas barren of overburden, and steep banks). The watercourse is characterized by a low-moderate gradient with riffle, run and pool habitats throughout.

Substrates throughout Salt Creek were consistent, and characterized by sand, silt, gravel, cobble, and pebble. Low quantities of hardpan clay and exposed limestone bedrock were observed in areas where overburden had been stripped away. Finer sediments such as silt, muck, and detritus were present in low quantities, observed in areas of slower water velocity such as backwater or pool habitats, where deposition could occur. Coarse woody debris (CWD) was also present throughout various habitat types in the creek. In-stream aquatic vegetation consisted primarily of grasses in shallow, littoral areas of the creek, and Watercress (*Nasturtium officinale*) present in low abundances within the upper extent of the creek, and is a groundwater indicator species.

The floodplain ranged from 0—20m on either side of the creek and was characterized by meadow marsh habitat (MAM2-2). The extent of natural vegetation was characterized as Mineral Cultural Thicket (CUT1), dominated by a sub-canopy of deciduous shrubs, primarily Common Buckthorn, and understory of herbaceous plants and grasses extending up to 120m from the banks of the creek. Beyond this, the land use was characterized by low density residential dwellings and active agricultural lands.

The banks were moderately vegetated with aquatic emergent vegetation, terrestrial plants, and the root systems of deciduous trees and shrubs offering bank stability. The deciduous tree and shrub canopy provided moderate shading with moderate coverage (approx. 60%).

6.0 Significance of Natural Features

Based on available background information and the results of field surveys conducted by NRSI biologists, several significant natural features are present within the study area. The following provides an overview of these features.

6.1 Salt Creek

Salt Creek is a permanent watercourse mapped by the MNRF as a warmwater creek, originating to the north of the subject property near the town of Caledon. The creek flows generally southwest to the northern extent of the subject property, before flowing generally southeast to its confluence with the West Humber River in Brampton, ON. Salt Creek offers year-round, direct fish habitat for a variety of cool- to warm-water species. It is also regulated habitat for Redside Dace (discussed below).

Direct fish habitat is protected under the federal *Fisheries Act*, which prohibits the harmful alteration, disruption, and destruction (HADD) to fish and fish habitat. Fish habitat is also afforded protection under provincial and local legislation, including the *Planning Act* per the PPS (2020), the Region of Peel Official Plan (2022), and Town of Caledon Official Plan (2018). Salt Creek is also regulated by the TRCA according to Ontario Regulation 166/06 (Government of Ontario 1990). Under O. Reg 166/06, development or site alteration is prohibited within the watercourse and 15m from stable top of bank, unless subject to approval by the TRCA. This includes the straightening, changing, diversion, or interfering with any existing watercourse.

6.2 Wetlands

Wetlands are important for many reasons including collecting and storing surface water and groundwater and providing habitat for plants, wildlife, and fish. Wetlands operate on a water budget, where the hydrologic character of the wetland is determined by the combination of water inflow/outflow, topography, and groundwater conditions (Mitsch and Gosselink 1993). Wetlands receive water through precipitation, surface inflow, groundwater inflow, and lose water through evapotranspiration, surface and groundwater outflow.

Reed-Canary Grass Graminoid Mineral Meadow Marsh (MAM2-2) communities comprises the floodplain of Salt Creek and is present in small areas adjacent to the watercourse (Map 2). All wetland features within the subject property are regulated by the TRCA under O.Reg 166/06, and are identified as key natural heritage features and key hydrologic feature, coinciding with the Greenlands System within the Region of Peel Official Plan (2022), and considered a

Supportive Natural System, linked to the Environmental Protection Area associated with the Salt Creek corridor in the Town of Caledon Official Plan (2018). In accordance with the aforementioned policies, a 30m buffer from the wetland boundary is proposed.

6.3 Significant Wildlife Habitat

Based on the desktop analysis of background information and the results of the site investigations completed in 2022 and 2023, one SWH type has been identified within the study area: habitat for special concern and rare wildlife species. The full results of the SWH screening are provided in Appendix III.

Western Chorus Frog, a species of conservation concern, was documented calling during an anuran survey approximately 200m west of ANR-002 (Map 2). Western Chorus Frog are generally present within marshes and shallow, temporary, fishless wetlands. Based on the distance and observed direction of the calling Western Chorus Frog, it is anticipated that the frog was located within Reed Canary Grass Graminoid Mineral Marsh Meadow (MAM2-2) located in the northwest corner of the subject property. As such, this feature is considered confirmed SWH for Species of Special Concern and Rare Wildlife Species (Map 3).

6.4 Species at Risk Habitat

Redside Dace

Salt Creek has been mapped by the DFO and MNRF as Redside Dace Recovery Habitat, and is therefore subject to protection under the ESA and SARA. Recovery habitat is granted the same protections as occupied habitat. In accordance with the habitat regulation identified for Redside Dace, the ESA-protected recovery habitat comprises the meander belt width, as surveyed by GEO Morphix Ltd. (2023), plus an additional 30m from the edge of the meander belt (MNRF 2016) (Map 4). Development within the 30m buffer from the meander belt would require DFO approval under the SARA, and trigger the requirement for an Information Gathering Form (IGF) for submission to the MECP, followed by appropriate permit approvals.

Bobolink

Bobolink is listed as provincially and federally Threatened (MECP 2022, Government of Canada 2022) and is therefore protected under the ESA and SARA. Habitat generally consists of large (>10 ha), open expansive grasslands, pastures, hayfields, meadows or fallow fields with dense groundcover (McCracken et al. 2013). Habitats within the subject property consist of Mineral Cultural Thicket (CUT1), Reed-Canary Grass Graminoid Mineral Marsh Meadow (MAM2-2),

hedgerows, and active agricultural lands, and therefore does not support suitable habitat. The observation of a single singing male during the first breeding bird survey is therefore attributed to a male seeking territory rather than indicating the presence of breeding habitat.

Bats

Little Brown Myotis, Northern Myotis, Eastern Small-footed Myotis, and Tri-colored Bat are all listed as provincially and federally Endangered (MECP 2022, Government of Canada 2022); habitats for these species are protected under the ESA (2007). Suitable habitat for Little Brown Myotis and Northern Myotis may be present within the study area based on field investigations. Habitat requirements in Ontario vary by season and consist of overwintering habitat, summer habitats, and swarming habitats (EC 2018). Overwintering or swarming habitats are not present in the study area. Summer habitats for these species include roosting habitat for maternity colonies and day roosts, as well as foraging habitat (ECCC 2018).

A total of 13 candidate bat roost trees (RST-001 to RST-013) were identified within the subject property, offering candidate roost habitat for Northern Myotis (*Myotis septentrionalis*) and Little Brown Myotis (*Myotis lucifungus*) (Map 3). Based on the existing draft design (Map 4), only three candidate roost trees are within the proposed development limit, and are anticipated to be impacted as a result of vegetation clearing and construction. Given the large size of the cultural thicket within the study area, the removal of a very limited number of these trees, which is considered 'proportionally small', is not likely to require a permit under the ESA, so long as certain mitigation measures are implemented to minimize potential impacts. The most significant of these mitigation measures is that trees must be removed outside of the bat active period (i.e., outside of the April 1 – October 31 period).

6.5 Proposed Development Setbacks

Development setback (buffers) are typically required to protect the form and function of natural heritage features, such as woodlands, wetlands, SWH, and watercourses, from impacts due to developments. Within the subject lands, vegetation clearing, grading, and other construction activities have the potential to inadvertently destroy, damage, and degrade the edge of adjacent protected natural features unless the boundaries are clearly marked. For example, construction activities can cause scarring and decreased health of adjacent trees whose branches or root systems have been damaged by machinery or affected by construction-related dust and sedimentation. Damage to trees and other vegetation can also be caused by the compaction of soils within tree rooting zones along woodland edges. Buffers also increase protection of

wetland and watercourse form and function by decreasing the threat of erosion, contamination from runoff, and sedimentation.

Using background information and relevant policies, as well as data collected during the 2022 and 2023 field surveys, natural feature constraints within and adjacent to the subject lands were delineated, and recommended buffers were applied. As shown on Map 4, a 30m setback has been applied to the wetland boundaries adjacent to the proposed development. The 30m buffer from all wetlands are in accordance with TRCA regulations (O.Reg 166/06), Region of Peel Official Plan (2022), and Town of Caledon Official Plan (2018).

Due to the presence of Recovery Redside Dace Habitat, a 30m setback has been applied to the edge of meander belt width, as surveyed by GEO Morphix Ltd. (2023). The 30m buffer from the meander belt is consistent with the Ontario Redside Dace Recovery Strategy (MNRF 2010) and ESA (2007), and offers protection of the watercourse and adjacent riparian habitat. A minimum Vegetation Protection Zone (VPZ) of 30m is required from any fish habitat, as per the Town of Caledon OP (2018) and Region of Peel OP (2022). Since this feature is buffered 30m from the meander belt width in support of Redside Dace Recovery Habitat protection, Salt Creek will be adequately setback from development.

Based on the aforementioned environmental constraints, an area of 14.35 hectares is suitable for development with frontage to Airport Road, without impacts to the natural features present within the subject property (Map 4). This area lies to the east of the 30m meander belt buffer and associated wetland buffer to MAM2-2.

7.0 Impact Analysis and Recommendations

The subject property is proposed for re-development for industrial uses. The Agricultural (A1) zoning will require re-zoning to industrial to facilitate development. Re-zoning is subject to inclusion within the Region of Peel SABE, and therefore, no Official Plan or Zoning By-Law amendments are proposed at this time.

Two industrial buildings, including parking and servicing infrastructure, are proposed within the subject property (Map 4). Building 'A" will be situated in the northeast corner of the subject property and will consist of a 275,000 sq. ft. industrial building with additional parking located along the north and east side of the building, and loading docks along the southern side. Building 'B' is located in the southeastern corner of the subject property and will consist of a 375,000 sq. ft. industrial building with associated loading docks along the north side of the building, and associated parking along the east and south side of the building.

No details on stormwater management or servicing have been provided to date.

7.1 Approach to Impact Analysis

This preliminary impact assessment focuses on the footprint of the proposed undertaking and resulting landuses. The impact assessment will require updates that consider area grading, the strategy and approach to stormwater management, and details on how the development will be serviced.

Potential impacts arising from the proposed industrial development were determined by comparing the details of the available proposed undertaking with the characteristics of the existing natural features and their ecological function.

The draft Site Plan for the development is shown on Map 4. This plan shows the proposed buildings and limit of grading. The following is a description of the types of impacts that will be discussed in the impacts analysis:

- Based on the Site Plans, there will be direct impacts associated with vegetation removal and grading.
- Indirect impacts associated with the changes to site conditions will result from the proposed stormwater management, such as potential changes to drainage and water quantity/quality to Salt Creek.

- Induced impacts associated with impacts after development is constructed, such as an increased use of natural areas.

7.2 Direct Impacts

7.2.1 Tree and Vegetation Removal

Isolated tree and vegetation removal will be required to accommodate the footprint of the proposed buildings, parking areas and grading, etc. This includes areas of cultural thicket and hedgerows. These vegetation communities are not significant or sensitive and no significant species or habitats will be directly impacted by this removal. Tree removal should be undertaken between September 1 and March 31 to avoid impacts to migratory birds as discussed in Section 7.3.2. Tree removal should occur using best management practices and arboricultural techniques, protecting any trees that are to remain standing, including but not limited to tree driplines and root protection zones.

The majority of the trees within the area of proposed development are isolated hawthorns (*Crataegus spp.*) and elms (*Ulmus spp.*) in poor condition scattered throughout the cultural thicket and hedgerows. No tree species of significance have been identified. A Tree Protection Plan (TPP) will be required to support the Site Plan application for the property.

Heavy duty tree protection fencing should be erected along the limit of grading to clearly establish the boundary of vegetation removal and protect vegetation to be retained within the buffer areas. The TPP should identify mitigation strategies for any trees adjacent to the tree protection fencing to ensure any exposed roots or damaged limbs are addressed by a Certified Arborist.

7.2.2 Bird Nesting Habitat Removal

The *Migratory Birds Convention Act* (MBCA) protects migratory birds, their eggs, and their nests from being harmed or destroyed. According to the Canadian Wildlife Service (CWS), the general nesting period of migratory birds in Southern Ontario is between March 31 and August 31 (Environment Canada 2017). As a means of mitigation during the core breeding period, nest searches may be undertaken in “simple” habitats, such as isolated trees or hedgerows where the potential to observe all active nests is relatively high (CWS 2012). This mitigation method would apply to the planted trees around the residences. Given the complexity and inability to locate nests in larger areas of cultural thicket that is proposed to be removed, it is

recommended that vegetation clearing in these areas occur outside of the general nesting period.

7.2.3 Potential Bat Habitat Removal

Suitable bat roosting habitat was identified within a total of 13 trees within the subject property, three of which are located within the footprint of proposed development. Due to the limited number of these trees proposed for removal, this will not impact the integrity, quality or availability of potential roosting habitat for SAR bats. Vegetation and tree removal should mitigate against contravention of the ESA by completing vegetation clearing outside of the bat active period (i.e., outside of the April 1- October 31 period).

7.2.4 Potential Wetland and Buffer Removal

While these setbacks are maintained along the majority of the natural feature boundaries, a minimal amount of grading is proposed within the 30m wetland buffer along the northern edge of the subject property boundary. Encroachment into the wetland buffer must be granted approval by the TRCA under O.Reg 166/06, with or without conditions, and must demonstrate no result in the degradation of ecosystem integrity to the satisfaction of the Town of Caledon, MNRF, and Region of Peel (Town of Caledon 2018).

7.3 Indirect Impacts

Indirect impacts are identified as effects that are not a direct result of the proposed development footprint and are often produced in areas surrounding or adjacent to the development footprint or as a result of complex impact pathways. The following sections outline the potential sources of indirect impacts associated with the proposed development:

- Changes to water balance and surface water flow patterns;
- Changes to groundwater recharge and discharge;
- Changes to water quality;
- Erosion and sedimentation during construction; and,
- Indirect impacts to wildlife and vegetation communities.

7.3.1 Hydrology (Water Balance, Thermal Impacts, Surface Water Flow Patterns, Groundwater Discharge and Recharge, Water Quality)

The proposed development, including grading and installation of any stormwater management (SWM) infrastructure, has the potential to alter the existing hydrological conditions on the

subject property. The proposed development will replace much of the pervious and vegetated lands with impervious features such as buildings and parking lots. Reduced imperviousness of the subject property will result in increased overland flows and reduced infiltration to groundwater. The development must protect the overall existing drainage patterns within natural heritage features (watercourses and wetlands) and should minimize impervious areas.

Due to the proposed Settlement Area Boundary Expansion, and requirement for additional planning and block level functional servicing studies in advance of site-specific studies, further information on the proposed stormwater management will be required to assess the impacts to water balance and surface water flow patterns. The proponent is advised to retain a qualified professional to complete a functional servicing report and stormwater management report to inform changes to water balance and surface water flow patterns in accordance with any subwatershed studies produced. The functional servicing and stormwater management report will also inform potential impacts to groundwater recharge and discharge, and changes to water quality.

7.3.2 Erosion and Sedimentation during Construction

Erosion and sediment control measures will be required to be installed surrounding the proposed development in accordance with a Sediment and Erosion Control Plan. The following general recommendations with regards to erosion and sediment control should be included in this plan:

- All erosion control measures are to be inspected and monitored by a qualified individual, and repairs are to be completed as required.
- All materials and equipment used for the purpose of the site preparation and project completion should be operated and stored in a manner that prevents any materials from leaving the site. All stockpile areas should be identified on the final Site Plan and located more than 30m from any watercourses or wetlands.
- Placement of tree protection fencing and/or sediment control fencing along development limits prior to site preparation.
- Following completion of construction and site stabilization, all erosion and sediment control measures and accumulated sediment are to be removed.

7.3.3 Indirect Impacts to Wildlife and Vegetation Communities

Indirect disturbances can cause stresses on the natural features that weaken their ecological integrity. In these states, natural features are more prone to establishment and proliferation of invasive, non-native species. Proliferation of invasive, non-native species within natural

communities decreases their ecological value by suppressing native species, diminishing biodiversity, and reducing habitat suitability.

Designated areas for construction lay-down, vehicle access and parking, equipment storage, materials stockpiling, and any on-site construction offices should be located on the subject property in an area that avoids encroachment into the natural heritage features. The boundary of these areas should be clearly marked on the final Site Plan and be more than 30m from any watercourses or wetlands.

Increased disturbances caused by excessive noise, dust, vibrations, artificial night-time lighting, and proximity of human presence during construction may cause certain wildlife species to abandon or to avoid the area for travel, nesting, roosting, or foraging. However, these impacts are anticipated to be minimal, localized, and temporary, and is expected that displaced wildlife species will return to the vicinity of the subject property following construction.

Excessive noise caused by site preparation and construction activities may cause wildlife to temporarily avoid the area. These noise impacts can be mitigated by restricting the daily timing of construction to between 07:00 and 19:00. It is anticipated that construction will be limited to daytime hours.

Any lighting equipment associated with construction activities should be turned off following cessation of daily work, or at least turned away from the adjacent natural features to prevent 'light-wash' of these areas.

Impacts due to dust should be mitigated by moistening areas of bare, dry soil with water as needed during construction activities to reduce the amount of dust produced and deposited within the adjacent natural features.

Pending the nature of the industrial land-use, the impact analysis will reassess facility operation once additional details are available.

7.4 Induced Impacts

Induced impacts are described as those that are not directly related to the construction or operation of the facilities in question, but rather arise from the use of the natural areas as a result of the development. Given that the proposed development bordering natural features is

industrial, induced impacts from human interaction with natural areas is anticipated to be minimal.

Substantial impacts as a result of the industrial development are not anticipated. However, an increase in litter deposited into Salt Creek and the adjacent natural features is possible. It is recommended that the waste disposal site be contained. This will ensure that litter will not be blown or washed into the natural features, and will prevent any wildlife from becoming habituated to any potential food sources. The creek corridor should be fenced with signage that prohibits entry, and monitored for any garbage that has blown in or been dumped and should be cleaned up on a regular basis. Directional lighting should be employed in areas adjacent to the natural features associated with the Salt Creek corridor to avoid lightwash within the retained natural area.

8.0 Summary of Preliminary Recommendations

The following preliminary recommendations are provided to ensure that any potential impacts are minimized. Additional recommendations will be provided in the updated EIS and TPP once the details of the development are known.

- A Sediment and Erosion Control Plan should be developed by a qualified engineer.
- A Spill Response Plan should be prepared.
- A Tree Protection Plan should be prepared.
- All on-site construction equipment should adhere to the Clean Equipment Protocol for Industry (Halloran et al. 2013).
- A detailed water balance should be completed by a qualified consultant to ensure the approach to stormwater management results in no negative impacts to wetlands, Salt Creek, and it's associated wildlife habitat.
- The approach to stormwater management for the site should consider thermal impacts, changes to infiltration and surface water/groundwater flows, and maintaining and/or enhancing water quality within Salt Creek and its associated wetlands.
- Compensation for tree removal is recommended according to the Town of Caledon Development Standards Manual (2019) and Town of Caledon Terms of Reference for Arborist Reports, Tree Preservation Plans and Tableland Tree Removal Compensation (2020). A detailed Landscape Plan will be required at a later design stage, and should consider the Landscape Design Requirements in their entirety during its development. It is noted that, if there is not suitable space to plant the necessary compensation trees, a cash-in-lieu option is available, with rates to be determined by the Town of Caledon. Note that compensation plantings are in addition to any standard tree planting requirements for development.
- Trees to be planted as part of compensation should consist of native species suitable for the site conditions.
- No vegetation removal should occur during the breeding bird season (May 1 to July 31), where possible. If removals must occur during this time period nest surveys may be completed by a qualified biologist for 'simple' habitats and a clearance letter will be prepared for Canadian Wildlife Service. Additionally, tree removal should occur outside of the bat active period (April 1 – October 31).

9.0 Summary

NRSI was retained in April 2022 by Broccolini Real Estate to complete a Natural Heritage Overview (NHO) to identify potential constraints for proposed industrial development. Subsequently, Broccolini retained NRSI in July 2022 to complete an EIS in support of a proposed industrial development, to further characterize the natural features on-site and identify potential impacts as a result of development.

Located within the West Humber Subwatershed, the subject property contains and is adjacent to several natural heritage features, including: Salt Creek and several wetlands. This EIS summarizes the characterization of natural features within the subject property, and identifies constraints and recommendations for the proposed development. The Salt Creek corridor located in the southwestern half of the property boundary contains key natural heritage and hydrological features requiring protection, and is regulated by the TRCA. Therefore, buffers in accordance with the Region of Peel (2022), Town of Caledon (2018) Official Plans, and O.Reg 166/06 have been proposed, including a 30m buffer from adjacent wetland features (MAM2-2). Additionally, a 30m buffer is provided from the meander belt associated with Salt Creek as protection to Redside Dace Recovery Habitat, and a 30m in accordance with the Redside Dace Recovery Strategy (MRNF 2010) and ESA (2007).

Current design indicates that grading is to occur within the 30m wetland buffer, subject to approval by the TRCA, Town of Caledon, Region of Peel and MNRF. Additionally, any encroachment into the 30m recovery habitat buffer would require SARA permit approvals from the DFO, and trigger the requirement for an IGF submitted to the MECP followed by appropriate permitting. Additionally, indirect and induced impacts may result from the proposed development based on the approach to servicing and stormwater management which still require assessment. This report provides preliminary recommendations to minimize impacts and ensure that mitigative measures are installed and functioning properly. These include recommendations to mitigate direct, indirect, and induced impacts that may arise during and after the proposed development, as detailed in Section 7.0. Measures to avoid thermal impacts or salt impacts to Salt Creek should be investigated in development of the SWM plan. Significant impact to natural features is not anticipated if the mitigation, protection, and monitoring measures provided in this report are followed, should recommendations to adhere to keeping development, including grading, beyond the outer constraints limit.

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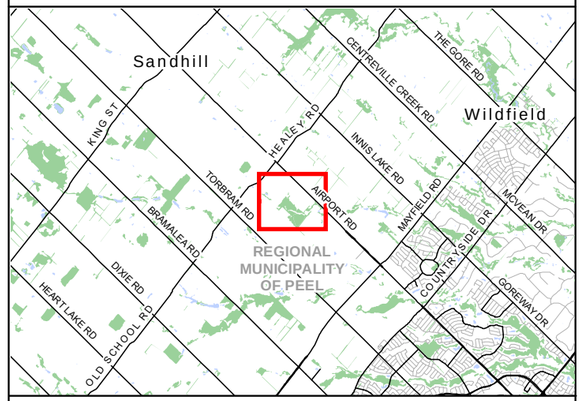
MAPS

Map 1

Airport Rd, Caledon **EIS**

Natural Heritage Background Review



Legend

- Study Area (120m)
- Subject Property
- Permanent Watercourse
- Fish Distribution
- Environmental Policy Area (Town of Caledon Official Plan, 2018)
- Toronto Region Conservation Authority (TRCA) Regulation Limit (O. Reg 166/06)

Core Areas of the Greenland System (Region of Peel Official Plan, 2014)

NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

Project: 2849
Date: April 20, 2022

NAD83 - UTM Zone 17
Size: 11x17"
1:4,500

0 60 120 180 240 300 Metres

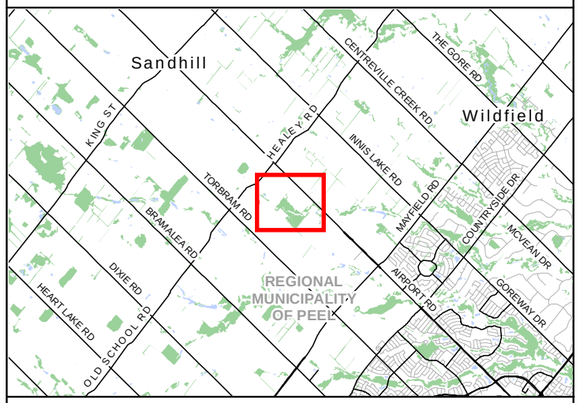
N

Path: X:\2849_AirportRdCaledonNHOverview\NRSI_2849_Map1_BackgroundReview_5K_2022_04_20_JX.mxd

Map 2

Airport Rd., Caledon EIS

Vegetation Communities and Monitoring Stations



Legend

- Study Area (120m)
- Subject Property
- Anuran Call Station (ANR)
- Breeding Bird Station (BMB)
- Permanent Watercourse
- Ecological Land Classification (ELC)

(Ag) Agriculture

(CUT1) Mineral Cultural Thicket Ecosite

(H) Hedgerow

(MAM2-2) Reed-canary Grass Mineral Meadow Marsh Type

NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

Project: 2849
Date: June 28, 2023

NAD83 - UTM Zone 17
Size: 11x17"
1:4,500

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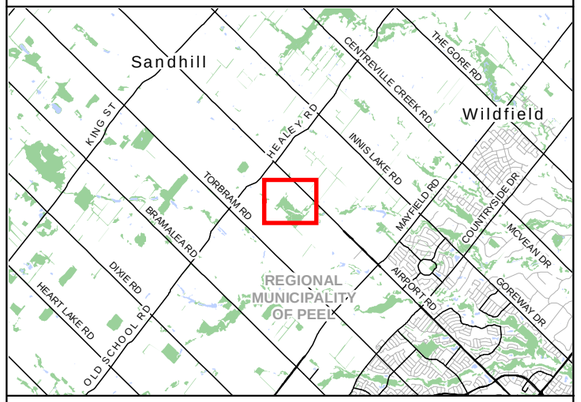
Map 3

Airport Rd., Caledon EIS

Significant Wildlife Habitat and Species at Risk Habitat



597500 597750 598000 598250

4851000

4850750

4850500

AIRPORT RD

MAM2-2

MAM2-2

Ag

RST-001

H

RST-003

RST-002

MAM2-2

RST-004

RST-006

RST-007

RST-011

CUT1

H

RST-010

RST-009

MAM2-2

RST-008

RST-012

RST-013

CUT1

Salt Creek

Legend

- Study Area
- Subject Property
- Candidate SAR Bat Habitat
- Permanent Watercourse
- Regulated SAR Recovery Habitat - Redside Dace (*Clinostomus elongatus*)
- Confirmed SWH: Special Concern and Rare Wildlife Species - Western Chorus Frog (*Pseudacris triseriata*)
- Ecological Land Classification (ELC)

(Ag)

(CUT1) Mineral Cultural Thicket

(H) Hedgerow

(MAM2-2) Reed-canary Grass Mineral Meadow Marsh

NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

Project: 2849A
Date: June 29, 2023

NAD83 - UTM Zone 17
Size: 11x17"
1:3,500

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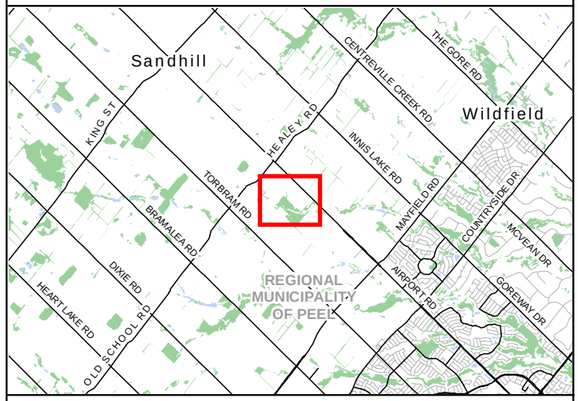
Path: X:\2849_AirportRdCaledonNHOverview\NRSI_2849_Map3_PotentialBatHabitat_5K_2023_06_29_JAS.mxd

Map 4

Airport Rd., Caledon EIS

Constraints Analysis



Legend

- Study Area (120m)
- Subject Property
- Site Plan
- Permanent Watercourse
- Meander Belt (GM BluePlan)
- Meander Belt Buffer (30m)
- Constraint Limit
- Developable Lands (14.35ha)
- Ecological Land Classification (ELC)

(Ag) Agriculture

(CUT1) Mineral Cultural Thicket Ecosite

(H) Hedgerow

(MAM2-2) Reed-canary Grass Mineral Meadow Marsh Type

NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

Project: 2849A
Date: July 6, 2023

NAD83 - UTM Zone 17
Size: 11x17"
1:4,000

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Appendix I
Draft Terms of Reference, Submitted September 2, 2022

NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

September 2, 2022 Project #2849A

Sally Drummond, Heritage Resource Officer
Town of Caledon
6311 Old Church Road
Caledon, ON – L7C 1J6

Irene Raralio, Planning Assistant
Region of Peel, Planning and Development Services
7120 Hurontario St.
Mississauga, ON – L5W 1N4

Andrea Terella, Planner
Toronto and Region Conservation Authority (TRCA)
101 Exchange Avenue
Vaughan, ON – L4K 5R6

CC: AJ Taylor, Broccolini Real Estate Group

Re: Airport Road, Caledon, Ontario – Industrial Development
Environmental Impact Study - Terms of Reference

On behalf of Broccolini Real Estate Group, we are pleased to provide the following Terms of Reference (TOR) to prepare an Environmental Impact Study (EIS) in support of a proposed industrial development. The development is proposed within a rectangular-shaped property south of Old School Road on Lot 21, Concession VI, Township of Caledon, Region of Peel (hereafter referred to as the "Subject Property") (Map 1). The property is located southwest of Airport Road between Old School Road and Mayfield Road in Caledon, Ontario.

The Subject Property is approximately 24.7 hectares in size and is characterized primarily by an annual row crop. The southern portion of the property is comprised of a cultural thicket (CUT) dominated by European Buckthorn (*Rhamnus cathartica*) which borders both the north and south sides of Salt Creek. Salt Creek is located within the West Humber Subwatershed, part of the greater Humber River watershed. The thicket contains occasional dead Ash (*Fraxinus sp.*), Poplar (*Populus sp.*), Elm (*Ulmus sp.*), and Tartarian Honeysuckle (*Lonicera tatarica*). Along the creek floodplain, areas of Reed Canary Grass Marsh (MAM) are present.

The stream corridor associated with Salt Creek is designated as an Environmental Policy Area (EPA) within the Town of Caledon Official Plan (2018) and within the

Greenland System of the Region of Peel Official Plan (2014). Similarly, the valley, floodplain and wetlands associated with Salt Creek, and the watercourse itself are regulated by the TRCA under O.Reg 166/06. Due to the presence of these features, an EIS is required for any site alteration or development proposed on the adjacent lands.

The TOR provides a comprehensive description of the proposed environmental surveys and reporting that will be completed to prepare the EIS. This work plan has been prepared in accordance with the requirements outlined in the Region of Peel Official Plan (2022), TRCA EIS Guidelines (2014), and the Provincial Policy Statement (PPS) (2020). The terms of reference outlines three stages to the work plan: 1) Background Information Review; 2) Natural Resource Characterization, and; 3) Environmental Impact Study Report and Tree Preservation Plan (TPP).

Phase 1. Background Information Review

Collection and Review of Background Information

Existing background information pertaining to the biological resources on and within up to 10km of the subject property has been collected and compiled to inform the scope of surveys outlined in this TOR. The information collected will inform the potential presence of the biological features present within the subject property, and the area within 120m of the subject property ('adjacent lands'; herein referred to as the 'Study Area'). Data had been collected and reviewed from the following sources:

- Government of Canada SARA Registry (2021),
- Natural Heritage Information Centre Make A Map (NDMNRF 2022),
- Toronto and Region Conservation Authority (TRCA) Regulation Mapping (TRCA 2020);
- Town of Caledon Official Plan (2018);
- Region of Peel Official Plan (2022);
- Growth Plan for the Greater Golden Horseshoe (Government of Ontario, 2020),
- Distribution and status of the vascular plants of the Greater Toronto Area (Varga 2000);
- Humber River Watershed Plan (TRCA 2008);
- Ontario Breeding Bird Atlas (BSC et al. 2006),
- Ontario Reptile and Amphibian Atlas (ORAA) (Ontario Nature 2019),
- Atlas of the Mammals of Ontario (Dobbyn 1994),
- Ontario Butterfly Atlas (MacNaughton et al. 2020), and
- Ontario Odonata Atlas Database (OOAD 2022).

Additionally, further information on Species at Risk (SAR) presence and natural heritage features will be requested from the Toronto and Region Conservation Authority (TRCA), Ministry of the Environment, Conservation, and Parks (MECP), and the Ministry of Northern Development, Mines, Natural Resources and Forestry (NDMNRF) Aurora District.

Species at Risk Screening

Initial wildlife species lists for the area were developed using these background sources and informed a screening exercise to determine the potential for Species at Risk (SAR) or Species of Conservation Concern (SCC) to occur within or adjacent to the Subject Property. A preliminary site visit conducted on April 15, 2022 provided more information to screen potentially suitable habitat for the species documented within the vicinity of the study area. The full results of the SAR/SCC screening exercise are included in Appendix I.

SAR are those listed on the Species at Risk in Ontario (SARO) list (NDMNRF 2021), and include species identified by the Committee on the Status of Species at Risk in Ontario (COSSARO) as provincially Endangered, Threatened, or Special Concern. Regulated SAR refer to species listed as Endangered or Threatened, due to the protection afforded to the species and their habitat under the *Endangered Species Act* (ESA) (Government of Ontario 2007).

SCC includes species that are:

- Designated provincially as Special Concern (NDMNRF 2021),
- Assigned a conservation status (S-Rank) of S1 to S3 or SH (i.e. critically imperiled, imperiled, vulnerable, or historical) (NDMNRF 2021),
- Designated federally as Threatened or Endangered by the Committee for the Status of Endangered Wildlife in Canada (COSEWIC) (Government of Canada 2021), but not provincially by the COSSARO. These species are protected by the federal Species at Risk Act (SARA) but not provincially by the ESA.

Significant Wildlife Habitat Screening

A Significant Wildlife Habitat (SWH) screening exercise was completed based on available background information to identify a preliminary list of candidate SWH types which may be present on the Subject Property, and will be assessed through the proposed field program. This review compared site conditions assessed during the Natural Heritage Overview with criteria set in the SWH Ecoregion 6E Criterion Schedule (MNRF 2015) to determine the presence of any candidate SWH. The full results of the SWH screening exercise are included in Appendix II. The results of the SWH screening will be refined through field investigations to characterize any habitats present within the subject property. Where surveys to confirm SWH habitat are not being completed (i.e. the candidate SWH is off-property, or outside the proposed development area), the SWH type will be considered candidate SWH in the EIS. All candidate and confirmed SWH will be carried forward into the EIS.

Phase 2. Natural Resource Characterization

Field Surveys

A two-season (spring and summer) field inventory was developed to include assessment of on-site and adjacent species and habitats. Inventories of wildlife and vegetation on the Subject Property and adjacent habitats will include the following specific surveys:

Vegetation Community Mapping

Vegetation communities including soils on-site were assessed at high level during a preliminary site visit in spring 2022. Further refinements will characterize and map the conditions on site in summer 2022 following the standardized Ecological Land Classification (ELC) system for southern Ontario (Lee et al. 1998). Details on the vegetation communities will be recorded including species composition, dominance, uncommon species or features

Wetland Delineation

NRSI staff trained in the Ontario Wetland Evaluation System will delineate the boundary of wetlands on site, including the boundaries of wetlands associated with the floodplain of Salt Creek. An on-site meeting will be arranged with staff of TRCA to review and confirm the wetland boundaries which will be surveyed and shown on subsequent plans.

Vascular Flora Survey

Vascular flora will be inventoried during the 2022/2023 summer vegetation mapping, and will be conducted within each ELC community. Any rare species identified and their locations will be recorded with a handheld GPS unit.

Breeding Bird Surveys

Two breeding bird surveys will be conducted during the peak breeding season (between May 24 and July 10) in accordance with OBBA methods (BSC et al. 2006). Ten-minute point counts and area surveys will be conducted within all habitat types within the Subject Property. NRSI biologists will also look specifically for evidence of nesting by significant bird species. Species will be documented by ELC vegetation community. Standard breeding evidence will be recorded during both early morning surveys. These surveys, along with habitat characterization, will allow for the identification of any SWH present within or adjacent to the Subject Property.

Turtle Nesting Habitat Assessment

A habitat assessment will be completed to determine whether there are suitable soils (sand and gravel) for turtle nesting within the subject property. Should soils suitable for turtles be present within the subject property, targeted nesting surveys will be conducted to determine whether nesting is occurring. Turtle nesting surveys will occur on 5 occasions during the nesting period, commencing early June, 2022.

Amphibian Call Surveys

Based on the initial field visit in spring of 2021 and the presence of wetlands within the subject property, anuran (calling amphibian) surveys will be included to document the presence of breeding amphibians.

Three anuran surveys (frog and toad) surveys will be conducted between April and June 2023 at select monitoring stations. Surveys will be conducted after dusk and will document all calling anuran species including a call code and estimated number of

individuals following methods outlined in the Marsh Monitoring Program (Bird Studies Canada 2009).

Bat Habitat Surveys

An inspection of trees and snags within the proposed development area will be undertaken during the leaf-off period to identify suitable maternity roosting habitat for Little Brown Myotis (*Myotis lucifugus*) and Northern Myotis (*Myotis septentrionalis*). If potentially suitable tree species are present, then one more bat habitat survey for Tri-colored Bat (*Perimyotis subflavus*) will be undertaken during the leaf-on period. Bat habitat assessments will follow the *Survey Protocol for Species at Risk Bats in Treed Habitats* (MNRF 2017). All standing live or dead trees ≥10 cm diameter at breast height (DBH) with cracks, crevices, hollows, cavities, and/or loose or naturally exfoliating bark will be documented. The following information will be collected for each identified suitable maternity roost tree:

- Species;
- DBH (m);
- Decay class (Watt & Caceres 1999);
- Canopy cover (%);
- Approximate tree height (m); and
- Roost tree attributes:
    - Number, type, and height of cavities;
    - Presence of loose bark; and
    - Evidence of use by predators or other species.

If potentially suitable cavities for bat maternity roosting habitat are observed within the development area, then the Ministry of Environment, Conservation and Parks (MECP) will be consulted to determine what additional surveys, if any, will be required.

Incidental Wildlife

In addition to the targeted surveys noted above, all wildlife species observations will be recorded during field surveys. This includes direct observations, as well as signs such as dens, tracks, scats, etc.

<u>Tree Inventory</u>

A Certified Arborist will complete an inventory of all trees ≥10cm diameter at breast height (DBH) on the subject property and adjacent areas with the potential to be impacted by the proposed development. Each tree will be inventoried and assessed by a Certified Arborist and/or Registered Professional Forester. Each tree within the subject property will be tagged with a pre-numbered aluminum forestry tag and the following information will be recorded for each individual assessed tree:

- Unique alpha-numeric identifier,
- Species,
- DBH (cm),
- Crown radius (metres),

- General health (excellent, good, fair, poor, very poor),
- Potential for structural failure (improbable, possible, probable, imminent),
- Potential for SAR bat habitat;
- Location,
- General comments (i.e. disease, aesthetic quality, development constraints, sensitivity to development),
- Management recommendations where appropriate (i.e. prune, relocate, remove, retain, etc.), and
- Rationale for any proposed action.

During the assessment of each individual tree, NRSI will record the location of the tree using a GPS unit capable of sub-meter mapping grade accuracy. A preliminary map of existing conditions and associated protections can be provided following the initial field work to inform the proposed plans. Trees of significance (i.e., off-site features, or other uncommon mature and/or large stature trees) will be considered for retention where feasible.

Phase 3. Environmental Impact Study Report and Provisional Tree Preservation Plan

Tree Preservation Plan (TPP)

NRSI will complete a TPP based on the proposed grading and final Site Plan. The location of each tree will be compared to the proposed plans to determine which trees can be retained, removed, or if feasible, relocated.

A map will be prepared identifying individual trees to be retained, removed or relocated, including their dripline, location, and placement of tree protection fencing. A TPP report will provide a summary of tree inventory results and recommendations for tree management, mitigation and compensation, as required.

Environmental Impact Study (EIS) Report

Natural Feature Constraints Assessment

The results of the field surveys will be combined with the background information to provide a detailed summary of the existing natural features. This will include detailed vegetation community descriptions and mapping and summaries of wildlife species present within the subject property and study area. Any significant or sensitive species, habitats or ecological features, including linkages and connectivity of habitats, will be identified and discussed in terms of constraints to development. This constraints analysis will be completed to guide and refine the location and layout of the proposed development on the subject property. Buffers and any development setbacks for significant and sensitive features will be recommended. The study will also include a linkage and connectivity assessment, to identify potential movement corridors for amphibians, reptiles, and mammals that should be maintained post-development, including at road crossings.

Impact Analysis, Mitigations, and Other Recommendations

The proposed development, including details related to the layout of lots, roads, servicing, stormwater management, grading and any other components of the development, will be reviewed and compared to the existing conditions within and adjacent to the Subject Property.

NRSI will work closely with the project team to develop a detailed layout for the proposed development that minimizes the impacts on significant and sensitive natural features in the subject property and adjacent lands. As per the Region of Peel Official Plan (2022), the EIS will demonstrate no negative impacts will occur as a result of development within the subject property. A buffer analysis will be included within the impact assessment.

The findings of the characterization and the impact analysis will be prepared in a written EIS report. The report will be formatted to be consistent with the TRCA and Region of Peel guidelines and will include appendices, such as species lists and figures including the location of the project area, existing natural environment conditions and proposed undertaking. The final EIS report will also include a comprehensive review of relevant natural heritage policies and how these apply to the proposed development including the Region of Peel Official Plan, Town of Caledon OP, A Place to Grow: Growth Plan for the Greater Golden, and relevant TRCA policies. The report will be submitted with Development Applications to the authorities for review.

Utilizing information from the background review and findings from other relevant original field studies, NRSI will discuss the following impacts as a result of the proposed development:

- Direct impacts associated with disruption or displacement caused by the actual proposed 'footprint' of the undertaking.
- Indirect impacts associated with changes in site conditions such as drainage and water quantity/quality.
- Induced impacts associated with impacts after the development is constructed such as subsequent demand on the resources created by habitation/use of the area and vicinity.

Each of these impact types will be considered during and after construction and are described further below:

Direct Impacts

The approach to identifying and delineating constraint areas, discussed above, will be used to avoid direct impacts from the development on important natural features. The delineation of natural features, with buffers will be provided to the study team to assist in determining the layout of the proposed development. Any overlaps will be identified and addressed.

Indirect Impacts

The approach to assessing the potential for indirect impacts will include an integrated analysis of proposed management of the natural features on the Subject Property in conjunction with neighbouring lands. For the purposes of identifying potential indirect impacts, the analysis will be divided into the following:

- Sediment and erosion

  This section will focus on examining potential impacts associated with stormwater management. Sediment control measures will be identified to protect natural habitats during development.

- Changes to groundwater and surface water flow patterns

  This section of the impact analysis will focus on the potential changes to the flow patterns and quantity of groundwater and surface water flows that currently supply the watercourses and wetlands in the Study Area. This analysis will be based on a water balance produced by hydrogeologists on the study team.

- Changes to groundwater and surface water quality

  This section of the impact analysis will focus on examining potential impacts associated with stormwater management, particularly water quality. Recommendations for a salt management plan will be provided.

- Indirect Impacts to Wildlife

  Indirect impacts to wildlife will focus on the construction phase of the project (e.g. dust, noise, vegetation removal, etc.).

Induced Impacts

Induced impacts are described as those that are not directly related to the construction or operation of the facilities in question, but rather arise as a result of the use of the natural areas as a result of the development. In this case, potential induced impacts could include increased use of natural areas by residents, the introduction of domestic wildlife to natural areas, unauthorized trail/pathway construction, etc.

Should you have any questions, please do not hesitate to contact the undersigned.

Sincerely,

Natural Resource Solutions Inc. (NRSI)

Sam Catry, B.A., F.W.T.
Aquatic Biologist

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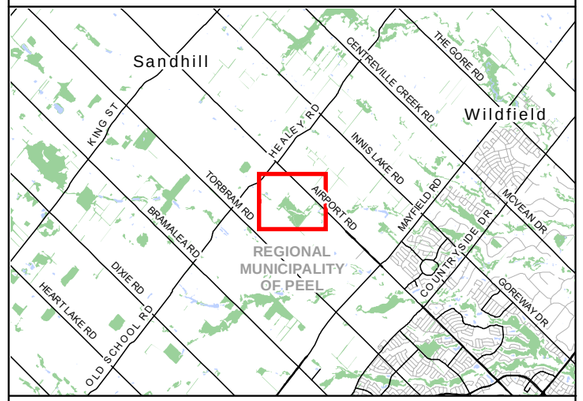
Map 1

Airport Rd, Caledon
Natural Heritage Overview
Background Review



Legend

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- Subject Property
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- Fish Distribution
- Environmental Policy Area (Town of Caledon Official Plan, 2018)
- Toronto Region Conservation Authority (TRCA) Regulation Limit (O. Reg 166/06)

Core Areas of the Greenland System
(Region of Peel Official Plan, 2014)

NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

Project: 2849
Date: April 20, 2022

NAD83 - UTM Zone 17
Size: 11x17"
1:4,500

0 60 120 180 240 300 Metres

N

Path: X:\2849_AirportRdCaledonNHOverview\NRSI_2849_Map1_BackgroundReview_5K_2022_04_20_JX.mxd

Appendix I
Species at Risk Screening Table

Scientific Name	Common Name	S-RANK[1]	SARO[1]	COSEWIC[2]	SARA[2]	SARA Schedule[2]	Habitat Requirements	Suitable Habitats within Subject Property	Carried Forward to EIS?	Rationale
Birds										
Ammodramus savannarum	Grasshopper Sparrow	S4B	SC	SC	SC	Schedule 1	Well-drained grassland or prairie with low cover of grasses, taller weeds or sandy soil; hayfields or weedy fallow fields; uplands with ground vegetation of various densities. Requires perches for singing and tracts of grassland generally >5ha.[3,4]	No	No	Open habitat consists of active agricultural fields. Suitable habitat is not present within subject property.
Chaetura pelagica	Chimney Swift	S3B	THR	T	T	Schedule 1	Commonly found in urban areas near buildings; nests in chimneys, hollow trees,and crevices of rock cliffs. Feeds over open water.[3,4]	No	No	Suitable nesting habitat is not available within the subject property.
Contopus virens	Eastern Wood-pewee	S4B	SC	SC	SC	Schedule 1	Mid-canopy layer of forest clearings and edges of deciduous and mixed forest. Abundant in intermediate-age mature forest stands with little understory vegetation.[3,4]	No	No	Corridor along Salt Creek is dominated by Buckthorn and does not provide suitable habitat.
Dolichonyx oryzivorus	Bobolink	S4B	THR	T	T	Schedule 1	Large (>10 ha), open expansive grasslands, pastures, hayfields, meadows or fallow fields with dense ground cover. Occassionally nest in large (>50 ha) fields of winter wheat and rye in southwestern Ontario. [3,4]	No	No	Open habitat consists of active agricultural fields. Suitable habitat is not present within subject property.
Hirundo rustica	Barn Swallow	S4B	THR	SC	T	Schedule 1	Farmlands, rural areas and other open or semi-open areas near body of water. Nests almost exclusively on human-made structures such as open barns, buildings, bridges and culverts.[3,4]	No	No	Suitable nesting habitat is not available within the subject property.
Hylocichla mustelina	Wood Thrush	S4B	SC	T	T	Schedule 1	Carolinian and Great Lakes-St. Lawrence forest zones. Undisturbed moist mature deciduous or mixed forest with deciduous sapling growth. Near pond or swamp. Must have some trees higher than 12 m.[3,4]	No	No	Corridor along Salt Creek is dominated by Buckthorn and does not provide suitable habitat.
Melanerpes erythrocephalus	Red-headed Woodpecker	S3	SC	E	E	Schedule 1	Open, deciduous forest with little understory; fields, parks or pasture lands with scattered large trees; wooded swamps; orchards, small woodlots or forest edges; groves of dead or dying trees. Requires cavity trees with at least 40 cm dbh.[3,4]	No	No	Corridor along Salt Creek is dominated by Buckthorn and does not provide suitable habitat.
Protonotaria citrea	Prothonotary Warbler	S1B	END	E	E	Schedule 1	Area sensitive species preferring large tracts of flooded or swampy woodlands with standing or flowing water and more than 25% canopy cover with numerous stumps and snags. Stream borders or flooded bottomlands. Requires soft, dead trees with dbh >10 cm. Carolinian species.[3,4]	No	No	Corridor along Salt Creek is dominated by Buckthorn and does not provide suitable habitat.
Riparia riparia	Bank Swallow	S4B	THR	T	T	Schedule 1	Nests in burrows in natural and human-made settings with vertical faces in silt and sand deposits. Ususally on banks of river and lakes, but also found in sand and gravel pits.[3,4]	No	No	Suitable nesting habitat is not available within the subject property.
Sturnella magna	Eastern Meadowlark	S4B, S3N	THR	T	T	Schedule 1	Open pastures, hayfields, grasslands or grassy meadows with elevated singing perches (small trees, shrubs or fence posts). Also weedy borders of croplands, roadsides, orchards, airports, shrubby overgrown fields or other open areas. Generally prefers larger tracts of habitat >10 ha, but will sometimes use smaller tracts.[3,4]	No	No	Open habitat consists of active agricultural fields. Suitable habitat is not present within subject property.

Scientific Name	Common Name	S-RANK[1]	SARO[1]	COSEWIC[2]	SARA[2]	SARA Schedule[2]	Habitat Requirements	Suitable Habitats within Subject Property	Carried Forward to EIS?	Rationale
Vermivora chrysoptera	Golden-winged Warbler	S3B	SC	T	T	Schedule 1	Areas with young shrubs surrounded by mature forest, including locations that have recently been disturbed, such as abandoned fields, field edges, hydo or utility right-of-ways, or logged areas with saplings and grasses.[3,4]	No	No	Corridor along Salt Creek is dominated by Buckthorn and does not provide suitable habitat.
Herpetofauna										
Turtles										
Chelydra serpentina	Snapping Turtle	S4	SC	SC	SC	Schedule 1	Slow-flowing rivers and streams, lakes, and permanent or semi-permanent wetlands with soft substrates and vegetation. Key habitat requirements: open areas with structures for basking, open sand or gravel areas for nesting, shallow areas with soft substrates to bury in, soft banks or substrates for hibernation.[3]	Possible	Yes	Suitable foraging habitat may be provided within Salt Creek and the associated floodplain. Salt Creek offers a corridor for movement. No suitable overwintering habitat has been identified within the subject property.
Mammals										
Microtus pinetorum	Woodland Vole	S3?	SC	SC	SC	Schedule 1	Mature deciduous forest in the Carolinian region where there is a deep litter layer that allows it to burrow.[3,4]	No	No	Suitable habitat is not present within subject property.
Myotis leibii	Eastern Small-footed Myotis	S2S3	END				Roosts in caves, mine shafts, crevices or buildings that are in or near woodland. Hibernates in cold dry caves or mines. Maternity colonies in caves or buildings. Hunts in forests.[3,4]	No	No	Suitable roosting and maternity colony habitat is not present wtihin the study area.
Myotis lucifungus	Little Brown Myotis	S3	END	E	E	Schedule 1	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 and forest edges.[3,4]	Possible	Yes	Various standing dead trees are present within the Buckthorn Thicket, which may offer suitable roosting habitat.
Myotis septentrionalis	Northern Myotis	S3	END	E	E	Schedule 1	Roosts in houses and man-made structures but prefers hollow trees or under loose bark. Hibernates in mines or caves. Hunts within forest, below the canopy.[3,4]	Possible	Yes	Various standing dead trees are present within the Buckthorn Thicket, which may offer suitable roosting habitat.
Perimyotis subflavus	Tri-colored Bat	S3?	END	E	E	Schedule 1	Roosts and maternity colonies in older forests and occassionally in barns or other sturctures. Forage over water and along streams in the forest. Hibernate in caves.[3,4]	No	No	Woodland is comprised primarily of Buckthorn, and does not provide older forest habitat necessary.
Taxidea taxus jacksoni	American Badger (Southwestern Ontario population)	S2	END	E	E	Schedule 1	Open grasslands, oak savannahs, sand barrens and farmland.[3,4]	No	No	Suitable habitat is not present within the study area.
Butterflies										
Danaus plexippus	Monarch	S2N, S4B	SC	END	SC	Schedule 1	Adults found in a diversity of habitats with a variety of wildflowers. Caterpillars are confined to meadows and open areas where milkweeds grow (larval food plants).[3]	No	No	Suitable habitat does not exist within the subject property.
Fish										

Scientific Name	Common Name	S-RANK[1]	SARO[1]	COSEWIC[2]	SARA[2]	SARA Schedule[2]	Habitat Requirements	Suitable Habitats within Subject Property	Carried Forward to EIS?	Rationale
Clinostomus elongatus	Redside Dace	S1	END	E	E	Schedule 1	Pools and slow-moving areas of small streams and headwaters with a gravel bottom. Generally found in areas with overhanging grasses and shrubs. Can be found in shallow parts of streams during spawning.[3]	Recovery Habitat identified as present	Yes	Salt Creek has been identified as providing recovery habitat by the DFO. Suitable habitat may exist within the subject property, and the creek is regualted under the ESA as recovery habitat.

Appendix II
Significant Wildlife Habitat Screening Table

Significant Wildlife Habitat Assessment: Ecoregion 6E.

Table 1. Characteristics of Seasonal Concentration Areas

Rationale	Wildlife Species	Candidate SWH		Confirmed SWH	Study Area
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	Assessment Details
Waterfowl Stopover and Staging Areas (Terrestrial)					
Habitat important to migrating waterfowl.	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.	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 unless they have spring sheet water available[exlviii]. <u>Information Sources</u> • Anecdotal information from the landowner, adjacent landowners or local naturalist clubs may be good information in determining occurrence. • Reports and other information available from Conservation Authorities (CAs) • Sites documented through waterfowl planning processes (eg. EHJV implementation plan) • Field Naturalist Clubs • Ducks Unlimited Canada • Natural Heritage Information Centre (NHIC) Waterfowl Concentration Area	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"[ccxi] • Any mixed species aggregations of 100 or more individuals required. • The area of the flooded field ecosite habitat plus a 100-300m radius buffer dependent on local site conditions and adjacent land use is the significant wildlife habitat[cxlviii]. • 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). • SWHMiST[cxlix] Index #7 provides development effects and mitigation measures.	Agricultural fields exists within the subject property and contains limited standing water, but is not of adequate size to support stopover and staging. **Not SWH.**
Waterfowl Stopover and Staging Areas (Aquatic)					
Important for local and migrant waterfowl populations during the spring or fall migration or both periods combined. Sites identified are usually only one of a few in the eco-district.	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	MAS1 MAS2 MAS3 SAS1 SAM1 SAF1 SWD1 SWD2 SWD3 SWD4 SWD5 SWD6 SWD7	• 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).	Studies carried out and verified presence of: • Aggregations of 100[f] or more of listed species for 7 days[f], results in > 700 waterfowl use days. • Areas with annual staging of ruddy ducks, canvasbacks, and redheads are SWH[cxlix] • The combined area of the ELC ecosites and a 100m radius area is the SWH[cxlviii] • Wetland area and shorelines associated with sites identified within the SWHTG[cxlviii] Appendix	Suitable aquatic habitats do not exist within the subject property. **Not SWH.**

Significant Wildlife Habitat Assessment: Ecoregion 6E.

Table 1. Characteristics of Seasonal Concentration Areas

Rationale	Wildlife Species	Candidate SWH		Confirmed SWH	Study Area
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	Assessment Details
	Long-tailed Duck Surf Scoter White-winged Scoter Black Scoter Ring-necked Duck Common Goldeneye Bufflehead Redhead Ruddy Duck Red-breasted Merganser Brant Canvasback		Information Sources • Environment Canada • Naturalist clubs often are aware of staging/stopover areas. • OMNRF Wetland Evaluations indicate presence of locally and regionally significant waterfowl staging. • Sites documented through waterfowl planning processes (eg. EHJV implementation plan) • Ducks Unlimited projects • Element occurrence specification by Nature Serve: http://www.natureserve.org • Natural Heritage Information Centre (NHIC) Waterfowl Concentration Area	K[cxlix] are significant wildlife habitat. • Evaluation methods to follow "Bird and Bird Habitats: Guidelines for Wind Power Projects"[ccxi] • 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). • SWHMiST[cxlix] Index #7 provides development effects and mitigation measures.	
Shorebird Migratory Stopover Area					
High quality shorebird stopover habitat is extremely rare and typically has a long history of use.	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 Whimbrel	BBO1 BBO2 BBS1 BBS2 BBT1 BBT2 SDO1 SDS2 SDT1 MAM1 MAM2 MAM3 MAM4 MAM5	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. Sewage treatment ponds and storm water ponds do not qualify as a SWH. Information Sources • Western hemisphere shorebird reserve network. • Canadian Wildlife Service (CWS) Ontario Shorebird Survey. • Bird Studies Canada • Ontario Nature • Local birders and naturalist clubs • Natural Heritage Information Center (NHIC) Shorebird Migratory Concentration Area	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 (<24hrs) 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 shoreline ecosites plus a 100m radius area[cxlviii] • Evaluation methods to follow "Bird and Bird Habitats: Guidelines for Wind Power Projects"[ccxi] • SWHMiST[cxlix] Index #8 provides development effects and mitigation measures.	Suitable shoreline habitat does not exist within the subject property. **Not SWH.**

Significant Wildlife Habitat Assessment: Ecoregion 6E.

Table 1. Characteristics of Seasonal Concentration Areas

Rationale	Wildlife Species	Candidate SWH		Confirmed SWH	Study Area
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	Assessment Details
Raptor Wintering Area					
Sites used by multiple species, a high number of individuals and used annually are most significant	Rough-legged Hawk Red-tailed Hawk Northern Harrier American Kestrel Snowy Owl <u>Special Concern:</u> Short-eared Owl Bald Eagle	Hawks/Owls: 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	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[cxlviii, cxlix] with a combination of forest and upland.[xvi, xvii, xviii, xix, xx, xxi]. Least disturbed sites, idle/fallow or lightly grazed field/meadow (>15ha) with adjacent woodlands[cxlix] Field area of the habitat is to be wind swept with limited snow depth or accumulation. Eagle sites have open water, large trees and snags available for roosting <u>Information Sources</u> • OMNRF Ecologist or Biologist • Field Natural Clubs • Natural Heritage Information Center (NHIC) Raptor Winter Concentration Area • Data from Bird Studies Canada • Reports and other information available from Conservation Authorities CAs.	Studies confirm the use of these habitats by: • One or more Short-eared Owls or; One or more Bald Eagles or; At least 10 individuals and two listed hawk/owl species • To be significant a site must be used regularly (3 in 5 years)[cxlix] for a minimum of 20 days by the above number of birds • The habitat area for an Eagle winter site is the shoreline forest ecosites directly adjacent to the prime hunting area • Evaluation methods to follow "Bird and Bird Habitats: Guidelines for Wind Power Projects"[ccxi] • SWHMiST[cxlix] Index #10 and #11 provides development effects and mitigation measures.	Suitable habitat does not exist within the subject property. Site is characterized by dense Buckthorn and agricultural fields with limited floodplain habitat. **Not SWH.**
Bat Hibernacula					
Bat hibernacula are rare habitats in Ontario landscapes.	Big Brown Bat Tri-coloured Bat	Bat Hibernacula may be found in these ecosites: CCR1 CCR2 CCA1 CCA2 (Note: buildings are not considered to be SWH)	• Hibernacula may be found in caves, mine shafts, underground foundations and Karsts. • Active mine sites should not be considered as SWH • The locations of bat hibernacula are relatively poorly known. <u>Information Sources</u> • OMNRF for possible locations and contact for local experts • Natural Heritage Information	• All sites with confirmed hibernating bats are SWH. • The habitat area includes a 200m radius around the entrance of the hibernaculum[cxlviii, ccvii] for most. • Studies are to be conducted during the peak swarming period (Aug. – Sept.). Surveys should be conducted following methods outlined in the "Bats and Bat Habitats: Guidelines for Wind	Suitable hibernacula sites are not present within the subject property. **Not SWH.**

Significant Wildlife Habitat Assessment: Ecoregion 6E.

Table 1. Characteristics of Seasonal Concentration Areas

Rationale	Wildlife Species	Candidate SWH		Confirmed SWH	Study Area
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	Assessment Details
			Center (NHIC) Bat Hibernaculum • Ministry of Northern Development and Mines for location of mine shafts. • Clubs that explore caves (eg. Sierra Club) • University Biology Departments with bat experts.	Power Projects"[ccv] • SWHMiST[cxlix] Index #1 provides development effects and mitigation measures.	
Bat Maternity Colonies					
Known locations of forested bat maternity colonies is extremely rare in all Ontario landscapes.	Big Brown Bat Silver-haired Bat	Maternity colonies considered SWH are found in forested Ecosites. All ELC Ecosites in ELC Community Series: FOD FOM SWD SWM	Maternity colonies can be found in tree cavities, vegetation and often in buildings[xxii, xxv, xxvi, xxvii, xxxi] (buildings are not considered to be SWH). • Maternity roosts are not found in caves and mines in Ontario[xxii] • Maternity colonies located in Mature deciduous or mixed forest stands[ccix, ccx] with >10/ha large diameter (>25cm dbh) wildlife trees[ccvii] • Female Bats prefer wildlife tree (snags) in early stages of decay, class 1-3[ccxiv] or class 1 or 2[ccxii] • 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[ccx] <u>Information Sources</u> • OMNRF for possible locations and contact for local experts • University Biology Departments with bat experts.	• Maternity Colonies with confirmed use by: • >10 Big Brown Bats • >5 Adult Female Silver-haired Bats • The area of the habitat includes the entire woodland or a forest stand ELC Ecosite or an Ecoelement containing the maternity colonies. • Evaluation methods for maternity colonies should be conducted following methods outlined in the "Bats and Bat Habitats: Guidelines for wind Power Projects[ccv] • SWHMiS T[cxlix] Index #12 provides development effects and mitigation measures.	Though subject property contains deciduous trees in various states of decay, the habitat is dominated highly by Buckthorn and does not provide suitable habitat or density for maternity colonies. **Not SWH.**
Turtle Wintering Area					
Generally sites are the only known sites in the area. Sites with the highest number of individuals are most significant	Midland Painted Turtle <u>Special Concern</u>: 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	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[cix, cx, cxi, cxviii].	• Presence of 5 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	Suitable overwintering habitat is not present within the subject property. **Not SWH.**

Significant Wildlife Habitat Assessment: Ecoregion 6E.

Table 1. Characteristics of Seasonal Concentration Areas

Rationale	Wildlife Species	Candidate SWH		Confirmed SWH	Study Area
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	Assessment Details
		with current can also be used as over-wintering habitat.	• Man-made ponds such as sewage lagoons or storm water ponds should not be considered SWH. Information Sources • EIS studies carried out by Conservation Authorities. • Local field naturalists and experts, as well as university herpetologists may also know where to find some of these sites. • OMNRF ecologist or biologist • Natural Heritage Information Center (NHIC)	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 (Sept. – Oct.) or spring (Mar. – May)[cvii] • Congregation of turtles is more common where wintering areas are limited and therefore significant[cix, cx, cxi, cxii]. • SWHMiST[cxlix] Index #28 provides development effects and mitigation measures for turtle wintering habitat.	
Reptile Hibernaculum					
Generally sites are the only known sites in the area. Sites with the highest number of individuals are most significant	Snakes: Eastern Gartersnake Northern Watersnake Northern Red-bellied Snake Northern Brownsnake Smooth Green Snake Northern Ring-necked Snake Special Concern: Milksnake Eastern Ribbonsnake Lizard: Special Concern (Southern Shield population): Five-lined Skink	For all snakes, habitat may be found in any ecosite 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. For Five-lined Skink, ELC Community Series of FOD and FOM and Ecosites: FOC1 FOC3	• For snakes, hibernation takes place in sites located below frost lines in burrows, rock crevices and other natural locations. The existence of features that go below the frost line; such as rock piles or slopes, old stone fences, and abandoned crumbling foundations assist in identifying candidate SWH. • Areas of broken and fissured rock are particularly valuable since they provide access to subterranean sites below the frost line[xliv, l, li, lii, cxii.] • 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 cciii. Information Sources	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 (eg. 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 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 [i.e. strong hibernation site fidelity]. Other critical life processes (e.g. mating) often take place in close proximity to hibernacula. The feature in which the hibernacula	No suitable habitat exists for snake hibernaculum within the subject property. **Not SWH.**

Table 1. Characteristics of Seasonal Concentration Areas

Rationale	Wildlife Species	Candidate SWH		Confirmed SWH	Study Area
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	Assessment Details
			• In spring, local residents or landowners may have observed the emergence of snakes on their property (e.g. old dug wells). • Reports and other information from CAs. • Local Field naturalists and experts, as well as university herpetologists may also know where to find some of these sites. clubs • Natural Heritage Information Center (NHIC) • OMNRF ecologist or biologist may be aware of locations of wintering skinks	is located plus a 30m buffer is the SWH[i] • SWHMiST[cxlix] Index #13 provides development effects and mitigation measures for snake hibernacula. • Presence of any active hibernaculum for skink is significant. • SWHMiST[cxlix] Index #37 provides development effects and mitigation measures for five-lined skink wintering habitat.	
Colonially - Nesting Bird Breeding Habitat (Bank and Cliff)					
Historical use and number of nests in a colony make this habitat significant. An identified colony can be very important to local populations. All swallow populations are declining in Ontario.	Cliff Swallow Northern Rough-winged Swallow (this species is not colonial but can be found in Cliff Swallow colonies)	Eroding banks, sandy hills, borrow pits, steep slopes, and sand piles Cliff faces, bridge abutments, silos, barns Habitat found in the following ecosites: CUM1 CUT1 CUS1 BLO1 BLS1 BLT1 CLO1 CLS1 CLT1	• Any site or areas with exposed soil banks, undisturbed or naturally eroding that is not a licensed/permitted aggregate area. • Does not include man-made structures (bridges or buildings) or recently (2 years) disturbed soil areas, such as berms, embankments, soil or aggregate stockpiles. • Does not include a licensed/permitted Mineral Aggregate Operation. <u>Information Sources</u> • Reports and other information available from CAs • Ontario Breeding Bird Atlas [ccv] • Bird Studies Canada; *NatureCounts* http://www.birdscanada.org/birdmon/ • Field Naturalist clubs	Studies confirming: • Presence of 1 or more nesting sites with 8[cxlvix] or more cliff swallow pairs and/or rough-winged swallow pairs during the breeding season. • A colony identified as SWH will include a 50m radius habitat area from the peripheral nests[ccvii] • Field surveys to observe and count swallow nests are to be completed during the breeding season Evaluation methods to follow "Bird and Bird Habitats: Guidelines for Wind Power Projects"[ccxi] • SWHMiST[cxlix] Index #4 provides development effects and mitigation measures	Suitable nesting habitat is not present within the subject property. **Not SWH.**
Colonially - Nesting Bird Breeding Habitat (Tree/Shrubs)					
Large Colonies are important to local bird population, typically sites are only known colony	Great Blue Heron Black-crowned Night-heron Great Egret Green Heron	SWM2 SWM3 SWM5 SWM6 SWD1 SWD2 SWD3 SWD4 SWD5 SWD6 SWD7 FET1	• 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 15m	Studies confirming: • Presence of 5[i] or more active nests of Great Blue Heron or other listed species. • The habitat extends from the edge of the colony and a	Suitable nesting habitat is not present within the subject property. **Not SWH.**

Significant Wildlife Habitat Assessment: Ecoregion 6E.

Table 1. Characteristics of Seasonal Concentration Areas

Rationale	Wildlife Species	Candidate SWH		Confirmed SWH	Study Area
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	Assessment Details
in area and are used annually.			from ground, near the top of the tree. Information Sources • Ontario Breeding Bird Atlas[ccv], colonial nest records. • Ontario Heronry Inventory 1991 available from Bird Studies Canada or NHIC (OMNR). • NHIC Mixed Wader Nesting Colony • Aerial photographs can help identify large heronries • Reports and other information available from CAs • MNRF District Offices • Local naturalist clubs	minimum 300m radius or extent of the Forest Ecosite containing the colony or any island <15.0ha with a colony is the SWH [cc, ccvii] • Confirmation of active heronries are to be achieved through site visits conducted during the nesting season (April to August) or by evidence such as the presence of fresh guano, dead young and/or eggshells • SWHMiST[cxlix] Index #5 provides development effects and mitigation measures.	
Colonially - Nesting Bird Breeding Habitat (Ground)					
Colonies are important to local bird populations, typically sites are only known colony in area and are used annually.	Herring Gull Great Black-backed Gull Little Gull Ring-billed 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	• Nesting colonies of gulls and terns are on islands or peninsulas associated with open water or in marshy areas. • Brewers Blackbird colonies are found loosely on the ground in or in low bushes in close proximity to streams and irrigation ditches within farmlands. Information Sources • Ontario Breeding Bird Atlas[ccv], rare/colonial species records. • Canadian Wildlife Service • Reports and other information available from CAs • Natural Heritage Information Center (NHIC) Colonial Waterbird Nesting Area • MNRF District Offices • Field naturalist clubs	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[i]. • 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[cc, ccvii] • Studies would be done during May/June when actively nesting. Evaluation methods to follow "Bird and Bird Habitats: Guidelines for Wind Power Projects"[ccxi] • SWHMiST[cxlix] Index #6 provides development effects and mitigation measures.	Suitable nesting habitat is not present within the subject property. **Not SWH.**

Significant Wildlife Habitat Assessment: Ecoregion 6E.

Table 1. Characteristics of Seasonal Concentration Areas

Rationale	Wildlife Species	Candidate SWH		Confirmed SWH	Study Area
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	Assessment Details
Migratory Butterfly Stopover Areas					
Butterfly stopovers areas are extremely rare habitats and are biologically important for butterfly species that migrate south for the winter.	Painted Lady Red Admiral <u>Special Concern</u>: Monarch	Combination of ELC Community Series: Need to have present one Community Series from each landclass: <u>Field</u>: CUM CUS CUT <u>Forest</u>: FOC FOM FOD CUP Anecdotally, a candidate sight for butterfly stopover will have a history of butterflies being observed.	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[cxlix]. • 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[xxxii, xxxiii, xxxiv, xxxv, xxxvi.] • 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 cxlviii, cxlix. • 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[xxxvii, xxxviii, xxxix, xl, xli.] <u>Information Sources</u> • OMNRF (NHIC) • Agriculture Canada in Ottawa may have list of butterfly experts. • Field Naturalist Clubs • Toronto Entomologists Association • Conservation Authorities	Studies confirm: • The presence of Monarch Use Days (MUD) during fall migration (Aug/Oct)[xliii]. 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[xxxvii], significant variation can occur between years and multiple years of sampling should occur [xl, xlii]. • Observational studies are to be completed and need to be done frequently during the migration period to estimate MUD • MUD of >5000 or >3000 with the presence of Painted Ladies or Red Admiral's is to be considered significant. • SWHMiST[cxlix] Index #16 provides development effects and mitigation measures.	Subject property is not located within 5km of Lake Ontario. **Not SWH.**
Landbird Migratory Stopover Areas					
Sites with a high diversity of species as well as high number are most significant	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.	All Ecosites associated with these ELC Community Series: FOC FOM FOD SWC SWM SWD	Woodlots need to be >10 ha[i] in size and within 5km [iv, v, vi, vii, viii, ix, x, xi, xii, xiii, xiv, xv] of Lake Ontario. • If multiple woodlands are located along the shoreline, those woodlands <2km from Lake Ontario are more significant[cxlix] • Sites have a variety of habitats; forest, grassland and wetland complexes[cxlix]. • The largest sites are more significant[cxlix] • Woodlots and forest fragments are important habitats to migrating birds[ccxviii], these features located	Studies confirm: • 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:	Subject property is not located within 5km of Lake Ontario. **Not SWH.**

Significant Wildlife Habitat Assessment: Ecoregion 6E.

Table 1. Characteristics of Seasonal Concentration Areas

Rationale	Wildlife Species	Candidate SWH		Confirmed SWH	Study Area
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	Assessment Details
	Schedule 7: Specially Protected Birds (Raptors)		along the shore and located within 5km of Lake Ontario are Candidate SWH[cxlviii]. Information Sources • Bird Studies Canada • Ontario Nature • Local birders and naturalist club • Ontario Important Bird Areas (IBA) Program	Guidelines for Wind Power Projects"[ccxi] • SWHMiST[cxlix] Index #9 provides development effects and mitigation measures.	
Deer Yarding Areas					
Winter habitat for deer is considered to be the main factor for northern deer populations. In winter, deer congregate in "yards" to survive severe winter conditions. Deer yards typically have a long history of annual use by deer, yards typically represent 10-15% of an areas summer range.	White-tailed Deer	Note: OMNRF 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	• Deer yarding 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 20cm, most of the deer will have moved here. If the snow is light and fluffy, deer may continue to use this area until 30cm 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 the Stratum II area 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%[cxciv]. • OMNRF determines deer yards following methods outlined in "Selected Wildlife and Habitat Features: Inventory Manual"[cxcv] • Woodlots with high densities of	No Studies Required: • Snow depth and temperature are the greatest influence on deer use of winter yards. Snow depths > 40cm for more than 60 days in a typically winter are minimum criteria for a deer yard to be considered as SWH[lvi, lvii, lviii, lix, lx, i]. • Deer Yards are mapped by OMNRF District offices. Locations of Core or Stratum 1 and Stratum 2 Deer yards considered significant by OMNRF will be available at local MNRF offices or via Land Information Ontario (LIO). • 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. MNRF will complete these field investigations[cxcv]. • If a SWH is determined for Deer Wintering Area or if a proposed development is within Stratum II yarding area then Movement Corridors are to be considered as outlined in Table 1.4.1 of this Schedule. • SWHMiST[cxlix] Index #2	Suitable deer yarding habitat is not present within the subject property. **Not SWH.**

Significant Wildlife Habitat Assessment: Ecoregion 6E.

Table 1. Characteristics of Seasonal Concentration Areas

Rationale	Wildlife Species	Candidate SWH		Confirmed SWH	Study Area
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	Assessment Details
			deer due to artificial feeding are not significant.	provides development effects and mitigation measures.	
Deer Winter Congregation Areas					
Deer movement during winter in the southern areas of Ecoregion 6E are not constrained by snow depth, however deer will annually congregate in large numbers in suitable woodlands to reduce or avoid the impacts of winter conditions[exlviii]	White-tailed Deer	All Forested Ecosites with these ELC Community Series: FOC FOM FOD SWC SWM SWD Conifer plantations much smaller than 50ha may also be used.	• Woodlots will typically be >100 ha in size. Woodlots <100ha may be considered as significant based on MNRF studies or assessment. • 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[cxlviii]. • 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[ccxxiv]. • Woodlots with high densities of deer due to artificial feeding are not significant. <u>Information Sources</u> • MNRF District Offices • LIO/NRVIS	Studies confirm: • Deer management is an MNRF responsibility, deer winter congregation areas considered significant will be mapped by MNRF[cxlviii]. • Use of the woodlot by white-tailed deer will be determined by MNRF, all woodlots exceeding the area criteria are significant, unless determined not to be significant by MNR[í]. • Studies should be completed during winter (Jan/Feb) when >20cm of snow is on the ground using aerial survey techniques[ccxxiv] , ground or road surveys, or a pellet count deer density survey[ccxxv]. • If a SWH is determined for Deer Wintering Area of if a proposed development is within Stratum II yarding area then Movement Corridors are to be considered as outlined in Table 1.4.1 of this Schedule. • SWHMiST[cxlix] Index #2 provides development effects and mitigation measures.	Suitable deer winter congregation areas are not present within the subject property. **Not SWH.**

Significant Wildlife Habitat Assessment: Ecoregion 6E.

Table 2. Characteristics of Rare Vegetation Communities

Rationale	Candidate SWH			Confirmed SWH	Study Area
	ELC Ecosite Codes	Habitat Description	Habitat Criteria and Information Sources	Defining Criteria	Assessment Details
Cliffs and Talus Slopes					
Cliffs and Talus Slopes are extremely rare habitats in Ontario.	Any ELC Ecosite within Community Series: TAO CLO TAS CLS TAT CLT	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. <u>Information Sources</u> • The Niagara Escarpment Commission has detailed information on location of these habitats. • OMNRF District • Natural Heritage Information Center (NHIC) has location information on their website • Local naturalist clubs • Conservation Authorities	• Confirm any ELC Vegetation Type for Cliffs or Talus Slopes[lxxviii] • SWHMiST[cxlix] Index #21 provides development effects and mitigation measures.	Ecosite is not present within the subject property. **Not SWH.**
Sand Barren					
Sand barrens are rare in Ontario and support rare species. Most Sand Barrens have been lost due to cottage development and forestry.	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%.	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%.	Any sand barren area, >0.5ha in size. <u>Information Sources</u> • OMNRF Districts. • Natural Heritage Information Center (NHIC) has location information on their website • Field naturalist clubs • Conservation Authorities	• Confirm any ELC Vegetation Type for Sand Barrens[lxxviii] • Site must not be dominated by exotic or introduced species (<50% vegetative cover exotics)[i]. • SWHMiST[cxlix] Index #20 provides development effects and mitigation measures.	Ecosite is not present within the subject property. **Not SWH.**
Alvar					
Alvars are extremely rare habitats in Ecoregion 6E. Most alvars in Ontario are in Ecoregion 6E and 7E. Alvars in 6E are small and highly localized just north of the Palaeozoic-	ALO1 ALS1 ALT1 FOC1 FOC2 CUM2 CUS2 CUT2-1 CUW2 Five Alvar Indicator Species:	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 is complex, with alternating periods of inundation and drought. Vegetation cover varies from sparse lichen-moss associations to grasslands and shrublands	An Alvar site > 0.5 ha in size[lxxv]. <u>Information Sources</u> • Alvars of Ontario (2000), Federation of Ontario Naturalists[lxxvi]. • Ontario Nature – Conserving Great Lakes Alvars[ccviii]. • Natural Heritage Information Center (NHIC) has location information on their website • Field Naturalist clubs • Conservation Authorities	Field studies identify four of the five Alvar indicator species[lxxv, cxlix] at a Candidate Alvar site is Significant. • Site must not be dominated by exotic or introduced species (<50% vegetative cover are exotics sp.). • The alvar must be in excellent condition and fit in with surrounding landscape with few conflicting land uses[lxxv].	Ecosite is not present within the subject property. **Not SWH.**

Significant Wildlife Habitat Assessment: Ecoregion 6E.

Table 2. Characteristics of Rare Vegetation Communities

Rationale	Candidate SWH			Confirmed SWH	Study Area
	ELC Ecosite Codes	**Habitat Description**	**Habitat Criteria and Information Sources**	**Defining Criteria**	**Assessment Details**
Precambrian contact.	1) Carex crawei 2) Panicum philadelphicum 3) Eleochairs compressa 4) Scutellaria parvula 5) Trichostema branchiatum These indicator species are very specific to Alvars within Ecoregion 6E	and comprising a number of characteristic or indicator plant. Undisturbed alvars can be phyto- and zoo geographically 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[lxxviii].		• SWHMiST[cxlix] Index #17 provides development effects and mitigation measures.	
Old Growth Forest					
Due to historic logging practices, extensive old growth forest is rare in the Ecoregion. Interior habitat provided by old growth forests is required by many wildlife species.	Forest Community Series: FOD FOC FOM SWD SWC SWM	Old Growth forests are characterized by heavy mortality or turnover of over-storey trees resulting in a mosaic of gaps that encourage development of a multi-layered canopy and an abundance of snags and downed woody debris.	Woodland Stands areas 30ha or greater in size or with at least 10 ha interior habitat assuming 100m buffer at edge of forest Í. Information Sources • OMNRF Forest Resource Inventory mapping • OMNRF Forester, Ecologist or Biologist • Field Local naturalist clubs • Conservation Authorities • Sustainable Forestry License (SFL) companies will possibly know locations through field operations. • Municipal forestry departments	Field Studies will determine: • If dominant trees species of the ecosite are >140 years old, then stand is Significant Wildlife Habitat[cxlviii] • The stand will have experienced no recognizable forestry activities[cxlviii] • The area of Forest Ecosites combined to make up the stand is the SWH. • Determine ELC Vegetation Type for forest stand[lxxviii] • SWHDSS[cxlix] Index #23 provides development effects and mitigation measures.	Ecosite is not present within the subject property. **Not SWH.**
Tallgrass Prairie					
Tallgrass Prairies are extremely rare habitats in Ontario.	TPO1 TPO2	A Tallgrass Prairie has ground cover dominated by prairie grasses. An open Tallgrass Prairie habitat has < 25% tree cover.	• 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. <u>Information Sources</u> • OMNR Districts • Natural Heritage Information Center (NHIC) has location information available on their website • Field naturalists clubs • Conservation Authorities	Field studies confirm one or more of the Prairie indicator species listed in[lxxv] Appendix N should be present. Note: Prairie plant spp. list from Ecoregion 6E should be used[cxlviii]. • Area of the ELC Ecosite is the SWH • Site must not be dominated by exotic or introduced species (<50% vegetative cover exotics). • SWHMiST[cxlix] Index #19 provides development effects and mitigation measures.	Ecosite is not present within the subject property. **Not SWH.**

Significant Wildlife Habitat Assessment: Ecoregion 6E.

Table 2. Characteristics of Rare Vegetation Communities

Rationale	Candidate SWH			Confirmed SWH	Study Area
	ELC Ecosite Codes	Habitat Description	Habitat Criteria and Information Sources	Defining Criteria	Assessment Details
Savannah					
Savannahs are extremely rare habitats in Ontario.	TPS1 TPS2 TPW1 TPW2 CUS2	A Savannah is a tallgrass prairie habitat that has tree cover between 25 – 60%.	• 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. Information Sources • Natural Heritage Information Center (NHIC) has location information on their website • OMNRF Ecologists • Field naturalists clubs • Conservation Authorities	Field studies confirm one or more of the Savannah indicator species listed in[lxxv] Appendix N should be present. Note: Savannah plant spp. list from Ecoregion 6E should be used[cxlviii]. • Area of the ELC Ecosite is the SWH. • Site must not be dominated by exotic or introduced species (<50% vegetative cover exotics sp.). • SWHMiST[cxlix] Index #18 provides development effects and mitigation measures.	Ecosite is not present within the subject property. **Not SWH.**
Other Rare Vegetation Communities					
Plant communities that often contain rare species which depend on the habitat for survival.	Provincially Rare S1, S2 and S3 vegetation communities are listed in Appendix M of the SWHTG[cxlviii]. Any ELC Ecosite Code that has a possible ELC Vegetation Type that is Provincially Rare is Candidate SWH.	Rare Vegetation Communities may include beaches, fens, forest, marsh, barrens, dunes and swamps.	ELC Ecosite codes that have the potential to be a rare ELC Vegetation Type as outlined in appendix M[cxlviii] The OMNR/NHIC will have up to date listing for rare vegetation communities. Information Sources • Natural Heritage Information Center (NHIC) has location information available on their website • OMNRF Districts • Field naturalists clubs • Conservation Authorities	Field studies should confirm if an ELC Vegetation Type is a rare vegetation community based on listing within Appendix M of SWHTG[cxlviii]. • Area of the ELC Vegetation Type polygon is the SWH. • SWHMiST[cxlix] Index #37 provides development effects and mitigation measures.	No rare vegetation communities are present within the subject property. **Not SWH.**

Significant Wildlife Habitat Assessment: Ecoregion 6E.

Table 3. Characteristics of Specialized Wildlife Habitat

Rationale	Wildlife Species	Candidate SWH		Confirmed SWH	Study Area
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	Assessment Details
Waterfowl Nesting Area					
Important to local waterfowl populations, sites with greatest number of species and highest number of individuals are significant.	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	A waterfowl nesting area extends 120m[cxlix] 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 120m of each individual wetland where waterfowl nesting is known to occur[cxlix]. • Upland areas should be at least 120m wide so that predators such as raccoons, skunks, and foxes have difficulty finding nests. • Wood Ducks and Hooded Mergansers utilize large diameter trees (>40cm dbh) in woodlands for cavity nest sites. <u>Information Sources</u> • Ducks Unlimited staff may know the locations of particularly productive nesting sites. • OMNRF Wetland Evaluations for indication of significant waterfowl nesting habitat. • Reports and other information available from CAs	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"[ccxi] • 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 120m[cxlviii] from the wetland and will provide enough habitat for waterfowl to successfully nest. • SWHMiST[cxlix] Index #25 provides development effects and mitigation measures.	Suitable nesting habitat is not present within the subject property. **Not SWH.**
Bald Eagle and Osprey Nesting, Foraging and Perching Habitat					
Nest sites are fairly uncommon in Eco-region 6E are used annually by these species. Many suitable nesting locations may be lost due to increasing shoreline development pressures and scarcity of habitat.	Osprey <u>Special Concern</u>: Bald Eagle	ELC Forest Community Series: FOD, FOM, FOC, SWD, SWM and SWC directly adjacent to riparian areas – rivers, lakes, ponds and wetlands	• Nests are associated with lakes, ponds, rivers or wetlands along forested shorelines, islands, or on structures over water. • Osprey nests are usually at the top a tree whereas Bald Eagle nests are typically in super canopy trees in a notch within the tree's canopy. • Nests located on man-made objects are not to be included as SWH (e.g. telephone poles and constructed nesting platforms).	Studies confirm the use of these nests by: • One or more active Osprey or Bald Eagle nests in an area[cxlviii]. • 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 300m radius around the nest or the contiguous woodland stand is the	Suitable habitat is not present within the subject property. **Not SWH.**

Significant Wildlife Habitat Assessment: Ecoregion 6E.

Table 3. Characteristics of Specialized Wildlife Habitat

Rationale	Wildlife Species	Candidate SWH		Confirmed SWH	Study Area
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	Assessment Details
			Information Sources • Natural Heritage Information Center (NHIC) compiles all known nesting sites for Bald Eagles in Ontario. • MNRF values information (LIO/NRVIS) will list known nesting locations. Note: data from NRVIS is provided as a point and does not represent all the habitat. • Nature Counts, Ontario Nest Records Scheme data. • OMNRF Districts • Sustainable Forestry License (SFL) companies will identify additional nesting locations through field operations. • Check the Ontario Breeding Bird Atlas[ccv] or Rare Breeding Birds in Ontario for species documented • Reports and other information available from CAs. • Field naturalists clubs	SWHccvii, maintaining undisturbed shorelines with large trees within this area is important[cxlviii]. • For a Bald Eagle the active nest and a 400-800m radius around the nest is the SWH[cvi], ccvii. 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[cvi]. • To be significant a site must be used annually. When found inactive, the site must be known to be inactive for >3 years or suspected of not being used for >5 years before being considered not significant[ccvii] • 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"[ccxi] • SWHMiST[cxlix] Index #26 provides development effects and mitigation measures	
Woodland Raptor Nesting Habitat					
Nests sites for these species are rarely identified; these area sensitive habitats and are often used annually by these species.	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.	All natural or conifer plantation woodland/forest stands >30ha with >10ha of interior habitat[lxxxviii, lxxxix, xc, xci, xciii, xciv, xcv, xcvi, cxxxiii]. Interior habitat determined with a 200m buffer[cxlviii]. • 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 Cooper's hawk nest along forest edges sometimes on peninsulas or small off-shore islands. • In disturbed sites, nests may be	Studies confirm: • Presence of 1 or more active nests from species list is considered significant[cxlviii]. • Red-shouldered Hawk and Northern Goshawk – a 400m radius around the nest or 28ha area of habitat is the SWH[ccvii]. • Barred Owl – a 200m radius around the nest is the SWH[ccvii]. • Broad-winged Hawk and Coopers Hawk – a 100m radius around the nest is the SWH[ccvii]. • Sharp-shinned Hawk – a 50m radius around the nest is the	Suitable habitat is not present within subject property. **Not SWH.**

Significant Wildlife Habitat Assessment: Ecoregion 6E.

Table 3. Characteristics of Specialized Wildlife Habitat

Rationale	Wildlife Species	Candidate SWH		Confirmed SWH	Study Area
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	Assessment Details
			used again, or a new nest will be in close proximity to old nest. Information Sources • OMNRF • Check the Ontario Breeding Bird Atlas[ccv] or Rare Breeding Birds in Ontario for species documented. • Check data from Bird Studies Canada • Reports and other information available from CAs	SWH[ccvii]. • 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. • SWHMiST[cxlix] Index #27 provides development effects and mitigation measures.	
Turtle Nesting Areas					
These habitats are rare and when identified will often be the only breeding site for local populations of turtles	Midland Painted Turtle Special Concern: Northern Map Turtle Snapping Turtle	Exposed mineral soil (sand or gravel) areas adjacent (<100m)[cxlviii] or within the following ELC Ecosites: MAS1 MAS2 MAS3 SAS1 SAM1 SAF1 BOO1 FEO1	• 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. Information Sources • Use Ontario Soil Survey reports and maps to help find suitable substrate for nesting turtles (well-drained sands and fine gravels). • Check the Ontario Herpetofaunal Summary Atlas records or other similar atlases for uncommon turtles; location information may help to find potential nesting habitat for them. • Natural Heritage Information Center (NHIC)	Studies confirm: • Presence of 5 or more nesting Midland Painted Turtles • One or more Northern Map Turtle or Snapping Turtle nesting is a SWH[l] • 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 dependent on slope, riparian vegetation and adjacent land use is the SWH[cxlviii]. • Travel routes from wetland to nesting area are to be considered within the SWH[cxlix]. • Field investigations should be conducted in prime nesting season typically late spring to early summer. Observational studies observing the turtles nesting is a recommended method. • SWHMiST[cxlix] Index #28 provides development effects and mitigation measures for turtle nesting habitat.	Suitable habitat may be present within the subject property. Preliminary site investigation will characterize soils and identify whether suitable habitat is available. **Candidate SWH.**

Significant Wildlife Habitat Assessment: Ecoregion 6E.

Table 3. Characteristics of Specialized Wildlife Habitat

Rationale	Wildlife Species	Candidate SWH		Confirmed SWH	Study Area
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	Assessment Details
			• Field Naturalist clubs and landowners		
Seeps and Springs					
Seeps/Springs are typical of headwater areas and are often at the source of coldwater streams.	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.	Any forested area (with <25% meadow/field/pasture) within the headwaters of a stream or river system[cxvii, cxlix]. • Seeps and springs are important feeding and drinking areas especially in the winter will typically support a variety of plant and animal species[cxix, cxx, cxxi, cxxii, cxiii, cxiv] Information Sources • Topographical Map • Thermography • Hydrological surveys conducted by CAs and MOE • Field naturalists clubs and landowners • Municipalities and Conservation Authorities may have drainage maps and headwater areas mapped.	Field Studies confirm: • Presence of a site with 2 or more seeps/springs should be considered SWH. • The area of a ELC forest ecosite containing the seeps/springs is the SWH. The protection of the recharge area considering the slope, vegetation, height of trees and groundwater condition need to be considered in delineation the habitat[cxlviii] • SWHMiST[cxlix] Index #30 provides development effects and mitigation measures	No seeps or springs were observed during the preliminary site investigation. **Not SWH.**
Wildlife Habitat: Amphibian Breeding Habitat (Woodland)					
These habitats are extremely important to amphibian biodiversity within a landscape and often represent the only breeding habitat for local amphibian populations.	Eastern Newt Blue-spotted Salamander Spotted Salamander Gray Treefrog Spring Peeper Western Chorus Frog Wood Frog	All Ecosites associated with these ELC Community Series: FOC FOM FOD SWC SWM SWD Breeding pools within the woodland or the shortest distance from forest habitat are more significant because they are more likely to be used due to reduced risk to migrating amphibians.	• Presence of a wetland, pond or woodland pool (including vernal pools) >500m^2 (about 25m diameter) [ccvii] within or adjacent (within 120m) to a woodland (no minimum size)[clxxxii, lxiii, lxv, lxvi, lxvii, lxviii, lxix, lxx] Some small wetlands may not be mapped and may be important breeding pools for amphibians. • Woodlands with permanent ponds or those containing water in most years until mid-July are more likely to be used as breeding habitat[cxlviii] Information Sources • Ontario Herpetofaunal Summary Atlas (or other similar atlases) for records • Local landowners may also	Studies confirm: • Presence of breeding population of 1 or more of the listed newt/salamander species or 2 or more of the listed frog species with at least 20 individuals (adults or eggs masses)[lxxi] or 2 or more of the listed frog species with Call Level Codes of 3. • A combination of observational study and call count surveys[cviii] will be required during the spring March-June when amphibians are concentrated around suitable breeding habitat within or near the woodland/wetlands. • The habitat is the woodland area plus a 230m radius of woodland area[lxiii,lxv, lxvi, lxvii, lxviii, lxix,	Suitable habitat is not present within subject property. **Not SWH.**

Significant Wildlife Habitat Assessment: Ecoregion 6E.

Table 3. Characteristics of Specialized Wildlife Habitat

Rationale	Wildlife Species	Candidate SWH		Confirmed SWH	Study Area
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	Assessment Details
			provide assistance as they may hear spring-time choruses of amphibians on their property. • OMNRF District • OMNRF wetland evaluations • Field naturalist clubs • Canadian Wildlife Service Amphibian Road Call Survey • Ontario Vernal Pool Association: http://www.ontariovernalpools.org	[lxx, lxxi] if a wetland area is adjacent to a woodland, a travel corridor connecting the wetland to the woodland is the be included in the habitat. • SWHMiST[cxlix] Index #14 provides development effects and mitigation measures.	
Wildlife Habitat: Amphibian Breeding Habitat (Wetland)					
These habitats are extremely important to amphibian biodiversity within a landscape and often represent the only breeding habitat for local amphibian populations	Eastern Newt American Toad Spotted Salamander Four-toed Salamander Blue-spotted Salamander Gray Tree frog Western Chorus Frog Northern Leopard Frog Pickerel Frog Green Frog Mink Frog Bullfrog	ELC Community Classes SW, MA, FE, BO, OA and SA. Typically these wetland ecosites will be isolated (>120m) from woodland ecosites, however larger wetlands containing predominantly aquatic species (e.g. Bull Frog) may be adjacent to woodlands.	• Wetlands >500m2 (about 25m diameter)[ccvii] supporting high species diversity are significant; some small or ephemeral habitats may not be identified on MNRF mapping and could be important amphibian breeding habitats[clxxxiv]. • 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>Information Sources</u> • Ontario Herpetofaunal Summary Atlas (or other similar atlases) • Canadian Wildlife Service Amphibian Road Surveys and Backyard Amphibian Call Count. • OMNRF Districts and wetland evaluations • Reports and other information available from CAs.	Studies confirm: • Presence of breeding population of 1 or more of the listed newt/salamander species or 2 or more of the listed frog/toad species and with at least 20 individuals (adults or eggs masses)[lxxi, lxxiii], or 2 or more of the listed frog/toad species with Call Level Codes of 3. or; Wetland with confirmed breeding Bullfrogs are significant. • The ELC ecosite wetland area and the shoreline are the SWH. • A combination of observational study and call count surveys[cviii] will be required during spring March to June) when amphibians are concentrated around suitable breeding habitat within or near the wetlands. • If a SWH is determined for Amphibian Breeding Habitat (Wetlands) then Movement Corridors are to be considered as outlined in Table 1.4.1 of this Schedule. • SWHMiST[cxlix] Index #15 provides development effects and mitigation measures.	Suitable habitat may be present within isolated Marsh and within the floodplain riparian habitat. Further site investigations will characterize the availability of breeding habitat. **Candidate SWH.**
Woodland Area-Sensitive Bird Breeding Habitat					
Large, natural blocks of mature woodland habitat	Yellow-Bellied Sapsucker Red-breasted Nuthatch Veery	All Ecosites associated with these ELC Community Series:	• Habitats where interior forest breeding birds are breeding, typically large mature (>60 yrs	• Presence of nesting or breeding pairs of 3 or more of the listed wildlife species.	Suitable habitat does not exist within the subject property.

Significant Wildlife Habitat Assessment: Ecoregion 6E.

Table 3. Characteristics of Specialized Wildlife Habitat

Rationale	Wildlife Species	Candidate SWH		Confirmed SWH	Study Area
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	Assessment Details
within the settled areas of Southern Ontario are important habitats for area sensitive interior forest song birds.	Blue-headed Vireo Northern Parula Black-throated Green Warbler Blackburnian Warbler Black-throated Blue Warbler Ovenbird Scarlet Tanager Winter Wren Special Concern: Cerulean Warbler Canada Warbler	FOC FOM FOD SWC SWM SWD	old) forest stands or woodlots >30 ha.[cv, cxxxi, cxxxii, cxxxiii, cxxxiv, cxxv, cxxvi, cxxxvii, cxxxviii, cxxxix, cxl, cxli, cxlii, cxliii, cxliv, cxlv, cxlvi, cl, cli, clii, cliii, cliv, clv, clvii, clviii, clix] • Interior forest habitats are at least 200m from forest edge habitat. Information Sources • Local bird clubs • Canadian Wildlife Service (CWS) for the location of forest bird monitoring. • Bird studies Canada conducted a 3-year study of 287 woodlands to determine the effects of forest fragmentation on forest birds and to greatest value to interior species • Reports and other information available from CAs.	• Note: any site with breeding Cerulean Warblers or Canada Warblers is to be considered SWH. • Conduct field investigations 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"[ccxi] • SWHMiST[cxlix] Index #34 provides development effects and mitigation measures.	**Not SWH.**

Significant Wildlife Habitat Assessment: Ecoregion 6E.

Table 4. Characteristics of Habitat for Species of Conservation Concern

Rationale	Wildlife Species	Candidate SWH		Confirmed SWH	Study Area
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	Assessment Details
Marsh Bird Breeding Habitat					
Wetlands for these bird species are typically productive and fairly rare in Southern Ontario landscapes.	American Bittern Virginia Rail Sora Common Gallinule American Coot Pied-billed Grebe Marsh Wren Sedge Wren Common Loon Sandhill Crane Green Heron Trumpeter Swan <u>Special Concern</u>: Black Tern Yellow Rail	MAM1 MAM2 MAM3 MAM4 MAM5 MAM6 SAS1 SAM1 SAF1 FEO1 BOO1 For Green Heron: All SW, MA and CUM1 sites.	• Nesting occurs in wetlands • All wetland habitat is to be considered as long as there is shallow water with emergent aquatic vegetation present[cxxiv]. • 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. <u>Information Sources</u> • Contact OMNRF, wetland evaluations are a good source of information. • Field naturalist clubs • Natural Heritage Information Center (NHIC) Records • Reports and other information available from CAs. • Ontario Breeding Bird Atlas[ccv]	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[i]. • Note: any wetland with breeding of 1 or more Black Terns, Trumpeter Swan, Green Heron or Yellow Rail is SWH[i]. • 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"[ccxi]. • SWHMiST[cxlix] Index #35 provides development effects and mitigation measures	Suitable habitat does not exist within the subject property. **Not SWH.**
Open Country Bird Breeding Habitat					
This wildlife habitat is declining throughout Ontario and North America. Species such as the Upland Sandpiper have declined significantly the past 40 years based on CWS (2004) trend records.	Upland Sandpiper Grasshopper Sparrow Vesper Sparrow Northern Harrier Savannah Sparrow <u>Special Concern</u>: Short-eared Owl	CUM1 CUM2	Large grassland areas (includes natural and cultural fields and meadows) >30 ha [clx, clxi, clxii, clxiii, clxiv, clxv, clxvi, clxvii, clxviii, clxix]. Grasslands not Class 1 or 2 agricultural lands, and not being actively used for farming (i.e. no row cropping or intensive hay or livestock pasturing in the last 5 years)[i]. Grassland sites considered significant should have a history of longevity, either abandoned fields, mature hayfields and pasturelands that are at least 5 years or older. The Indicator bird species are area sensitive requiring larger grassland areas than the common	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 Owl 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"[ccxi].	No grasslands of adequate size are present or contiguous with the subject property. **Not SWH.**

Significant Wildlife Habitat Assessment: Ecoregion 6E.

Table 4. Characteristics of Habitat for Species of Conservation Concern

Rationale	Wildlife Species	Candidate SWH		Confirmed SWH	Study Area
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	Assessment Details
			grassland species. Information Sources • Agricultural land classification maps, Ministry of Agriculture. • Ask local birders • Ontario Breeding Bird Atlas[ccv] • Reports and other information available from CAs.	• SWHMiST[cxlix] Index #32 provides development effects and mitigation measures.	
Shrub/Early Successional Bird Breeding Habitat					
This wildlife habitat is declining throughout Ontario and North America. The Brown Thrasher has declined significantly over the past 40 years based on CWS (2004) trend records cxcix.	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.	Large field areas succeeding to shrub and thicket habitats>10ha[clxiv] 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)[i]. Shrub thicket habitats (>10 ha) are most likely to support and sustain a diversity of these species [clxxiii]. Shrub and thicket habitat sites considered significant should have a history of longevity, either abandoned fields or pasturelands. Information Sources • Agricultural land classification maps Ministry of Agriculture Local bird clubs • Ontario Breeding Bird Atlas[ccv] • Reports and other information available from CAs	Field Studies confirm: • Presence of nesting or breeding of 1 of the indicator species and at least 2 of the common species[i]. • A field with breeding Yellow-breasted Chat or Golden-winged Warbler is to be considered as Significant Wildlife Habitat. • The area of the SWH is the contiguous ELC ecosite field/thicket 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"[ccxi] • SWHMiST[cxlix] Index #33 provides development effects and mitigation measures.	Though cultural thicket (CUT) exists within the subject property, the habitat is dominated by European Buckthorn (*Rhamnus cathartica*) and does not provide adequate breeding habitat. **Not SWH.**
Terrestrial Crayfish					
Terrestrial Crayfish are only found within SW Ontario in Canada and their habitats are very rare. [ccii]	Chimney or Digger Crayfish: (*Fallicambarus fodiens*) Devil Crawfish or Meadow Crayfish: (*Cambarus Diogenes*)	MAM1 MAM2 MAM3 MAM4 MAM5 MAM6 MAS1 MAS2 MAS3 SWD	Wet meadow and edges of shallow marshes (no minimum size) identified should be surveyed for terrestrial crayfish. • Constructs burrows in marshes, mudflats, meadows, the ground can't be too moist. Can often be found far from water. • Both species are a semi-terrestrial burrower which spends	Studies Confirm: • Presence of 1 or more individuals of species listed or their chimneys (burrows) in suitable marsh meadow or terrestrial sites[cci] • Area of ELC Ecosite or an ecoelement area of meadow marsh or swamp within the larger ecosite area is the SWH	No crayfish chimneys were observed within or adjacent to the floodplain. **Not SWH.**

Significant Wildlife Habitat Assessment: Ecoregion 6E.

Table 4. Characteristics of Habitat for Species of Conservation Concern

Rationale	Wildlife Species	Candidate SWH		Confirmed SWH	Study Area
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	Assessment Details
		SWT SWM	most of its life within burrows consisting of a network of tunnels. Usually the soil is not too moist so that the tunnel is well formed. Information Sources • Information sources from "Conservation Status of Freshwater Crayfishes" by Dr. Premek Hamr for the WWF and CNF March 1998	• Surveys should be done April to August during in temporary or permanent water Note the presence of burrows or chemistry are often the only indicator of presence, observance or collection of individuals is very difficult[cci] • SWHMiST[cxlix] Index #36 provides development effects and mitigation measures.	
Special Concern and Rare Wildlife Species					
These species are quite rare or have experienced significant population declines in Ontario.	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) within a 1 or 10km grid. Older element occurrences were recorded prior to GPS being available, therefore location information may lack accuracy.	When an element occurrence is identified within a 1 or 10 km grid for a Special Concern or provincially Rare species; linking candidate habitat on the site needs to be completed to ELC Ecosites[lxxviii]. <u>Information Sources</u> • Natural Heritage Information Centre (NHIC) will have the Special Concern and Provincially Rare (S1-S3, SH) species lists with element occurrences data. • NHIC Website: "Get Information": http://nhic.mnr.gov.on.ca • Ontario Breeding Bird Atlas[ccv] • Expert advice should be sought as many of the rare spp. have little information available about their requirements.	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. • The area of the habitat to the finest ELC scale that protects the habitat form and function is the SWH, this must be delineated through detailed field studies. The habitat needs to be easily mapped and cover an important life stage component for a species e.g. specific nesting habitat or foraging habitat. • SWHMiST[cxlix] Index #37 provides development effects and mitigation measures.	Various species of special concern and regionally rare have been documented from within the vicinity of the subject property. Preliminary screening and the initial site investigation identified potentially suitable habitat for a number of species. **Candidate SWH.**

Significant Wildlife Habitat Assessment: Ecoregion 6E.

Table 5. Characteristics of Animal Movement Corridors

Rationale	Wildlife Species	Candidate SWH		Confirmed SWH	Study Area
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	Assessment Details
Amphibian Movement Corridors					
Movement corridors for amphibians moving from their terrestrial habitat to breeding habitat can be extremely important for local populations.	Eastern Newt Blue-spotted Salamander Spotted Salamander Gray Treefrog Spring Peeper Western Chorus Frog Northern Leopard Frog Pickerel Frog Green Frog Mink Frog Bullfrog	Corridors may be found in all ecosites associated with water. • Corridors will be determined based on identifying the significant breeding habitat for these species in Table 1.1.	Movement corridors between breeding habitat and summer habitat [clxxiv, clxxv, clxxvi, clxxvii, clxxviii, clxxix, clxxx, clxxxi]. Movement corridors must be determined when Amphibian breeding habitat is confirmed as SWH from Table 1.2.2 (Amphibian Breeding Habitat – Wetland) of this Schedule[i]. <u>Information Sources</u> • MNRF District Office • Natural Heritage Information Center NHIC • Reports and other information available from CAs • Field Naturalist Clubs	• 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, with several layers of vegetation. Cooridors unbroken by roads, waterways or bodies, and undeveloped areas are most significant[cxlix]. • Corridors should have at least 15m of vegetation on both sides of waterway [cxlix] or be up to 200m wide[cxlix] of woodland habitat and with gaps <20m [cxlix]. • Shorter corridors are more significant than longer corridors, however amphibians must be able to get to and from their summer and breeding habitat[cxlix]. • SWHMiST[cxlix] Index #40 provides development effects and mitigation measures.	No amphibian breeding habitat has been confirmed within the subject property. **Not SWH.**
Deer Movement Corridors					
Corridors important for all species to be able to access seasonally important life-cycle habitats or to access new habitat for dispersing individuals by minimizing their vulnerability while travelling.	White-tailed Deer	Corridors may be found in all forested ecosites. A Project Proposal in Stratum II Deer Wintering Area has potential to contain corridors.	Movement corridor must be determined when Deer Wintering Habitat is confirmed as SWH from Table 1.1 of this schedule[i]. • A deer wintering habitat identified by the OMNRF as SWH in Table 1.1 of this Schedule will have corridors that the deer use during fall migration and spring dispersion [clxxxii, clxxxiii, cxlix, cxciv]. • Corridors typically follow riparian areas, woodlots, areas of physical geography (ravines, or ridges). <u>Information Sources</u> • MNRF District Office • Natural Heritage Information Center (NHIC) • Reports and other information available from CAs • Field Naturalist Clubs	• Studies must be conducted at the time of year when deer are migrating or moving to and from winter concentration areas. • Corridors that lead to a deer wintering yard should be unbroken by roads and residential areas. • Corridors should be at least 200m wide[cxlix] with gaps <20m[cxlix] and if following riparian area with at least 15m of vegetation on both sides of waterway[cxlix] . Shorter corridors are more significant than longer corridors[cxlix] • SWHMiST[cxlix] Index #39 provides development effects and mitigation measures.	No deer wintering habitat has been confirmed within the subject property. **Not SWH.**

Significant Wildlife Habitat Assessment: Ecoregion 6E.

Table 6. Exceptions for Ecodistricts within Ecoregion 6E.

Rationale	Wildlife Species	Candidate SWH			Confirmed SWH	Study Area
		ELC Ecosites	Habitat Description	Habitat Criteria and Information Sources	Defining Criteria	Assessment Details
Mast Producing Areas (EcoDistrict 6E-14)						
The Bruce Peninsula has an isolated and distinct population of black bears. Maintenance of large woodland tracks with mast producing tree species is important for bears. [clxxxvi, ccxvii]	Black Bear	All Forested habitat represented by ELC Community Series: FOM FOD	• Black bears require forested habitat that provides cover, winter hibernation sites, and mast producing tree species. [clxxxv, clxxxvii, clxxxviii, clxxxix, cxc, cxci, cxcii, cxciii, ccxvii] • Forested habitats need to be large enough to provide cover and protection for black bears [ccxvii].	Woodland ecosites >30ha with mast-producing tree species, either soft (cherry) or hard (oak and beech), Information Sources Important forest habitat for black bears may be identified by OMNRF.	• All woodlands > 30 ha with a 50% composition of these ELC Vegetation Types are considered significant: FOM1-1 FOM2-1 FOM3-1 FOD1-1 FOD1-2 FOD2-1 FOD2-2 FOD2-3 FOD2-4 FOD4-1 FOD5-2 FOD5-3 FOD5-7 FOD6-5 • SWHMiST [cxlix] Index #3 provides development effects and mitigation measures.	Suitable habitat is not present within the subject property. **Not SWH.**
Lek (EcoDistrict 6E-17)						
Sharp-tailed grouse only occur on Manitoulin Island in Ecoregion 6E, Leks are an important habitat to maintain their population	Sharp-tailed Grouse	CUM CUS CUT	• The lek or dancing ground consists of bare, grassy or sparse shrubland. There is often a hill or rise in topographyccxix. • Leks are typically a grassy field/meadow >15h with adjacent shrublands and >30ha with adjacent deciduous woodland. Conifer trees within 500m are not tolerated. ccxix	Grasslands (field/meadow) are to be >15ha when adjacent to shrubland and >30ha when adjacent to deciduous woodland[ccxix]. • Grasslands are to be undisturbed with low intensities of agriculture (light grazing or late haying) • Leks will be used annually if not destroyed by cultivation or invasion by woody plants or tree planting[ccxix] Information Sources • OMNRF district office • Bird watching clubs • Local landowners • Ontario Breeding Bird Atlas	Studies confirming lek habitat are to be completed from late March to June. • Any site confirmed with sharp-tailed grouse courtship activities is considered significant • The field/meadow ELC ecosites plus a 200 m radius area with shrub or deciduous woodland is the lek habitat • SWHMiST [cxlix] Index #32 provides development effects and mitigation measures	Suitable habitat is not present within the subject property. **Not SWH.**

Appendix II

Species at Risk and Species of Conservation Concern Screening

Scientific Name	Common Name	S-RANK[1]	SARO[1]	COSEWIC[2]	SARA[2]	SARA Schedule[2]	Background Source	Observed by NRSI	Habitat Requirements	Suitable Habitats within Subject Property	Rationale
Birds											
Ammodramus savannarum	Grasshopper Sparrow	S4B	SC	SC	SC	Schedule 1	Significant Wildlife Habitat Technical Guide: Appendix G (OMNR 2000)	No	Well-drained grassland or prairie with low cover of grasses, taller weeds or sandy soil; hayfields or weedy fallow fields; uplands with ground vegetation of various densities. Requires perches for singing and tracts of grassland generally >5ha.	No	Open habitat consists of active agricultural fields. Suitable habitat is not present within subject property.
Chaetura pelagica	Chimney Swift	S3B	THR	T	T	Schedule 1	Significant Wildlife Habitat Technical Guide: Appendix G (OMNR 2000)	No	Commonly found in urban areas near buildings; nests in chimneys, hollow trees,and crevices of rock cliffs. Feeds over open water.	No	Suitable nesting habitat is not available within the subject property.
Contopus virens	Eastern Wood-pewee	S4B	SC	SC	SC	Schedule 1	Significant Wildlife Habitat Technical Guide: Appendix G (OMNR 2000)	No	Mid-canopy layer of forest clearings and edges of deciduous and mixed forest. Abundant in intermediate-age mature forest stands with little understory vegetation.	No	Corridor along Salt Creek is dominated by Buckthorn and does not provide suitable habitat.
Dolichonyx oryzivorus	Bobolink	S4B	THR	T	T	Schedule 1	Recovery Strategy for the Bobolink and Eastern Meadowlark in Ontario (McCracken et al. 2013)	Yes	Large (>10 ha), open expansive grasslands, pastures, hayfields, meadows or fallow fields with dense ground cover. Occassionally nest in large (>50 ha) fields of winter wheat and rye in southwestern Ontario.	No	Open habitat consists of active agricultural fields. Suitable habitat is not present within subject property, but may be present on adjacent lands.
Hirundo rustica	Barn Swallow	S4B	THR	SC	SC	Schedule 1	Significant Wildlife Habitat Technical Guide: Appendix G (OMNR 2000)	Yes	Farmlands, rural areas and other open or semi-open areas near body of water. Nests almost exclusively on human-made structures such as open barns, buildings, bridges and culverts.	No	Despite incidental observation of Barn Swallow, suitable nesting habitat is not available within the subject property.
Hylocichla mustelina	Wood Thrush	S4B	SC	T	T	Schedule 1	Significant Wildlife Habitat Technical Guide: Appendix G (OMNR 2000)	No	Carolinian and Great Lakes-St. Lawrence forest zones. Undisturbed moist mature deciduous or mixed forest with deciduous sapling growth. Near pond or swamp. Must have some trees higher than 12 m.	No	Corridor along Salt Creek is dominated by Buckthorn and does not provide suitable habitat.
Melanerpes erythrocephalus	Red-headed Woodpecker	S3	SC	E	E	Schedule 1	Significant Wildlife Habitat Technical Guide: Appendix G (OMNR 2000)	No	Open, deciduous forest with little understory; fields, parks or pasture lands with scattered large trees; wooded swamps; orchards, small woodlots or forest edges; groves of dead or dying trees. Requires cavity trees with at least 40 cm dbh.	No	Corridor along Salt Creek is dominated by Buckthorn and does not provide suitable habitat.
Protonotaria citrea	Prothonotary Warbler	S1B	END	E	E	Schedule 1	Significant Wildlife Habitat Technical Guide: Appendix G (OMNR 2000)	No	Area sensitive species preferring large tracts of flooded or swampy woodlands with standing or flowing water and more than 25% canopy cover with numerous stumps and snags. Stream borders or flooded bottomlands. Requires soft, dead trees with dbh >10 cm. Carolinian species.	No	Corridor along Salt Creek is dominated by Buckthorn and does not provide suitable habitat.
Riparia riparia	Bank Swallow	S4B	THR	T	T	Schedule 1	Significant Wildlife Habitat Technical Guide: Appendix G (OMNR 2000)	No	Nests in burrows in natural and human-made settings with vertical faces in silt and sand deposits. Ususally on banks of river and lakes, but also found in sand and gravel pits.	No	Suitable nesting habitat is not available within the subject property.
Sturnella magna	Eastern Meadowlark	S4B, S3N	THR	T	T	Schedule 1	Recovery Strategy for the Bobolink and Eastern Meadowlark in Ontario (McCracken et al. 2013)	No	Open pastures, hayfields, grasslands or grassy meadows with elevated singing perches (small trees, shrubs or fence posts). Also weedy borders of croplands, roadsides, orchards, airports, shrubby overgrown fields or other open areas. Generally prefers larger tracts of habitat >10 ha, but will sometimes use smaller tracts.	No	Open habitat consists of active agricultural fields. Suitable habitat is not present within subject property.
Vermivora chrysoptera	Golden-winged Warbler	S3B	SC	T	T	Schedule 1	Significant Wildlife Habitat Technical Guide: Appendix G (OMNR 2000)	No	Areas with young shrubs surrounded by mature forest, including locations that have recently been disturbed, such as abandoned fields, field edges, hydo or utility right-of-ways, or logged areas with saplings and grasses.	No	Corridor along Salt Creek is dominated by Buckthorn and does not provide suitable habitat.
Herpetofauna											
Turtles											

Scientific Name	Common Name	S-RANK[1]	SARO[1]	COSEWIC[2]	SARA[2]	SARA Schedule[2]	Background Source	Observed by NRSI	Habitat Requirements	Suitable Habitats within Subject Property	Rationale
Chelydra serpentina	Snapping Turtle	S4	SC	SC	SC	Schedule 1	Species at Risk in Ontario (MECP 2022)	No	Slow-flowing rivers and streams, lakes, and permanent or semi-permanent wetlands with soft substrates and vegetation. Key habitat requirements: open areas with structures for basking, open sand or gravel areas for nesting, shallow areas with soft substrates to bury in, soft banks or substrates for hibernation.	No	Salt Creek may offer a corridor for movement. However, substrates are generally characterized by gravel, cobble, hardpan clay, pebble, and sand. Soft substrates are limited, and no suitable overwintering habitat has been identified within the subject property. Wetlands within the subject property do not provide suitable habitat.
Frogs and Toads											
Pseudacris triseriata pop.1	Western Chorus Frog (Great Lakes - St. Lawrence - Canadian Shield population)	S4	NAR	T	T	Schedule 1	Significant Wildlife Habitat Technical Guide: Appendix G (OMNR 2000)	Yes	Moist forest, prairie, meadows, cultural meadows, or marshes. Breeds in shallow, temporary, fishless wetlands, including flooded ditches, marshes, flooded fields, pastures, temporary ponds, pools, and swamps. Hibernates in terrestrial habitats under rocks, logs, leaf litter, loose soil, or in animal burrows.	Yes	Western Chorus Frog was documented approxiamtely 200m away from ANR-002. This observation was likely associated with a tributary to Salt Creek that contains ephemeral flows.
Mammals											
Microtus pinetorum	Woodland Vole	S3?	SC	SC	SC	Schedule 1	Species at Risk in Ontario (MECP 2022)	No	Mature deciduous forest in the Carolinian region where there is a deep litter layer that allows it to burrow.	No	Suitable habitat is not present within subject property.
Myotis leibii	Eastern Small-footed Myotis	S2S3	END				Recovery Strategy for the Little Brown Myotis, Northern Myotis and Tri-colored Bat in Ontario (Humphrey, C. & H. Fortherby. 2019)	No	Roosts in caves, mine shafts, crevices or buildings that are in or near woodland. Hibernates in cold dry caves or mines. Maternity colonies in caves or buildings. Hunts in forests.	No	Suitable roosting and maternity colony habitat is not present wtihin the study area.
Myotis lucifungus	Little Brown Myotis	S3	END	E	E	Schedule 1	Recovery Strategy for the Little Brown Myotis, Northern Myotis and Tri-colored Bat in Ontario (Humphrey, C. & H. Fortherby. 2019)	No	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 and forest edges.	Candidate	14 candidate roost trees were observed within the subject property. These trees may offer suitable roosting habitat.
Myotis septentrionalis	Northern Myotis	S3	END	E	E	Schedule 1	Recovery Strategy for the Little Brown Myotis, Northern Myotis and Tri-colored Bat in Ontario (Humphrey, C. & H. Fortherby. 2019)	No	Roosts in houses and man-made structures but prefers hollow trees or under loose bark. Hibernates in mines or caves. Hunts within forest, below the canopy.	Candidate	14 candidate roost trees were observed within the subject property. These trees may offer suitable roosting habitat.
Perimyotis subflavus	Tri-colored Bat	S3?	END	E	E	Schedule 1	Recovery Strategy for the Little Brown Myotis, Northern Myotis and Tri-colored Bat in Ontario (Humphrey, C. & H. Fortherby. 2019)	No	Roosts and maternity colonies in older forests and occassionally in barns or other sturctures. Forage over water and along streams in the forest. Hibernate in caves.	No	Woodland is comprised primarily of Buckthorn, and does not provide older forest habitat necessary.
Taxidea taxus jacksoni	American Badger (Southwestern Ontario population)	S2	END	E	E	Schedule 1	Significant Wildlife Habitat Technical Guide: Appendix G (OMNR 2000)	No	Open grasslands, oak savannahs, sand barrens and farmland.	No	Suitable habitat is not present within the study area.
Butterflies											
Danaus plexippus	Monarch	S2N, S4B	SC	END	SC	Schedule 1	Species at Risk in Ontario (MECP 2022)	No	Adults found in a diversity of habitats with a variety of wildflowers. Caterpillars are confined to meadows and open areas where milkweeds grow (larval food plants).	No	Suitable habitat does not exist within the subject property.
Fish											
Clinostomus elongatus	Redside Dace	S1	END	E	E	Schedule 1	Species at Risk in Ontario (MECP 2022)	No	Pools and slow-moving areas of small streams and headwaters with a gravel bottom. Generally found in areas with overhanging grasses and shrubs. Can be found in shallow parts of streams during spawning.	Recovery Habitat identified as present	Salt Creek has been identified as providing recovery habitat by the DFO. Suitable habitat may exist within the subject property, and the creek is regualted under the ESA as recovery habitat.

Scientific Name	Common Name	S-RANK[1]	SARO[1]	COSEWIC[2]	SARA[2]	SARA Schedule[2]	Background Source	Observed by NRSI	Habitat Requirements	Suitable Habitats within Subject Property	Rationale

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Appendix III
Significant Wildlife Habitat Screening

Significant Wildlife Habitat Assessment: Ecoregion 6E.

Table 1. Characteristics of Seasonal Concentration Areas

Rationale	Wildlife Species	Candidate SWH		Confirmed SWH	Study Area
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	Assessment Details
Waterfowl Stopover and Staging Areas (Terrestrial)					
Habitat important to migrating waterfowl.	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.	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 unless they have spring sheet water available[exlviii]. <u>Information Sources</u> • Anecdotal information from the landowner, adjacent landowners or local naturalist clubs may be good information in determining occurrence. • Reports and other information available from Conservation Authorities (CAs) • Sites documented through waterfowl planning processes (eg. EHJV implementation plan) • Field Naturalist Clubs • Ducks Unlimited Canada • Natural Heritage Information Centre (NHIC) Waterfowl Concentration Area	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"[ccxi] • Any mixed species aggregations of 100 or more individuals required. • The area of the flooded field ecosite habitat plus a 100-300m radius buffer dependent on local site conditions and adjacent land use is the significant wildlife habitat[cxlviii]. • 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). • SWHMiST[cxlix] Index #7 provides development effects and mitigation measures.	Agricultural fields exists within the subject property and contains limited standing water, but is not of adequate size to support stopover and staging. **Not SWH.**
Waterfowl Stopover and Staging Areas (Aquatic)					
Important for local and migrant waterfowl populations during the spring or fall migration or both periods combined. Sites identified are usually only one of a few in the eco-district.	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	MAS1 MAS2 MAS3 SAS1 SAM1 SAF1 SWD1 SWD2 SWD3 SWD4 SWD5 SWD6 SWD7	• 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).	Studies carried out and verified presence of: • Aggregations of 100[f] or more of listed species for 7 days[f], results in > 700 waterfowl use days. • Areas with annual staging of ruddy ducks, canvasbacks, and redheads are SWH[cxlix] • The combined area of the ELC ecosites and a 100m radius area is the SWH[cxlviii] • Wetland area and shorelines associated with sites identified within the SWHTG[cxlviii] Appendix	Suitable aquatic habitats do not exist within the subject property. **Not SWH.**

Significant Wildlife Habitat Assessment: Ecoregion 6E.

Table 1. Characteristics of Seasonal Concentration Areas

Rationale	Wildlife Species	Candidate SWH		Confirmed SWH	Study Area
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	Assessment Details
	Long-tailed Duck Surf Scoter White-winged Scoter Black Scoter Ring-necked Duck Common Goldeneye Bufflehead Redhead Ruddy Duck Red-breasted Merganser Brant Canvasback		Information Sources • Environment Canada • Naturalist clubs often are aware of staging/stopover areas. • OMNRF Wetland Evaluations indicate presence of locally and regionally significant waterfowl staging. • Sites documented through waterfowl planning processes (eg. EHJV implementation plan) • Ducks Unlimited projects • Element occurrence specification by Nature Serve: http://www.natureserve.org • Natural Heritage Information Centre (NHIC) Waterfowl Concentration Area	K[cxlix] are significant wildlife habitat. • Evaluation methods to follow "Bird and Bird Habitats: Guidelines for Wind Power Projects"[ccxi] • 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). • SWHMiST[cxlix] Index #7 provides development effects and mitigation measures.	
Shorebird Migratory Stopover Area					
High quality shorebird stopover habitat is extremely rare and typically has a long history of use.	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 Whimbrel	BBO1 BBO2 BBS1 BBS2 BBT1 BBT2 SDO1 SDS2 SDT1 MAM1 MAM2 MAM3 MAM4 MAM5	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. Sewage treatment ponds and storm water ponds do not qualify as a SWH. Information Sources • Western hemisphere shorebird reserve network. • Canadian Wildlife Service (CWS) Ontario Shorebird Survey. • Bird Studies Canada • Ontario Nature • Local birders and naturalist clubs • Natural Heritage Information Center (NHIC) Shorebird Migratory Concentration Area	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 (<24hrs) 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 shoreline ecosites plus a 100m radius area[cxlviii] • Evaluation methods to follow "Bird and Bird Habitats: Guidelines for Wind Power Projects"[ccxi] • SWHMiST[cxlix] Index #8 provides development effects and mitigation measures.	Suitable shoreline habitat does not exist within the subject property. **Not SWH.**

Significant Wildlife Habitat Assessment: Ecoregion 6E.

Table 1. Characteristics of Seasonal Concentration Areas

Rationale	Wildlife Species	Candidate SWH		Confirmed SWH	Study Area
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	Assessment Details
Raptor Wintering Area					
Sites used by multiple species, a high number of individuals and used annually are most significant	Rough-legged Hawk Red-tailed Hawk Northern Harrier American Kestrel Snowy Owl <u>Special Concern:</u> Short-eared Owl Bald Eagle	Hawks/Owls: 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	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[cxlviii, cxlix] with a combination of forest and upland.[xvi, xvii, xviii, xix, xx, xxi]. Least disturbed sites, idle/fallow or lightly grazed field/meadow (>15ha) with adjacent woodlands[cxlix] Field area of the habitat is to be wind swept with limited snow depth or accumulation. Eagle sites have open water, large trees and snags available for roosting <u>Information Sources</u> • OMNRF Ecologist or Biologist • Field Natural Clubs • Natural Heritage Information Center (NHIC) Raptor Winter Concentration Area • Data from Bird Studies Canada • Reports and other information available from Conservation Authorities CAs.	Studies confirm the use of these habitats by: • One or more Short-eared Owls or; One or more Bald Eagles or; At least 10 individuals and two listed hawk/owl species • To be significant a site must be used regularly (3 in 5 years)[cxlix] for a minimum of 20 days by the above number of birds • The habitat area for an Eagle winter site is the shoreline forest ecosites directly adjacent to the prime hunting area • Evaluation methods to follow "Bird and Bird Habitats: Guidelines for Wind Power Projects"[ccxi] • SWHMiST[cxlix] Index #10 and #11 provides development effects and mitigation measures.	Suitable habitat does not exist within the subject property. Site is characterized by dense Buckthorn and agricultural fields with limited floodplain habitat. **Not SWH.**
Bat Hibernacula					
Bat hibernacula are rare habitats in Ontario landscapes.	Big Brown Bat Tri-coloured Bat	Bat Hibernacula may be found in these ecosites: CCR1 CCR2 CCA1 CCA2 (Note: buildings are not considered to be SWH)	• Hibernacula may be found in caves, mine shafts, underground foundations and Karsts. • Active mine sites should not be considered as SWH • The locations of bat hibernacula are relatively poorly known. <u>Information Sources</u> • OMNRF for possible locations and contact for local experts • Natural Heritage Information	• All sites with confirmed hibernating bats are SWH. • The habitat area includes a 200m radius around the entrance of the hibernaculum[cxlviii, ccvii] for most. • Studies are to be conducted during the peak swarming period (Aug. – Sept.). Surveys should be conducted following methods outlined in the "Bats and Bat Habitats: Guidelines for Wind	Suitable hibernacula sites are not present within the subject property. **Not SWH.**

Significant Wildlife Habitat Assessment: Ecoregion 6E.

Table 1. Characteristics of Seasonal Concentration Areas

Rationale	Wildlife Species	Candidate SWH		Confirmed SWH	Study Area
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	Assessment Details
			Center (NHIC) Bat Hibernaculum • Ministry of Northern Development and Mines for location of mine shafts. • Clubs that explore caves (eg. Sierra Club) • University Biology Departments with bat experts.	Power Projects"[ccv] • SWHMiST[cxlix] Index #1 provides development effects and mitigation measures.	
Bat Maternity Colonies					
Known locations of forested bat maternity colonies is extremely rare in all Ontario landscapes.	Big Brown Bat Silver-haired Bat	Maternity colonies considered SWH are found in forested Ecosites. All ELC Ecosites in ELC Community Series: FOD FOM SWD SWM	Maternity colonies can be found in tree cavities, vegetation and often in buildings[xxii, xxv, xxvi, xxvii, xxxi] (buildings are not considered to be SWH). • Maternity roosts are not found in caves and mines in Ontario[xxii] • Maternity colonies located in Mature deciduous or mixed forest stands[ccix, ccx] with >10/ha large diameter (>25cm dbh) wildlife trees[ccvii] • Female Bats prefer wildlife tree (snags) in early stages of decay, class 1-3[ccxiv] or class 1 or 2[ccxii] • 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[ccx] <u>Information Sources</u> • OMNRF for possible locations and contact for local experts • University Biology Departments with bat experts.	• Maternity Colonies with confirmed use by: • >10 Big Brown Bats • >5 Adult Female Silver-haired Bats • The area of the habitat includes the entire woodland or a forest stand ELC Ecosite or an Ecoelement containing the maternity colonies. • Evaluation methods for maternity colonies should be conducted following methods outlined in the "Bats and Bat Habitats: Guidelines for wind Power Projects[ccv] • SWHMiS T[cxlix] Index #12 provides development effects and mitigation measures.	Though subject property contains deciduous trees in various states of decay, the habitat is dominated highly by Buckthorn and does not provide suitable habitat or density for maternity colonies. **Not SWH.**
Turtle Wintering Area					
Generally sites are the only known sites in the area. Sites with the highest number of individuals are most significant	Midland Painted Turtle <u>Special Concern</u>: 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	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[cix, cx, cxi, cxviii].	• Presence of 5 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	Suitable overwintering habitat is not present within the subject property. **Not SWH.**

Table 1. Characteristics of Seasonal Concentration Areas

Rationale	Wildlife Species	Candidate SWH		Confirmed SWH	Study Area
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	Assessment Details
		with current can also be used as over-wintering habitat.	• Man-made ponds such as sewage lagoons or storm water ponds should not be considered SWH. Information Sources • EIS studies carried out by Conservation Authorities. • Local field naturalists and experts, as well as university herpetologists may also know where to find some of these sites. • OMNRF ecologist or biologist • Natural Heritage Information Center (NHIC)	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 (Sept. – Oct.) or spring (Mar. – May)[cvii] • Congregation of turtles is more common where wintering areas are limited and therefore significant[cix, cx, cxi, cxii]. • SWHMiST[cxlix] Index #28 provides development effects and mitigation measures for turtle wintering habitat.	
Reptile Hibernaculum					
Generally sites are the only known sites in the area. Sites with the highest number of individuals are most significant	Snakes: Eastern Gartersnake Northern Watersnake Northern Red-bellied Snake Northern Brownsnake Smooth Green Snake Northern Ring-necked Snake Special Concern: Milksnake Eastern Ribbonsnake Lizard: Special Concern (Southern Shield population): Five-lined Skink	For all snakes, habitat may be found in any ecosite 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. For Five-lined Skink, ELC Community Series of FOD and FOM and Ecosites: FOC1 FOC3	• For snakes, hibernation takes place in sites located below frost lines in burrows, rock crevices and other natural locations. The existence of features that go below the frost line; such as rock piles or slopes, old stone fences, and abandoned crumbling foundations assist in identifying candidate SWH. • Areas of broken and fissured rock are particularly valuable since they provide access to subterranean sites below the frost line[xliv, l, li, lii, cxii.] • 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 cciii. Information Sources	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 (eg. 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 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 [i.e. strong hibernation site fidelity]. Other critical life processes (e.g. mating) often take place in close proximity to hibernacula. The feature in which the hibernacula	No suitable habitat exists for snake hibernaculum within the subject property. **Not SWH.**

Table 1. Characteristics of Seasonal Concentration Areas

Rationale	Wildlife Species	Candidate SWH		Confirmed SWH	Study Area
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	Assessment Details
			• In spring, local residents or landowners may have observed the emergence of snakes on their property (e.g. old dug wells). • Reports and other information from CAs. • Local Field naturalists and experts, as well as university herpetologists may also know where to find some of these sites. clubs • Natural Heritage Information Center (NHIC) • OMNRF ecologist or biologist may be aware of locations of wintering skinks	is located plus a 30m buffer is the SWH[i] • SWHMiST[cxlix] Index #13 provides development effects and mitigation measures for snake hibernacula. • Presence of any active hibernaculum for skink is significant. • SWHMiST[cxlix] Index #37 provides development effects and mitigation measures for five-lined skink wintering habitat.	
Colonially - Nesting Bird Breeding Habitat (Bank and Cliff)					
Historical use and number of nests in a colony make this habitat significant. An identified colony can be very important to local populations. All swallow populations are declining in Ontario.	Cliff Swallow Northern Rough-winged Swallow (this species is not colonial but can be found in Cliff Swallow colonies)	Eroding banks, sandy hills, borrow pits, steep slopes, and sand piles Cliff faces, bridge abutments, silos, barns Habitat found in the following ecosites: CUM1 CUT1 CUS1 BLO1 BLS1 BLT1 CLO1 CLS1 CLT1	• Any site or areas with exposed soil banks, undisturbed or naturally eroding that is not a licensed/permitted aggregate area. • Does not include man-made structures (bridges or buildings) or recently (2 years) disturbed soil areas, such as berms, embankments, soil or aggregate stockpiles. • Does not include a licensed/permitted Mineral Aggregate Operation. <u>Information Sources</u> • Reports and other information available from CAs • Ontario Breeding Bird Atlas [ccv] • Bird Studies Canada; *NatureCounts* http://www.birdscanada.org/birdmon/ • Field Naturalist clubs	Studies confirming: • Presence of 1 or more nesting sites with 8[cxlvix] or more cliff swallow pairs and/or rough-winged swallow pairs during the breeding season. • A colony identified as SWH will include a 50m radius habitat area from the peripheral nests[ccvii] • Field surveys to observe and count swallow nests are to be completed during the breeding season Evaluation methods to follow "Bird and Bird Habitats: Guidelines for Wind Power Projects"[ccxi] • SWHMiST[cxlix] Index #4 provides development effects and mitigation measures	Suitable nesting habitat is not present within the subject property. **Not SWH.**
Colonially - Nesting Bird Breeding Habitat (Tree/Shrubs)					
Large Colonies are important to local bird population, typically sites are only known colony	Great Blue Heron Black-crowned Night-heron Great Egret Green Heron	SWM2 SWM3 SWM5 SWM6 SWD1 SWD2 SWD3 SWD4 SWD5 SWD6 SWD7 FET1	• 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 15m	Studies confirming: • Presence of 5[i] or more active nests of Great Blue Heron or other listed species. • The habitat extends from the edge of the colony and a	Suitable nesting habitat is not present within the subject property. **Not SWH.**

Significant Wildlife Habitat Assessment: Ecoregion 6E.

Table 1. Characteristics of Seasonal Concentration Areas

Rationale	Wildlife Species	Candidate SWH		Confirmed SWH	Study Area
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	Assessment Details
in area and are used annually.			from ground, near the top of the tree. Information Sources • Ontario Breeding Bird Atlas[ccv], colonial nest records. • Ontario Heronry Inventory 1991 available from Bird Studies Canada or NHIC (OMNR). • NHIC Mixed Wader Nesting Colony • Aerial photographs can help identify large heronries • Reports and other information available from CAs • MNRF District Offices • Local naturalist clubs	minimum 300m radius or extent of the Forest Ecosite containing the colony or any island <15.0ha with a colony is the SWH [cc, ccvii] • Confirmation of active heronries are to be achieved through site visits conducted during the nesting season (April to August) or by evidence such as the presence of fresh guano, dead young and/or eggshells • SWHMiST[cxlix] Index #5 provides development effects and mitigation measures.	
Colonially - Nesting Bird Breeding Habitat (Ground)					
Colonies are important to local bird populations, typically sites are only known colony in area and are used annually.	Herring Gull Great Black-backed Gull Little Gull Ring-billed 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	• Nesting colonies of gulls and terns are on islands or peninsulas associated with open water or in marshy areas. • Brewers Blackbird colonies are found loosely on the ground in or in low bushes in close proximity to streams and irrigation ditches within farmlands. Information Sources • Ontario Breeding Bird Atlas[ccv], rare/colonial species records. • Canadian Wildlife Service • Reports and other information available from CAs • Natural Heritage Information Center (NHIC) Colonial Waterbird Nesting Area • MNRF District Offices • Field naturalist clubs	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[i]. • 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[cc, ccvii] • Studies would be done during May/June when actively nesting. Evaluation methods to follow "Bird and Bird Habitats: Guidelines for Wind Power Projects"[ccxi] • SWHMiST[cxlix] Index #6 provides development effects and mitigation measures.	Suitable nesting habitat is not present within the subject property. **Not SWH.**

Significant Wildlife Habitat Assessment: Ecoregion 6E.

Table 1. Characteristics of Seasonal Concentration Areas

Rationale	Wildlife Species	Candidate SWH		Confirmed SWH	Study Area
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	Assessment Details
Migratory Butterfly Stopover Areas					
Butterfly stopovers areas are extremely rare habitats and are biologically important for butterfly species that migrate south for the winter.	Painted Lady Red Admiral <u>Special Concern</u>: Monarch	Combination of ELC Community Series: Need to have present one Community Series from each landclass: <u>Field</u>: CUM CUS CUT <u>Forest</u>: FOC FOM FOD CUP Anecdotally, a candidate sight for butterfly stopover will have a history of butterflies being observed.	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[cxlix]. • 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[xxxii, xxxiii, xxxiv, xxxv, xxxvi.] • 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 cxlviii, cxlix. • 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[xxxvii, xxxviii, xxxix, xl, xli.] <u>Information Sources</u> • OMNRF (NHIC) • Agriculture Canada in Ottawa may have list of butterfly experts. • Field Naturalist Clubs • Toronto Entomologists Association • Conservation Authorities	Studies confirm: • The presence of Monarch Use Days (MUD) during fall migration (Aug/Oct)[xliii]. 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[xxxvii], significant variation can occur between years and multiple years of sampling should occur [xl, xlii]. • Observational studies are to be completed and need to be done frequently during the migration period to estimate MUD • MUD of >5000 or >3000 with the presence of Painted Ladies or Red Admiral's is to be considered significant. • SWHMiST[cxlix] Index #16 provides development effects and mitigation measures.	Subject property is not located within 5km of Lake Ontario. **Not SWH.**
Landbird Migratory Stopover Areas					
Sites with a high diversity of species as well as high number are most significant	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.	All Ecosites associated with these ELC Community Series: FOC FOM FOD SWC SWM SWD	Woodlots need to be >10 ha[i] in size and within 5km [iv, v, vi, vii, viii, ix, x, xi, xii, xiii, xiv, xv] of Lake Ontario. • If multiple woodlands are located along the shoreline, those woodlands <2km from Lake Ontario are more significant[cxlix] • Sites have a variety of habitats; forest, grassland and wetland complexes[cxlix]. • The largest sites are more significant[cxlix] • Woodlots and forest fragments are important habitats to migrating birds[ccxviii], these features located	Studies confirm: • 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:	Subject property is not located within 5km of Lake Ontario. **Not SWH.**

Significant Wildlife Habitat Assessment: Ecoregion 6E.

Table 1. Characteristics of Seasonal Concentration Areas

Rationale	Wildlife Species	Candidate SWH		Confirmed SWH	Study Area
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	Assessment Details
	Schedule 7: Specially Protected Birds (Raptors)		along the shore and located within 5km of Lake Ontario are Candidate SWH[cxlviii]. Information Sources • Bird Studies Canada • Ontario Nature • Local birders and naturalist club • Ontario Important Bird Areas (IBA) Program	Guidelines for Wind Power Projects"[ccxi] • SWHMiST[cxlix] Index #9 provides development effects and mitigation measures.	
Deer Yarding Areas					
Winter habitat for deer is considered to be the main factor for northern deer populations. In winter, deer congregate in "yards" to survive severe winter conditions. Deer yards typically have a long history of annual use by deer, yards typically represent 10-15% of an areas summer range.	White-tailed Deer	Note: OMNRF 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	• Deer yarding 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 20cm, most of the deer will have moved here. If the snow is light and fluffy, deer may continue to use this area until 30cm 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 the Stratum II area 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%[cxciv]. • OMNRF determines deer yards following methods outlined in "Selected Wildlife and Habitat Features: Inventory Manual"[cxcv] • Woodlots with high densities of	No Studies Required: • Snow depth and temperature are the greatest influence on deer use of winter yards. Snow depths > 40cm for more than 60 days in a typically winter are minimum criteria for a deer yard to be considered as SWH[lvi, lvii, lviii, lix, lx, i]. • Deer Yards are mapped by OMNRF District offices. Locations of Core or Stratum 1 and Stratum 2 Deer yards considered significant by OMNRF will be available at local MNRF offices or via Land Information Ontario (LIO). • 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. MNRF will complete these field investigations[cxcv]. • If a SWH is determined for Deer Wintering Area or if a proposed development is within Stratum II yarding area then Movement Corridors are to be considered as outlined in Table 1.4.1 of this Schedule. • SWHMiST[cxlix] Index #2	Suitable deer yarding habitat is not present within the subject property. **Not SWH.**

Significant Wildlife Habitat Assessment: Ecoregion 6E.

Table 1. Characteristics of Seasonal Concentration Areas

Rationale	Wildlife Species	Candidate SWH		Confirmed SWH	Study Area
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	Assessment Details
			deer due to artificial feeding are not significant.	provides development effects and mitigation measures.	
Deer Winter Congregation Areas					
Deer movement during winter in the southern areas of Ecoregion 6E are not constrained by snow depth, however deer will annually congregate in large numbers in suitable woodlands to reduce or avoid the impacts of winter conditions[exlviii]	White-tailed Deer	All Forested Ecosites with these ELC Community Series: FOC FOM FOD SWC SWM SWD Conifer plantations much smaller than 50ha may also be used.	• Woodlots will typically be >100 ha in size. Woodlots <100ha may be considered as significant based on MNRF studies or assessment. • 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[cxlviii]. • 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[ccxxiv]. • Woodlots with high densities of deer due to artificial feeding are not significant. <u>Information Sources</u> • MNRF District Offices • LIO/NRVIS	Studies confirm: • Deer management is an MNRF responsibility, deer winter congregation areas considered significant will be mapped by MNRF[cxlviii]. • Use of the woodlot by white-tailed deer will be determined by MNRF, all woodlots exceeding the area criteria are significant, unless determined not to be significant by MNR[í]. • Studies should be completed during winter (Jan/Feb) when >20cm of snow is on the ground using aerial survey techniques[ccxxiv] , ground or road surveys, or a pellet count deer density survey[ccxxv]. • If a SWH is determined for Deer Wintering Area of if a proposed development is within Stratum II yarding area then Movement Corridors are to be considered as outlined in Table 1.4.1 of this Schedule. • SWHMiST[cxlix] Index #2 provides development effects and mitigation measures.	Suitable deer winter congregation areas are not present within the subject property. **Not SWH.**

Significant Wildlife Habitat Assessment: Ecoregion 6E.

Table 2. Characteristics of Rare Vegetation Communities

Rationale	Candidate SWH			Confirmed SWH	Study Area
	ELC Ecosite Codes	Habitat Description	Habitat Criteria and Information Sources	Defining Criteria	Assessment Details
Cliffs and Talus Slopes					
Cliffs and Talus Slopes are extremely rare habitats in Ontario.	Any ELC Ecosite within Community Series: TAO CLO TAS CLS TAT CLT	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. Information Sources • The Niagara Escarpment Commission has detailed information on location of these habitats. • OMNRF District • Natural Heritage Information Center (NHIC) has location information on their website • Local naturalist clubs • Conservation Authorities	• Confirm any ELC Vegetation Type for Cliffs or Talus Slopes[lxxviii] • SWHMiST[cxlix] Index #21 provides development effects and mitigation measures.	Ecosite is not present within the subject property. **Not SWH.**
Sand Barren					
Sand barrens are rare in Ontario and support rare species. Most Sand Barrens have been lost due to cottage development and forestry.	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%.	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%.	Any sand barren area, >0.5ha in size. Information Sources • OMNRF Districts. • Natural Heritage Information Center (NHIC) has location information on their website • Field naturalist clubs • Conservation Authorities	• Confirm any ELC Vegetation Type for Sand Barrens[lxxviii] • Site must not be dominated by exotic or introduced species (<50% vegetative cover exotics)[i]. • SWHMiST[cxlix] Index #20 provides development effects and mitigation measures.	Ecosite is not present within the subject property. **Not SWH.**
Alvar					
Alvars are extremely rare habitats in Ecoregion 6E. Most alvars in Ontario are in Ecoregion 6E and 7E. Alvars in 6E are small and highly localized just north of the Palaeozoic-	ALO1 ALS1 ALT1 FOC1 FOC2 CUM2 CUS2 CUT2-1 CUW2 Five Alvar Indicator Species:	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 is complex, with alternating periods of inundation and drought. Vegetation cover varies from sparse lichen-moss associations to grasslands and shrublands	An Alvar site > 0.5 ha in size[lxxv]. Information Sources • Alvars of Ontario (2000), Federation of Ontario Naturalists[lxxvi]. • Ontario Nature – Conserving Great Lakes Alvars[ccviii]. • Natural Heritage Information Center (NHIC) has location information on their website • Field Naturalist clubs • Conservation Authorities	Field studies identify four of the five Alvar indicator species[lxxv, cxlix] at a Candidate Alvar site is Significant. • Site must not be dominated by exotic or introduced species (<50% vegetative cover are exotics sp.). • The alvar must be in excellent condition and fit in with surrounding landscape with few conflicting land uses[lxxv].	Ecosite is not present within the subject property. **Not SWH.**

Significant Wildlife Habitat Assessment: Ecoregion 6E.

Table 2. Characteristics of Rare Vegetation Communities

Rationale	Candidate SWH			Confirmed SWH	Study Area
	ELC Ecosite Codes	**Habitat Description**	**Habitat Criteria and Information Sources**	**Defining Criteria**	**Assessment Details**
Precambrian contact.	1) Carex crawei 2) Panicum philadelphicum 3) Eleochairs compressa 4) Scutellaria parvula 5) Trichostema branchiatum These indicator species are very specific to Alvars within Ecoregion 6E	and comprising a number of characteristic or indicator plant. Undisturbed alvars can be phyto- and zoo geographically 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[lxxviii].		• SWHMiST[cxlix] Index #17 provides development effects and mitigation measures.	
Old Growth Forest					
Due to historic logging practices, extensive old growth forest is rare in the Ecoregion. Interior habitat provided by old growth forests is required by many wildlife species.	Forest Community Series: FOD FOC FOM SWD SWC SWM	Old Growth forests are characterized by heavy mortality or turnover of over-storey trees resulting in a mosaic of gaps that encourage development of a multi-layered canopy and an abundance of snags and downed woody debris.	Woodland Stands areas 30ha or greater in size or with at least 10 ha interior habitat assuming 100m buffer at edge of forest Í. Information Sources • OMNRF Forest Resource Inventory mapping • OMNRF Forester, Ecologist or Biologist • Field Local naturalist clubs • Conservation Authorities • Sustainable Forestry License (SFL) companies will possibly know locations through field operations. • Municipal forestry departments	Field Studies will determine: • If dominant trees species of the ecosite are >140 years old, then stand is Significant Wildlife Habitat[cxlviii] • The stand will have experienced no recognizable forestry activities[cxlviii] • The area of Forest Ecosites combined to make up the stand is the SWH. • Determine ELC Vegetation Type for forest stand[lxxviii] • SWHDSS[cxlix] Index #23 provides development effects and mitigation measures.	Ecosite is not present within the subject property. **Not SWH.**
Tallgrass Prairie					
Tallgrass Prairies are extremely rare habitats in Ontario.	TPO1 TPO2	A Tallgrass Prairie has ground cover dominated by prairie grasses. An open Tallgrass Prairie habitat has < 25% tree cover.	• 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. <u>Information Sources</u> • OMNR Districts • Natural Heritage Information Center (NHIC) has location information available on their website • Field naturalists clubs • Conservation Authorities	Field studies confirm one or more of the Prairie indicator species listed in[lxxv] Appendix N should be present. Note: Prairie plant spp. list from Ecoregion 6E should be used[cxlviii]. • Area of the ELC Ecosite is the SWH • Site must not be dominated by exotic or introduced species (<50% vegetative cover exotics). • SWHMiST[cxlix] Index #19 provides development effects and mitigation measures.	Ecosite is not present within the subject property. **Not SWH.**

Significant Wildlife Habitat Assessment: Ecoregion 6E.

Table 2. Characteristics of Rare Vegetation Communities

Rationale	Candidate SWH			Confirmed SWH	Study Area
	ELC Ecosite Codes	Habitat Description	Habitat Criteria and Information Sources	Defining Criteria	Assessment Details
Savannah					
Savannahs are extremely rare habitats in Ontario.	TPS1 TPS2 TPW1 TPW2 CUS2	A Savannah is a tallgrass prairie habitat that has tree cover between 25 – 60%.	• 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. Information Sources • Natural Heritage Information Center (NHIC) has location information on their website • OMNRF Ecologists • Field naturalists clubs • Conservation Authorities	Field studies confirm one or more of the Savannah indicator species listed in[lxxv] Appendix N should be present. Note: Savannah plant spp. list from Ecoregion 6E should be used[cxlviii]. • Area of the ELC Ecosite is the SWH. • Site must not be dominated by exotic or introduced species (<50% vegetative cover exotics sp.). • SWHMiST[cxlix] Index #18 provides development effects and mitigation measures.	Ecosite is not present within the subject property. **Not SWH.**
Other Rare Vegetation Communities					
Plant communities that often contain rare species which depend on the habitat for survival.	Provincially Rare S1, S2 and S3 vegetation communities are listed in Appendix M of the SWHTG[cxlviii]. Any ELC Ecosite Code that has a possible ELC Vegetation Type that is Provincially Rare is Candidate SWH.	Rare Vegetation Communities may include beaches, fens, forest, marsh, barrens, dunes and swamps.	ELC Ecosite codes that have the potential to be a rare ELC Vegetation Type as outlined in appendix M[cxlviii] The OMNR/NHIC will have up to date listing for rare vegetation communities. Information Sources • Natural Heritage Information Center (NHIC) has location information available on their website • OMNRF Districts • Field naturalists clubs • Conservation Authorities	Field studies should confirm if an ELC Vegetation Type is a rare vegetation community based on listing within Appendix M of SWHTG[cxlviii]. • Area of the ELC Vegetation Type polygon is the SWH. • SWHMiST[cxlix] Index #37 provides development effects and mitigation measures.	No rare vegetation communities are present within the subject property. **Not SWH.**

Significant Wildlife Habitat Assessment: Ecoregion 6E.

Table 3. Characteristics of Specialized Wildlife Habitat

Rationale	Wildlife Species	Candidate SWH		Confirmed SWH	Study Area
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	Assessment Details
Waterfowl Nesting Area					
Important to local waterfowl populations, sites with greatest number of species and highest number of individuals are significant.	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	A waterfowl nesting area extends 120m[cxlix] 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 120m of each individual wetland where waterfowl nesting is known to occur[cxlix]. • Upland areas should be at least 120m wide so that predators such as raccoons, skunks, and foxes have difficulty finding nests. • Wood Ducks and Hooded Mergansers utilize large diameter trees (>40cm dbh) in woodlands for cavity nest sites. <u>Information Sources</u> • Ducks Unlimited staff may know the locations of particularly productive nesting sites. • OMNRF Wetland Evaluations for indication of significant waterfowl nesting habitat. • Reports and other information available from CAs	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"[ccxi] • 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 120m[cxlviii] from the wetland and will provide enough habitat for waterfowl to successfully nest. • SWHMiST[cxlix] Index #25 provides development effects and mitigation measures.	Suitable nesting habitat is not present within the subject property. **Not SWH.**
Bald Eagle and Osprey Nesting, Foraging and Perching Habitat					
Nest sites are fairly uncommon in Eco-region 6E are used annually by these species. Many suitable nesting locations may be lost due to increasing shoreline development pressures and scarcity of habitat.	Osprey <u>Special Concern</u>: Bald Eagle	ELC Forest Community Series: FOD, FOM, FOC, SWD, SWM and SWC directly adjacent to riparian areas – rivers, lakes, ponds and wetlands	• Nests are associated with lakes, ponds, rivers or wetlands along forested shorelines, islands, or on structures over water. • Osprey nests are usually at the top a tree whereas Bald Eagle nests are typically in super canopy trees in a notch within the tree's canopy. • Nests located on man-made objects are not to be included as SWH (e.g. telephone poles and constructed nesting platforms).	Studies confirm the use of these nests by: • One or more active Osprey or Bald Eagle nests in an area[cxlviii]. • 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 300m radius around the nest or the contiguous woodland stand is the	Suitable habitat is not present within the subject property. **Not SWH.**

Table 3. Characteristics of Specialized Wildlife Habitat

Rationale	Wildlife Species	Candidate SWH		Confirmed SWH	Study Area
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	Assessment Details
			Information Sources • Natural Heritage Information Center (NHIC) compiles all known nesting sites for Bald Eagles in Ontario. • MNRF values information (LIO/NRVIS) will list known nesting locations. Note: data from NRVIS is provided as a point and does not represent all the habitat. • Nature Counts, Ontario Nest Records Scheme data. • OMNRF Districts • Sustainable Forestry License (SFL) companies will identify additional nesting locations through field operations. • Check the Ontario Breeding Bird Atlas[ccv] or Rare Breeding Birds in Ontario for species documented • Reports and other information available from CAs. • Field naturalists clubs	SWHccvii, maintaining undisturbed shorelines with large trees within this area is important[cxlviii]. • For a Bald Eagle the active nest and a 400-800m radius around the nest is the SWH[cvi], ccvii. 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[cvi]. • To be significant a site must be used annually. When found inactive, the site must be known to be inactive for >3 years or suspected of not being used for >5 years before being considered not significant[ccvii] • 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"[ccxi] • SWHMiST[cxlix] Index #26 provides development effects and mitigation measures	
Woodland Raptor Nesting Habitat					
Nests sites for these species are rarely identified; these area sensitive habitats and are often used annually by these species.	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.	All natural or conifer plantation woodland/forest stands >30ha with >10ha of interior habitat[lxxxviii, lxxxix, xc, xci, xciii, xciv, xcv, xcvi, cxxxiii]. Interior habitat determined with a 200m buffer[cxlviii]. • 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 Cooper's hawk nest along forest edges sometimes on peninsulas or small off-shore islands. • In disturbed sites, nests may be	Studies confirm: • Presence of 1 or more active nests from species list is considered significant[cxlviii]. • Red-shouldered Hawk and Northern Goshawk – a 400m radius around the nest or 28ha area of habitat is the SWH[ccvii]. • Barred Owl – a 200m radius around the nest is the SWH[ccvii]. • Broad-winged Hawk and Coopers Hawk – a 100m radius around the nest is the SWH[ccvii]. • Sharp-shinned Hawk – a 50m radius around the nest is the	Suitable habitat is not present within subject property. **Not SWH.**

Significant Wildlife Habitat Assessment: Ecoregion 6E.

Table 3. Characteristics of Specialized Wildlife Habitat

Rationale	Wildlife Species	Candidate SWH		Confirmed SWH	Study Area
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	Assessment Details
			used again, or a new nest will be in close proximity to old nest. Information Sources • OMNRF • Check the Ontario Breeding Bird Atlas[ccv] or Rare Breeding Birds in Ontario for species documented. • Check data from Bird Studies Canada • Reports and other information available from CAs	SWH[ccvii]. • 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. • SWHMiST[cxlix] Index #27 provides development effects and mitigation measures.	
Turtle Nesting Areas					
These habitats are rare and when identified will often be the only breeding site for local populations of turtles	Midland Painted Turtle Special Concern: Northern Map Turtle Snapping Turtle	Exposed mineral soil (sand or gravel) areas adjacent (<100m)[cxlviii] or within the following ELC Ecosites: MAS1 MAS2 MAS3 SAS1 SAM1 SAF1 BOO1 FEO1	• 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. Information Sources • Use Ontario Soil Survey reports and maps to help find suitable substrate for nesting turtles (well-drained sands and fine gravels). • Check the Ontario Herpetofaunal Summary Atlas records or other similar atlases for uncommon turtles; location information may help to find potential nesting habitat for them. • Natural Heritage Information Center (NHIC)	Studies confirm: • Presence of 5 or more nesting Midland Painted Turtles • One or more Northern Map Turtle or Snapping Turtle nesting is a SWH[l] • 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 dependent on slope, riparian vegetation and adjacent land use is the SWH[cxlviii]. • Travel routes from wetland to nesting area are to be considered within the SWH[cxlix]. • Field investigations should be conducted in prime nesting season typically late spring to early summer. Observational studies observing the turtles nesting is a recommended method. • SWHMiST[cxlix] Index #28 provides development effects and mitigation measures for turtle nesting habitat.	Soils within subject property are not suitable for turtle nesting habitat. **Not SWH**

Significant Wildlife Habitat Assessment: Ecoregion 6E.

Table 3. Characteristics of Specialized Wildlife Habitat

Rationale	Wildlife Species	Candidate SWH		Confirmed SWH	Study Area
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	Assessment Details
			• Field Naturalist clubs and landowners		
Seeps and Springs					
Seeps/Springs are typical of headwater areas and are often at the source of coldwater streams.	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.	Any forested area (with <25% meadow/field/pasture) within the headwaters of a stream or river system[cxvii, cxlix]. • Seeps and springs are important feeding and drinking areas especially in the winter will typically support a variety of plant and animal species[cxix, cxx, cxxi, cxxii, cxiii, cxiv] Information Sources • Topographical Map • Thermography • Hydrological surveys conducted by CAs and MOE • Field naturalists clubs and landowners • Municipalities and Conservation Authorities may have drainage maps and headwater areas mapped.	Field Studies confirm: • Presence of a site with 2 or more seeps/springs should be considered SWH. • The area of a ELC forest ecosite containing the seeps/springs is the SWH. The protection of the recharge area considering the slope, vegetation, height of trees and groundwater condition need to be considered in delineation the habitat[cxlviii] • SWHMiST[cxlix] Index #30 provides development effects and mitigation measures	No seeps or springs were observed during the preliminary site investigation. **Not SWH.**
Wildlife Habitat: Amphibian Breeding Habitat (Woodland)					
These habitats are extremely important to amphibian biodiversity within a landscape and often represent the only breeding habitat for local amphibian populations.	Eastern Newt Blue-spotted Salamander Spotted Salamander Gray Treefrog Spring Peeper Western Chorus Frog Wood Frog	All Ecosites associated with these ELC Community Series: FOC FOM FOD SWC SWM SWD Breeding pools within the woodland or the shortest distance from forest habitat are more significant because they are more likely to be used due to reduced risk to migrating amphibians.	• Presence of a wetland, pond or woodland pool (including vernal pools) >500m^2 (about 25m diameter) [ccvii] within or adjacent (within 120m) to a woodland (no minimum size)[clxxxii, lxiii, lxv, lxvi, lxvii, lxviii, lxix, lxx] Some small wetlands may not be mapped and may be important breeding pools for amphibians. • Woodlands with permanent ponds or those containing water in most years until mid-July are more likely to be used as breeding habitat[cxlviii] Information Sources • Ontario Herpetofaunal Summary Atlas (or other similar atlases) for records • Local landowners may also	Studies confirm: • Presence of breeding population of 1 or more of the listed newt/salamander species or 2 or more of the listed frog species with at least 20 individuals (adults or eggs masses)[lxxi] or 2 or more of the listed frog species with Call Level Codes of 3. • A combination of observational study and call count surveys[cviii] will be required during the spring March-June when amphibians are concentrated around suitable breeding habitat within or near the woodland/wetlands. • The habitat is the woodland area plus a 230m radius of woodland area[lxiii,lxv, lxvi, lxvii, lxviii, lxix,	Suitable habitat is not present within subject property. **Not SWH.**

Significant Wildlife Habitat Assessment: Ecoregion 6E.

Table 3. Characteristics of Specialized Wildlife Habitat

Rationale	Wildlife Species	Candidate SWH		Confirmed SWH	Study Area
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	Assessment Details
			provide assistance as they may hear spring-time choruses of amphibians on their property. • OMNRF District • OMNRF wetland evaluations • Field naturalist clubs • Canadian Wildlife Service Amphibian Road Call Survey • Ontario Vernal Pool Association: http://www.ontariovernalpools.org	[lxx, lxxi] if a wetland area is adjacent to a woodland, a travel corridor connecting the wetland to the woodland is the be included in the habitat. • SWHMiST[cxlix] Index #14 provides development effects and mitigation measures.	
Wildlife Habitat: Amphibian Breeding Habitat (Wetland)					
These habitats are extremely important to amphibian biodiversity within a landscape and often represent the only breeding habitat for local amphibian populations	Eastern Newt American Toad Spotted Salamander Four-toed Salamander Blue-spotted Salamander Gray Tree frog Western Chorus Frog Northern Leopard Frog Pickerel Frog Green Frog Mink Frog Bullfrog	ELC Community Classes SW, MA, FE, BO, OA and SA. Typically these wetland ecosites will be isolated (>120m) from woodland ecosites, however larger wetlands containing predominantly aquatic species (e.g. Bull Frog) may be adjacent to woodlands.	• Wetlands >500m2 (about 25m diameter)[ccvii] supporting high species diversity are significant; some small or ephemeral habitats may not be identified on MNRF mapping and could be important amphibian breeding habitats[clxxxiv]. • 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>Information Sources</u> • Ontario Herpetofaunal Summary Atlas (or other similar atlases) • Canadian Wildlife Service Amphibian Road Surveys and Backyard Amphibian Call Count. • OMNRF Districts and wetland evaluations • Reports and other information available from CAs.	Studies confirm: • Presence of breeding population of 1 or more of the listed newt/salamander species or 2 or more of the listed frog/toad species and with at least 20 individuals (adults or eggs masses)[lxxi, lxxiii], or 2 or more of the listed frog/toad species with Call Level Codes of 3. or; Wetland with confirmed breeding Bullfrogs are significant. • The ELC ecosite wetland area and the shoreline are the SWH. • A combination of observational study and call count surveys[cviii] will be required during spring March to June) when amphibians are concentrated around suitable breeding habitat within or near the wetlands. • If a SWH is determined for Amphibian Breeding Habitat (Wetlands) then Movement Corridors are to be considered as outlined in Table 1.4.1 of this Schedule. • SWHMiST[cxlix] Index #15 provides development effects and mitigation measures.	Targeted anuran surveys documented limited amounts of Gray Treefrog and Wester Chorus Frog within the study area. Surveys did not document more than 20 individuals or Call Level Code 3. **Not SWH.**
Woodland Area-Sensitive Bird Breeding Habitat					
Large, natural blocks of mature woodland habitat	Yellow-Bellied Sapsucker Red-breasted Nuthatch Veery	All Ecosites associated with these ELC Community Series:	• Habitats where interior forest breeding birds are breeding, typically large mature (>60 yrs	• Presence of nesting or breeding pairs of 3 or more of the listed wildlife species.	Suitable habitat does not exist within the subject property.

Significant Wildlife Habitat Assessment: Ecoregion 6E.

Table 3. Characteristics of Specialized Wildlife Habitat

Rationale	Wildlife Species	Candidate SWH		Confirmed SWH	Study Area
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	Assessment Details
within the settled areas of Southern Ontario are important habitats for area sensitive interior forest song birds.	Blue-headed Vireo Northern Parula Black-throated Green Warbler Blackburnian Warbler Black-throated Blue Warbler Ovenbird Scarlet Tanager Winter Wren Special Concern: Cerulean Warbler Canada Warbler	FOC FOM FOD SWC SWM SWD	old) forest stands or woodlots >30 ha.[cv, cxxxi, cxxxii, cxxxiii, cxxxiv, cxxv, cxxvi, cxxxvii, cxxxviii, cxxxix, cxl, cxli, cxlii, cxliii, cxliv, cxlv, cxlvi, cl, cli, clii, cliii, cliv, clv, clvii, clviii, clix] • Interior forest habitats are at least 200m from forest edge habitat. Information Sources • Local bird clubs • Canadian Wildlife Service (CWS) for the location of forest bird monitoring. • Bird studies Canada conducted a 3-year study of 287 woodlands to determine the effects of forest fragmentation on forest birds and to greatest value to interior species • Reports and other information available from CAs.	• Note: any site with breeding Cerulean Warblers or Canada Warblers is to be considered SWH. • Conduct field investigations 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"[ccxi] • SWHMiST[cxlix] Index #34 provides development effects and mitigation measures.	**Not SWH.**

Significant Wildlife Habitat Assessment: Ecoregion 6E.

Table 4. Characteristics of Habitat for Species of Conservation Concern

Rationale	Wildlife Species	Candidate SWH		Confirmed SWH	Study Area
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	Assessment Details
Marsh Bird Breeding Habitat					
Wetlands for these bird species are typically productive and fairly rare in Southern Ontario landscapes.	American Bittern Virginia Rail Sora Common Gallinule American Coot Pied-billed Grebe Marsh Wren Sedge Wren Common Loon Sandhill Crane Green Heron Trumpeter Swan <u>Special Concern</u>: Black Tern Yellow Rail	MAM1 MAM2 MAM3 MAM4 MAM5 MAM6 SAS1 SAM1 SAF1 FEO1 BOO1 For Green Heron: All SW, MA and CUM1 sites.	• Nesting occurs in wetlands • All wetland habitat is to be considered as long as there is shallow water with emergent aquatic vegetation present[cxxiv]. • 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. <u>Information Sources</u> • Contact OMNRF, wetland evaluations are a good source of information. • Field naturalist clubs • Natural Heritage Information Center (NHIC) Records • Reports and other information available from CAs. • Ontario Breeding Bird Atlas[ccv]	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[i]. • Note: any wetland with breeding of 1 or more Black Terns, Trumpeter Swan, Green Heron or Yellow Rail is SWH[i]. • 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"[ccxi]. • SWHMiST[cxlix] Index #35 provides development effects and mitigation measures	Suitable habitat does not exist within the subject property. **Not SWH.**
Open Country Bird Breeding Habitat					
This wildlife habitat is declining throughout Ontario and North America. Species such as the Upland Sandpiper have declined significantly the past 40 years based on CWS (2004) trend records.	Upland Sandpiper Grasshopper Sparrow Vesper Sparrow Northern Harrier Savannah Sparrow <u>Special Concern</u>: Short-eared Owl	CUM1 CUM2	Large grassland areas (includes natural and cultural fields and meadows) >30 ha [clx, clxi, clxii, clxiii, clxiv, clxv, clxvi, clxvii, clxviii, clxix]. Grasslands not Class 1 or 2 agricultural lands, and not being actively used for farming (i.e. no row cropping or intensive hay or livestock pasturing in the last 5 years)[i]. Grassland sites considered significant should have a history of longevity, either abandoned fields, mature hayfields and pasturelands that are at least 5 years or older. The Indicator bird species are area sensitive requiring larger grassland areas than the common	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 Owl 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"[ccxi].	No grasslands of adequate size are present or contiguous with the subject property. **Not SWH.**

Significant Wildlife Habitat Assessment: Ecoregion 6E.

Table 4. Characteristics of Habitat for Species of Conservation Concern

Rationale	Wildlife Species	Candidate SWH		Confirmed SWH	Study Area
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	Assessment Details
			grassland species. Information Sources • Agricultural land classification maps, Ministry of Agriculture. • Ask local birders • Ontario Breeding Bird Atlas[ccv] • Reports and other information available from CAs.	• SWHMiST[cxlix] Index #32 provides development effects and mitigation measures.	
Shrub/Early Successional Bird Breeding Habitat					
This wildlife habitat is declining throughout Ontario and North America. The Brown Thrasher has declined significantly over the past 40 years based on CWS (2004) trend records cxcix.	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.	Large field areas succeeding to shrub and thicket habitats>10ha[clxiv] 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)[i]. Shrub thicket habitats (>10 ha) are most likely to support and sustain a diversity of these species [clxxiii]. Shrub and thicket habitat sites considered significant should have a history of longevity, either abandoned fields or pasturelands. Information Sources • Agricultural land classification maps Ministry of Agriculture Local bird clubs • Ontario Breeding Bird Atlas[ccv] • Reports and other information available from CAs	Field Studies confirm: • Presence of nesting or breeding of 1 of the indicator species and at least 2 of the common species[i]. • A field with breeding Yellow-breasted Chat or Golden-winged Warbler is to be considered as Significant Wildlife Habitat. • The area of the SWH is the contiguous ELC ecosite field/thicket 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"[ccxi] • SWHMiST[cxlix] Index #33 provides development effects and mitigation measures.	Though cultural thicket (CUT) exists within the subject property, the habitat is dominated by European Buckthorn (*Rhamnus cathartica*) and does not provide adequate breeding habitat. **Not SWH.**
Terrestrial Crayfish					
Terrestrial Crayfish are only found within SW Ontario in Canada and their habitats are very rare. [ccii]	Chimney or Digger Crayfish: (*Fallicambarus fodiens*) Devil Crawfish or Meadow Crayfish: (*Cambarus Diogenes*)	MAM1 MAM2 MAM3 MAM4 MAM5 MAM6 MAS1 MAS2 MAS3 SWD	Wet meadow and edges of shallow marshes (no minimum size) identified should be surveyed for terrestrial crayfish. • Constructs burrows in marshes, mudflats, meadows, the ground can't be too moist. Can often be found far from water. • Both species are a semi-terrestrial burrower which spends	Studies Confirm: • Presence of 1 or more individuals of species listed or their chimneys (burrows) in suitable marsh meadow or terrestrial sites[cci] • Area of ELC Ecosite or an ecoelement area of meadow marsh or swamp within the larger ecosite area is the SWH	No crayfish chimneys were observed within or adjacent to the floodplain. **Not SWH.**

Significant Wildlife Habitat Assessment: Ecoregion 6E.

Table 4. Characteristics of Habitat for Species of Conservation Concern

Rationale	Wildlife Species	Candidate SWH		Confirmed SWH	Study Area
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	Assessment Details
		SWT SWM	most of its life within burrows consisting of a network of tunnels. Usually the soil is not too moist so that the tunnel is well formed. Information Sources • Information sources from "Conservation Status of Freshwater Crayfishes" by Dr. Premek Hamr for the WWF and CNF March 1998	• Surveys should be done April to August during in temporary or permanent water Note the presence of burrows or chemistry are often the only indicator of presence, observance or collection of individuals is very difficult[cci] • SWHMiST[cxlix] Index #36 provides development effects and mitigation measures.	
Special Concern and Rare Wildlife Species					
These species are quite rare or have experienced significant population declines in Ontario.	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) within a 1 or 10km grid. Older element occurrences were recorded prior to GPS being available, therefore location information may lack accuracy.	When an element occurrence is identified within a 1 or 10 km grid for a Special Concern or provincially Rare species; linking candidate habitat on the site needs to be completed to ELC Ecosites[lxxviii]. <u>Information Sources</u> • Natural Heritage Information Centre (NHIC) will have the Special Concern and Provincially Rare (S1-S3, SH) species lists with element occurrences data. • NHIC Website: "Get Information": http://nhic.mnr.gov.on.ca • Ontario Breeding Bird Atlas[ccv] • Expert advice should be sought as many of the rare spp. have little information available about their requirements.	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. • The area of the habitat to the finest ELC scale that protects the habitat form and function is the SWH, this must be delineated through detailed field studies. The habitat needs to be easily mapped and cover an important life stage component for a species e.g. specific nesting habitat or foraging habitat. • SWHMiST[cxlix] Index #37 provides development effects and mitigation measures.	Western Chorus Frog was also documented within the study area, associated with a wetland pocket or tributary to Salt Creek to the west of the subject property. Snapping Turtle habitat remains candidate within Salt Creek. However, no overwintering or nesting habitat is present. Salt Creek likely may provide a movement corridor for Snapping Turtle. **Confirmed SWH.**

Significant Wildlife Habitat Assessment: Ecoregion 6E.

Table 5. Characteristics of Animal Movement Corridors

Rationale	Wildlife Species	Candidate SWH		Confirmed SWH	Study Area
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	Assessment Details
Amphibian Movement Corridors					
Movement corridors for amphibians moving from their terrestrial habitat to breeding habitat can be extremely important for local populations.	Eastern Newt Blue-spotted Salamander Spotted Salamander Gray Treefrog Spring Peeper Western Chorus Frog Northern Leopard Frog Pickerel Frog Green Frog Mink Frog Bullfrog	Corridors may be found in all ecosites associated with water. • Corridors will be determined based on identifying the significant breeding habitat for these species in Table 1.1.	Movement corridors between breeding habitat and summer habitat [clxxiv, clxxv, clxxvi, clxxvii, clxxviii, clxxix, clxxx, clxxxi]. Movement corridors must be determined when Amphibian breeding habitat is confirmed as SWH from Table 1.2.2 (Amphibian Breeding Habitat – Wetland) of this Schedule[i]. <u>Information Sources</u> • MNRF District Office • Natural Heritage Information Center NHIC • Reports and other information available from CAs • Field Naturalist Clubs	• 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, with several layers of vegetation. Cooridors unbroken by roads, waterways or bodies, and undeveloped areas are most significant[cxlix]. • Corridors should have at least 15m of vegetation on both sides of waterway [cxlix] or be up to 200m wide[cxlix] of woodland habitat and with gaps <20m [cxlix]. • Shorter corridors are more significant than longer corridors, however amphibians must be able to get to and from their summer and breeding habitat[cxlix]. • SWHMiST[cxlix] Index #40 provides development effects and mitigation measures.	No amphibian breeding habitat has been confirmed within the subject property. **Not SWH.**
Deer Movement Corridors					
Corridors important for all species to be able to access seasonally important life-cycle habitats or to access new habitat for dispersing individuals by minimizing their vulnerability while travelling.	White-tailed Deer	Corridors may be found in all forested ecosites. A Project Proposal in Stratum II Deer Wintering Area has potential to contain corridors.	Movement corridor must be determined when Deer Wintering Habitat is confirmed as SWH from Table 1.1 of this schedule[i]. • A deer wintering habitat identified by the OMNRF as SWH in Table 1.1 of this Schedule will have corridors that the deer use during fall migration and spring dispersion [clxxxii, clxxxiii, cxlix, cxciv]. • Corridors typically follow riparian areas, woodlots, areas of physical geography (ravines, or ridges). <u>Information Sources</u> • MNRF District Office • Natural Heritage Information Center (NHIC) • Reports and other information available from CAs • Field Naturalist Clubs	• Studies must be conducted at the time of year when deer are migrating or moving to and from winter concentration areas. • Corridors that lead to a deer wintering yard should be unbroken by roads and residential areas. • Corridors should be at least 200m wide[cxlix] with gaps <20m[cxlix] and if following riparian area with at least 15m of vegetation on both sides of waterway[cxlix] . Shorter corridors are more significant than longer corridors[cxlix] • SWHMiST[cxlix] Index #39 provides development effects and mitigation measures.	No deer wintering habitat has been confirmed within the subject property. **Not SWH.**

Significant Wildlife Habitat Assessment: Ecoregion 6E.

Table 6. Exceptions for Ecodistricts within Ecoregion 6E.

Rationale	Wildlife Species	Candidate SWH			Confirmed SWH	Study Area
		ELC Ecosites	Habitat Description	Habitat Criteria and Information Sources	Defining Criteria	Assessment Details
Mast Producing Areas (EcoDistrict 6E-14)						
The Bruce Peninsula has an isolated and distinct population of black bears. Maintenance of large woodland tracks with mast producing tree species is important for bears. [clxxxvi, ccxvii]	Black Bear	All Forested habitat represented by ELC Community Series: FOM FOD	• Black bears require forested habitat that provides cover, winter hibernation sites, and mast producing tree species. [clxxxv, clxxxvii, clxxxviii, clxxxix, cxc, cxci, cxcii, cxciii, ccxvii] • Forested habitats need to be large enough to provide cover and protection for black bears [ccxvii].	Woodland ecosites >30ha with mast-producing tree species, either soft (cherry) or hard (oak and beech), Information Sources Important forest habitat for black bears may be identified by OMNRF.	• All woodlands > 30 ha with a 50% composition of these ELC Vegetation Types are considered significant: FOM1-1 FOM2-1 FOM3-1 FOD1-1 FOD1-2 FOD2-1 FOD2-2 FOD2-3 FOD2-4 FOD4-1 FOD5-2 FOD5-3 FOD5-7 FOD6-5 • SWHMiST [cxlix] Index #3 provides development effects and mitigation measures.	Suitable habitat is not present within the subject property. **Not SWH.**
Lek (EcoDistrict 6E-17)						
Sharp-tailed grouse only occur on Manitoulin Island in Ecoregion 6E, Leks are an important habitat to maintain their population	Sharp-tailed Grouse	CUM CUS CUT	• The lek or dancing ground consists of bare, grassy or sparse shrubland. There is often a hill or rise in topographyccxix. • Leks are typically a grassy field/meadow >15h with adjacent shrublands and >30ha with adjacent deciduous woodland. Conifer trees within 500m are not tolerated. ccxix	Grasslands (field/meadow) are to be >15ha when adjacent to shrubland and >30ha when adjacent to deciduous woodland[ccxix]. • Grasslands are to be undisturbed with low intensities of agriculture (light grazing or late haying) • Leks will be used annually if not destroyed by cultivation or invasion by woody plants or tree planting[ccxix] Information Sources • OMNRF district office • Bird watching clubs • Local landowners • Ontario Breeding Bird Atlas	Studies confirming lek habitat are to be completed from late March to June. • Any site confirmed with sharp-tailed grouse courtship activities is considered significant • The field/meadow ELC ecosites plus a 200 m radius area with shrub or deciduous woodland is the lek habitat • SWHMiST [cxlix] Index #32 provides development effects and mitigation measures	Suitable habitat is not present within the subject property. **Not SWH.**

Appendix IV
Vascular Flora Species Reported from the Study Area

Plant Species Reported from the Study Area - Airport Road, Caledon EIS (Project #2849A)

Scientific Name	Common Name	SRANK	SARO	COSEWIC	SARA	SARA Schedule	TRCA	NHIC Data*	NRSI Observed	CUT1	MAM2-2	Hedgerow
		NDMNRF 2021	MECP 2022	Government of Canada 2021	Government of Canada 2021	Government of Canada 2021	TRCA 2008	NDMNRF 2022	NRSI Results From 2022-2023			
Pteridophytes	**Ferns & Allies**											
Equisetaceae	**Horsetail Family**											
Equisetum arvense	Field Horsetail	S5					L5		X	X		
Equisetum hyemale	Common Scouring-rush	S5							X	X		
Thelypteridaceae	**Beech Fern Family**											
Thelypteris palustris	Marsh Fern	S5							X		X	
Gymnosperms	**Conifers**											
Pinaceae	**Pine Family**											
Picea glauca	White Spruce	S5					L3		X	X		
Pinus strobus	Eastern White Pine	S5					L4		X	X		
Tsuga canadensis	Eastern Hemlock	S5					L4		X	X		
Dicotyledons	**Dicots**											
Aceraceae	**Maple Family**											
Acer negundo	Manitoba Maple	S5					L+?		X	X	X	
Acer saccharinum	Silver Maple	S5					L4		X	X		
Acer saccharum	Sugar Maple	S5					L5		X	X		
Anacardiaceae	**Sumac or Cashew Family**											
Rhus typhina	Staghorn Sumac	S5					L5		X	X		
Toxicodendron radicans	Poison Ivy	S5							X	X		
Apiaceae	**Carrot or Parsley Family**											
Daucus carota	Wild Carrot	SE5					L+		X		X	X
Asclepiadaceae	**Milkweed Family**											
Asclepias syriaca	Common Milkweed	S5					L5		X	X		
Asteraceae	**Composite or Aster Family**											
Achillea millefolium	Common Yarrow	SE5?					L+		X	X		X
Ambrosia artemisiifolia	Common Ragweed	S5					L5		X	X	X	
Arctium lappa	Great Burdock	SE5					L+		X	X	X	
Arctium minus	Common Burdock	SE5							X	X		
Bidens vulgata	Tall Beggarticks	S5					L4		X	X	X	
Cichorium intybus	Chicory	SE5					L+		X		X	
Cirsium arvense	Creeping Thistle	SE5					L+		X	X	X	X
Cirsium vulgare	Bull Thistle	SE5					L+		X	X	X	
Erigeron hyssopifolius	Daisy Fleabane	S5							X	X		
Euthamia graminifolia	Grass-leaved Goldenrod	S5					L5		X	X		
Inula helenium	Elecampane	SE5					L+		X	X	X	X
Leucanthemum vulgare	Oxeye Daisy	SE5					L+		X		X	
Solidago altissima	Tall Goldenrod	S5							X		X	
Solidago canadensis	Canada Goldenrod	S5					L5		X	X	X	
Sonchus arvensis	Field Sow-thistle	SE5							X		X	
Symphyotrichum lanceolatum	Panicled Aster	S5					L5		X	X	X	
Symphyotrichum lateriflorum	Calico Aster	S5							X	X	X	
Symphyotrichum novae-angliae	New England Aster	S5					L5		X	X	X	
Tanacetum vulgare	Common Tansy	SE5					L+		X	X		
Taraxacum officinale	Common Dandelion	SE5					L+		X	X	X	X
Tussilago farfara	Colt's-foot	SE5					L+		X		X	
Balsaminaceae	**Touch-me-not Family**											
Impatiens capensis	Spotted Jewelweed	S5					L5		X		X	
Brassicaceae	**Mustard Family**											
Alliaria petiolata	Garlic Mustard	SE5					L+		X	X		
Hesperis matronalis	Dame's Rocket	SE5					L+		X		X	
Nasturtium officinale	Watercress	SE							X		X	
Turritis glabra	Tower-mustard	S5							X		X	

Caprifoliaceae	**Honeysuckle Family**											
Lonicera morrowii	Morrow's Honeysuckle	SE3					L+		X	X		X
Lonicera tatarica	Tatarian Honeysuckle	SE5					L+		X	X		X
Lonicera x bella	*(Lonicera morrowii X Lonicera tatarica)*	SNA					L+		X	X		
Viburnum lentago	Nannyberry	S5					L5		X			X
Viburnum opulus	Cranberry Viburnum	S5							X	X		
Caryophyllaceae	**Pink Family**											
Dianthus armeria	Deptford Pink	SE5					L+		X	X		
Spergularia media	Greater Sea-spurrey	SE3					L+		X			
Chenopodiaceae	**Goosefoot Family**											
Chenopodium album	White Goosefoot	SE5							X		X	
Clusiaceae	**St. John's-wort Family**											
Hypericum punctatum	Spotted St. John's-wort	S5					L3		X	X		
Cucurbitaceae	**Gourd Family**											
Cucumis sativus	Garden Cucumber	SE1					L+		X		X	
Dipsacaceae	**Teasel Family**											
Dipsacus fullonum	Common Teasel	SE5							X		X	
Euphorbiaceae	**Spurge Family**											
Euphorbia cyparissias	Cypress Spurge	SE5					L+		X			X
Fabaceae	**Pea Family**											
Lotus corniculatus	Garden Bird's-foot Trefoil	SE5					L+		X	X		X
Medicago lupulina	Black Medic	SE5					L+		X		X	
Melilotus albus	White Sweet-clover	SE5							X		X	
Securigera varia	Common Crown-vetch	SE5							X		X	
Trifolium pratense	Red Clover	SE5					L+		X		X	
Vicia cracca	Tufted Vetch	SE5					L+		X	X		X
Geraniaceae	**Geranium Family**											
Geranium maculatum	Spotted Geranium	S5					L4		X	X		
Geranium robertianum	Herb-Robert	S5					L+?		X	X		
Juglandaceae	**Walnut Family**											
Juglans nigra	Black Walnut	S4?					L5		X	X		
Lamiaceae	**Mint Family**											
Lycopus americanus	American Water-horehound	S5					L4		X		X	
Prunella vulgaris	Self-heal	S5							X	X	X	
Lythraceae	**Loosestrife Family**											
Lythrum salicaria	Purple Loosestrife	SE5					L+		X		X	
Oleaceae	**Olive Family**											
Fraxinus americana	White Ash	S4					L5		X	X		
Fraxinus pennsylvanica	Green Ash	S4					L5		X	X		
Syringa vulgaris	Common Lilac	SE5					L+		X	X		
Onagraceae	**Evening-primrose Family**											
Circaea canadensis	Broad-leaved Enchanter's Nightshade	S5							X	X		
Oxalidaceae	**Wood Sorrel Family**											
Oxalis montana	Common Wood-sorrel	S5							X	X		
Papaveraceae	**Poppy Family**											
Chelidonium majus	Greater Celandine	SE5					L+		X	X		
Polygonaceae	**Smartweed Family**											
Rumex crispus	Curly Dock	SE5					L+		X	X	X	
Ranunculaceae	**Buttercup Family**											
Anemonastrum canadense	Canada Anemone	S5					L5		X	X	X	
Rhamnaceae	**Buckthorn Family**											
Rhamnus cathartica	Common Buckthorn	SE5					L+		X	X	X	X
Rosaceae	**Rose Family**											
Agrimonia gryposepala	Hooked Agrimony	S5					L5		X	X		
Crataegus mollis	Downy Hawthorn	S4S5					L+?		X			X
Crataegus monogyna	English Hawthorn	SE4					L+		X	X		X
Crataegus punctata	Dotted Hawthorn	S5					L5		X	X	X	
Fragaria vesca	Woodland Strawberry	S5							X	X		
Fragaria virginiana	Wild Strawberry	S5					L5		X	X	X	X

Geum fragarioides	Barren Strawberry	S5							X	X		
Geum urbanum	Wood Avens	SE3					L+		X	X	X	
Geum vernum	Spring Avens	S4							X	X		
Malus pumila	Common Apple	SE4					L+		X	X		X
Potentilla recta	Sulphur Cinquefoil	SE5					L+		X		X	
Prunus avium	Sweet Cherry	SE4					L+		X	X		
Prunus serotina	Black Cherry	S5					L5		X	X		
Prunus virginiana	Choke Cherry	S5					L5		X	X		X
Rosa canina	Dog Rose	SE2					L+		X			X
Rosa multiflora	Multiflora Rose	SE5					L+		X	X		
Rubus idaeus	Common Red Raspberry	S5							X	X		
Sorbus americana	American Mountain-ash	S5					LU		X			
Salicaceae	**Willow Family**											
Populus balsamifera	Balsam Poplar	S5					L5		X	X		
Populus tremuloides	Trembling Aspen	S5					L5		X	X		
Salix euxina	Crack Willow	SE							X	X	X	
Scrophulariaceae	**Figwort Family**											
Verbascum thapsus	Common Mullein	SE5					L+		X		X	
Solanaceae	**Nightshade Family**											
Solanum dulcamara	Bittersweet Nightshade	SE5					L+		X	X	X	
Tiliaceae	**Linden Family**											
Tilia americana	American Basswood	S5					L5		X	X		
Ulmaceae	**Elm Family**											
Ulmus americana	American Elm	S5					L5		X	X		X
Verbenaceae	**Vervain Family**											
Verbena hastata	Blue Vervain	S5					L5		X		X	
Violaceae	**Violet Family**											
Viola pubescens var. pubescens	Downy Yellow Violet	S5							X	X		
Viola sororia	Woolly Blue Violet	S5							X	X		
Vitaceae	**Grape Family**											
Parthenocissus quinquefolia	Virginia Creeper	S4?					L4		X	X		
Parthenocissus vitacea	Thicket Creeper	S5					L5		X	X		
Monocotyledons	**Monocots**											
Cyperaceae	**Sedge Family**											
Cyperus esculentus	Perennial Yellow Flatsedge	S5					L+?		X		X	
Hydrocharitaceae	**Frog's-bit Family**											
Elodea canadensis	Canada Waterweed	S5					L4		X		X	
Iridaceae	**Iris Family**											
Sisyrinchium montanum	Strict Blue-eyed-grass	S5					L3		X			X
Poaceae	**Grass Family**											
Bromus inermis	Smooth Brome	SE5							X		X	X
Dactylis glomerata	Orchard Grass	SE5					L+		X			X
Echinochloa muricata	Rough Barnyard Grass	S5							X		X	
Phalaris arundinacea	Reed Canary Grass	S5					L+?		X	X	X	
Phleum pratense	Common Timothy	SE5					L+		X	X		
Phragmites australis	Common Reed	SU							X		X	
Poa pratensis	Kentucky Bluegrass	S5							X	X		X
TOTAL								**0**	**112**	**76**	**50**	**23**

*NHIC Atlas Squares: 17NJ9552, 9553

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Appendix V
Bird Species Reported from the Study Area

Bird Species Reported from the Study Area - Airport Rd., Caledon EIS (Project #2849A)

Scientific Name	Common Name	SRANK	SARO	COSEWIC	SARA	SARA Schedule	TRCA Status	OBBA*	NHIC Data**	NRSI Observed: Highest Level of Breeding Evidence	BMB-001	BMB-002	BMB-003	BMB-004	BMB-005	BMB-006	Incidental Observations
		MNRF 2021	MECP 2022	Government of Canada 2021	Government of Canada 2021	Government of Canada 2021	TRCA 2019	BSC et al. 2006	NDMNRF 2022	NRSI 2022-2023							
Anatidae	**Ducks, Geese & Swans**																
Aix sponsa	Wood Duck	S5B, S3N					L4	CO									
Anas platyrhynchos	Mallard	S5					L5	CO		**OB**							OB
Branta canadensis	Canada Goose	S5					L5	CO									
Lophodytes cucullatus	Hooded Merganser	S5					L3	CO									
Phasianidae	**Partridges, Grouse & Turkeys**																
Bonasa umbellus	Ruffed Grouse	S5					L2	CO									
Meleagris gallopavo	Wild Turkey	S5					L3	CO									
Columbidae	**Pigeons & Doves**																
Columba livia	Rock Pigeon	SNA					L+	PR		**PO**			OB				PO
Zenaida macroura	Mourning Dove	S5					L5	PR		**PR**	PR			PO			OB
Cuculiformes	**Cuckoos & Anis**																
Coccyzus americanus	Yellow-billed Cuckoo	S4B					L3	CO									
Coccyzus erythropthalmus	Black-billed Cuckoo	S4S5B					L3	CO									
Apodidae	**Swifts**																
Chaetura pelagica	Chimney Swift	S3B	THR	T	T	Schedule 1	L4	PR									
Trochilidae	**Hummingbirds**																
Archilochus colubris	Ruby-throated Hummingbird	S5B					L4	PR									
Rallidae	**Rails, Gallinules & Coots**																
Rallus limicola	Virginia Rail	S4S5B					L3	CO									
Charadriidae	**Plovers & Lapwings**																
Charadrius vociferus	Killdeer	S4B					L5	CO		**CO**			PO				CO
Scolopacidae	**Sandpipers & Allies**																
Actitis macularia	Spotted Sandpiper	S5B					L4	PR									
Bartramia longicauda	Upland Sandpiper	S2B					L2	CO									
Gallinago delicata	Wilson's Snipe	S5B					L3	PR									
Scolopax minor	American Woodcock	S4B					L3	PR									
Laridae	**Gulls, Terns & Skimmers**																
Larus argentatus	Herring Gull	S4B, S5N					L3			**OB**			OB				
Larus delawarensis	Ring-billed Gull	S5					L4			**OB**	OB						OB
Ardeidae	**Herons & Bitterns**																
Ardea herodias	Great Blue Heron	S4					L3	CO		**OB**							OB
Botaurus lentiginosus	American Bittern	S5B					L2	PO									
Butorides virescens	Green Heron	S4B					L4	CO									
Cathartidae	**Vultures**																
Cathartes aura	Turkey Vulture	S5B, S3N					L4	PO		**OB**							OB
Accipitridae	**Hawks, Kites, Eagles & Allies**																
Accipiter cooperii	Cooper's Hawk	S4	NAR	NAR	NS	No schedule	L4	PO									
Accipiter gentilis	Northern Goshawk	S4	NAR	NAR	NS	No schedule	L2	PO									
Accipiter striatus	Sharp-shinned Hawk	S5	NAR	NAR	NS	No schedule	L3	PR									
Buteo jamaicensis	Red-tailed Hawk	S5	NAR	NAR	NS	No schedule	L5	CO									
Buteo lineatus	Red-shouldered Hawk	S4B, S2N	NAR	NAR	SC	Schedule 3	L2	PO									
Buteo platypterus	Broad-winged Hawk	S5B					L2	PO									
Circus hudsonius	Northern Harrier	S5B, S4N	NAR	NAR	NS	No schedule	L3	PR									
Strigidae	**Typical Owls**																
Bubo virginianus	Great Horned Owl	S4					L4	CO									
Megascops asio	Eastern Screech-Owl	S4	NAR	NAR	NS	No schedule	L4	CO									
Strix varia	Barred Owl	S5					L2	PO									
Alcedinidae	**Kingfishers**																
Megaceryle alcyon	Belted Kingfisher	S5B, S4N					L4	PR									
Picidae	**Woodpeckers**																
Colaptes auratus	Northern Flicker	S5					L4	CO		**OB**							OB
Dryobates pubescens	Downy Woodpecker	S5					L5	CO		**PO**	PO						OB
Dryobates villosus	Hairy Woodpecker	S5					L4	CO									
Dryocopus pileatus	Pileated Woodpecker	S5					L3	PR									
Melanerpes carolinus	Red-bellied Woodpecker	S5					L4	PO									
Melanerpes erythrocephalus	Red-headed Woodpecker	S3	SC	E	E	Schedule 1	L3	PO									
Falconidae	**Caracaras & Falcons**																
Falco sparverius	American Kestrel	S4					L4	PR									
Tyrannidae	**Tyrant Flycatchers**																
Contopus virens	Eastern Wood-Pewee	S4B	SC	SC	SC	Schedule 1	L4	PR									
Empidonax alnorum	Alder Flycatcher	S5B					L4	PR									
Empidonax minimus	Least Flycatcher	S5B					L4	PO									
Empidonax traillii	Willow Flycatcher	S4B					L4	PO		**PO**			PO				PO
Myiarchus crinitus	Great Crested Flycatcher	S5B					L4	CO									
Sayornis phoebe	Eastern Phoebe	S5B					L5	CO									
Tyrannus tyrannus	Eastern Kingbird	S4B					L4	CO									
Vireonidae	**Vireos**																
Vireo flavifrons	Yellow-throated Vireo	S4B					L3	PO									
Vireo gilvus	Warbling Vireo	S5B					L5	PR									

Vireo olivaceus	Red-eyed Vireo	S5B					L4	PR		**PR**		PO	PO	PR	PO	PO	PO
Corvidae	**Crows & Jays**																
Corvus brachyrhynchos	American Crow	S5					L5	PR		**PR**			PO	PR	PO		PO
Corvus corax	Common Raven	S5					L3	PO									
Cyanocitta cristata	Blue Jay	S5					L5	CO		**PO**		PO		PO	PO	PO	PO
Alaudidae	**Larks**																
Eremophila alpestris	Horned Lark	S4					L4	PR		**PO**			PO		PO		PO
Hirundinidae	**Swallows**																
Hirundo rustica	Barn Swallow	S4B	SC	SC	T	Schedule 1	L4	CO		**PO**	OB		PO			PO	
Petrochelidon pyrrhonota	Cliff Swallow	S4S5B					L4	CO									
Riparia riparia	Bank Swallow	S4B	THR	T	T	Schedule 1	L4	CO									
Stelgidopteryx serripennis	Northern Rough-winged Swallow	S4B					L4	PO									
Tachycineta bicolor	Tree Swallow	S4S5B					L4	CO		**PO**						PO	
Paridae	**Chickadees & Titmice**																
Poecile atricapillus	Black-capped Chickadee	S5					L5	CO		**PO**		PO		PO		PO	
Sittidae	**Nuthatches**																
Sitta canadensis	Red-breasted Nuthatch	S5					L4	CO									
Sitta carolinensis	White-breasted Nuthatch	S5					L4	PR									
Certhiidae	**Creepers**																
Certhia americana	Brown Creeper	S5					L3	PO									
Troglodytidae	**Wrens**																
Cistothorus platensis	Sedge Wren	S4B	NAR	NAR	NS	No schedule	L3	PR									
Troglodytes aedon	House Wren	S5B					L5	CO									
Troglodytes hiemalis	Winter Wren	S5B, S4N					L3	PR									
Polioptilidae	**Gnatcatchers**																
Polioptila caerulea	Blue-gray Gnatcatcher	S4B					L4	PR									
Turdidae	**Thrushes**																
Catharus fuscescens	Veery	S5B					L3	CO									
Hylocichla mustelina	Wood Thrush	S4B	SC	T	T	Schedule 1	L3	CO									
Sialia sialis	Eastern Bluebird	S5B, S4N	NAR	NAR	NS	No schedule	L4	CO									
Turdus migratorius	American Robin	S5					L5	CO		**CO**	CO	PR		PR	PR	PR	OB
Mimidae	**Mockingbirds, Thrashers & Allies**																
Dumetella carolinensis	Gray Catbird	S5B, S3N					L4	CO		**PR**	PR			PO			
Mimus polyglottos	Northern Mockingbird	S4					L5	CO									
Toxostoma rufum	Brown Thrasher	S4B					L3	CO		**PO**							PO
Sturnidae	**Starlings**																
Sturnus vulgaris	European Starling	SNA					L+	CO									
Bombycillidae	**Waxwings**																
Bombycilla cedrorum	Cedar Waxwing	S5					L5	PR		**PR**	PR			PO			
Passeridae	**Old World Sparrows**																
Passer domesticus	House Sparrow	SNA					L+	CO		**PO**		PO					
Fringillidae	**Finches & Allies**																
Haemorhous mexicanus	House Finch	SNA					L+	CO									
Haemorhous purpureus	Purple Finch	S5					L4	CO									
Spinus pinus	Pine Siskin	S5					L4	PO									
Spinus tristis	American Goldfinch	S5					L5	PR		**PR**	PR	PO	PR	PO	PO	OB	PO
Emberizidae	**New World Sparrows & Allies**																
Ammodramus savannarum	Grasshopper Sparrow	S4B	SC	SC	SC	Schedule 1	L2	PR									
Melospiza georgiana	Swamp Sparrow	S5B, S4N					L4	CO									
Melospiza melodia	Song Sparrow	S5					L5	CO		**PR**	PR	PR	PR	PR	PO	PO	PO
Passerculus sandwichensis	Savannah Sparrow	S5B, S3N					L4	PR		**PO**			PO				PO
Pipilo erythrophthalmus	Eastern Towhee	S4B, S3N					L3	CO									
Pooecetes gramineus	Vesper Sparrow	S4B					L3	PR									
Spizella pallida	Clay-colored Sparrow	S4B					L3	CO									
Spizella passerina	Chipping Sparrow	S5B, S3N					L5	CO									
Spizella pusilla	Field Sparrow	S4B, S3N					L4	CO									
Zonotrichia albicollis	White-throated Sparrow	S5					L3	PR									
Icteridae	**Troupials & Allies**																
Agelaius phoeniceus	Red-winged Blackbird	S5					L5	CO		**CO**	PO		PR	PO		CO	PO
Dolichonyx oryzivorus	Bobolink	S4B	THR	T	T	Schedule 1	L3	CO		**PO**			PO				OB
Icterus galbula	Baltimore Oriole	S4B					L5	CO									
Molothrus ater	Brown-headed Cowbird	S5					L5	CO		**PR**	PR	PO			PR	PO	
Quiscalus quiscula	Common Grackle	S5					L5	CO		**CO**	PO		PO	PO	CO		
Sturnella magna	Eastern Meadowlark	S4B, S3N	THR	T	T	Schedule 1	L4	PR	X								
Parulidae	**Wood Warblers**																
Geothlypis philadelphia	Mourning Warbler	S5B					L3	CO									
Geothlypis trichas	Common Yellowthroat	S5B, S3N					L4	CO		**PR**		PO	PR	PO	PO		PO
Leiothlypis ruficapilla	Nashville Warbler	S5B					L3	PR									
Mniotilta varia	Black-and-white Warbler	S5B					L2	PR									
Parkesia noveboracensis	Northern Waterthrush	S5B					L3	PO									
Protonotaria citrea	Prothonotary Warbler	S1B	END	E	E	Schedule 1	L2	CO									
Seiurus aurocapilla	Ovenbird	S5B					L3	PR									
Setophaga caerulescens	Black-throated Blue Warbler	S5B					L3	PR									
Setophaga fusca	Blackburnian Warbler	S5B					L3	PR									
Setophaga magnolia	Magnolia Warbler	S5B					L3	CO									
Setophaga pensylvanica	Chestnut-sided Warbler	S5B					L3	CO									
Setophaga petechia	Yellow Warbler	S5B					L5	CO		**PO**	PO		PO				
Setophaga pinus	Pine Warbler	S5B, S3N					L3	PR									
Setophaga ruticilla	American Redstart	S5B					L4	PR		**PO**	PO		PO				PO

Setophaga virens	Black-throated Green Warbler	S5B					L3	CO									
Vermivora chrysoptera	Golden-winged Warbler	S3B	SC	T	T	Schedule 1	L2	CO									
Vermivora cyanoptera	Blue-winged Warbler	S4B					L2	PR									
Cardinalidae	**Cardinals, Grosbeaks & Allies**																
Cardinalis cardinalis	Northern Cardinal	S5					L5	CO		**PR**	PR	PR	PO	PO		PR	PO
Passerina cyanea	Indigo Bunting	S5B					L4	CO		**PR**		PO		PO	PR	PO	
Pheucticus ludovicianus	Rose-breasted Grosbeak	S5B					L4	CO									
Piranga olivacea	Scarlet Tanager	S5B					L3	PR									
Total								**118**	**1**	**35**	**15**	**11**	**18**	**15**	**11**	**12**	**24**

*OBBA Atlas Square: 17NJ95
**NHIC Atlas Squares: 17NJ9552, 9553

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Appendix VI
Herpetofauna Species Reported from the Study Area

Reptile and Amphibian Species Reported from the Study Area - Airport Rd., Caledon EIS (Project #2849A)

Scientific Name	Common Name	SRANK	SARO	COSEWIC	SARA	SARA Schedule	TRCA Status	ORAA*	NHIC Data**	NRSI Observed
		NDMNRF 2021	MECP 2022	Government of Canada 2021	Government of Canada 2021	Government of Canada 2021	TRCA 2019	Ontario Nature 2019	NDMNRF 2022	NRSI Results from 2022-2023
Turtles										
Chelydra serpentina	Snapping Turtle	S4	SC	SC	SC	Schedule 1	L3	X		
Chrysemys picta marginata	Midland Painted Turtle	S4		SC	SC	Schedule 1	L3	X		
Snakes										
Lampropeltis triangulum	Milksnake	S4	NAR	SC	SC	Schedule 1	L3	X		
Storeria occipitomaculata	Red-bellied Snake	S5					L3	X		
Thamnophis sirtalis sirtalis	Eastern Gartersnake	S5					L4	X		
Salamanders										
Notophthalmus viridescens viridescens	Red-spotted Newt	S5					L2	X		
Plethodon cinereus	Eastern Red-backed Salamander	S5					L3	X		
Frogs and Toads										
Anaxyrus americanus	American Toad	S5					L4	X		
Hyla versicolor	Gray Treefrog	S5					L2	X		**X**
Pseudacris triseriata pop. 2	Western Chorus Frog (Great Lakes / St. La	S4	NAR	T	T	Schedule 1	L2			**X**
Pseudacris crucifer	Spring Peeper	S5					L2	X		
Lithobates catesbeianus	American Bullfrog	S4					L2	X		
Lithobates clamitans	Green Frog	S5					L4	X		
Lithobates palustris	Pickerel Frog	S4	NAR	NAR	NS	No schedule	L2	X		
Lithobates pipiens	Northern Leopard Frog	S5	NAR	NAR	NS	No schedule	L3	X		
Lithobates sylvaticus	Wood Frog	S5					L2	X		
Total								**15**	**0**	**2**

*ORAA Atlas Square: 17NJ95

**NHIC Atlas Squares: 17NJ9552, 9553

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Appendix VII
Mammal Species Reported from the Study Area

Mammal Species Reported from the Study Area - Airport Rd., Caledon EIS (Project #2849A)

Scientific Name	Common Name	SRANK	SARO	COSEWIC	SARA	SARA Schedule	TRCA Status	Ontario Mammal Atlas	NHIC Data**	NRSI Observed
		NDMNRF 2021	MECP 2022	Government of Canada 2021	Government of Canada 2021	Government of Canada 2021	TRCA 2019	Dobbyn 1994	NDMNRF 2022	NRSI Results from 2022-2023
Didelphimorphia	**Opossums**									
Didelphis virginiana	Virginia Opossum	S4					L4	X		
Eulipotyphla	**Shrews, Moles, Hedgehogs, and Allies**									
Blarina brevicauda	Northern Short-tailed Shrew	S5					L3	X		
Condylura cristata	Star-nosed Mole	S5					L3	X		
Parascalops breweri	Hairy-tailed Mole	S4					L3	X		
Sorex cinereus	Masked Shrew	S5					L3	X		
Sorex fumeus	Smoky Shrew	S5						X		
Sorex palustris	Water Shrew	S5						X		
Chiroptera	**Bats**									
Eptesicus fuscus	Big Brown Bat	S4					L4	X		
Lasionycteris noctivagans	Silver-haired Bat	S4						X		
Lasiurus borealis	Eastern Red Bat	S4					LX	X		
Lasiurus cinereus	Hoary Bat	S4					LX	X		
Myotis leibii	Eastern Small-footed Myotis	S2S3	END					X		
Myotis lucifugus	Little Brown Myotis	S3	END	E	E	Schedule 1	L4	X		
Myotis septentrionalis	Northern Myotis	S3	END	E	E	Schedule 1		X		
Perimyotis subflavus	Tri-colored Bat	S3?	END	E	E	Schedule 1		X		
Lagomorpha	**Rabbits and Hares**									
Lepus americanus	Snowshoe Hare	S5					LX	X		
Lepus europaeus	European Hare	SNA					LX	X		
Sylvilagus floridanus	Eastern Cottontail	S5					L4	X		
Rodentia	**Rodents**									
Castor canadensis	Beaver	S5					L4	X		
Erethizon dorsatum	Porcupine	S5					L2	X		
Glaucomys sabrinus	Northern Flying Squirrel	S5					L2	X		
Marmota monax	Woodchuck	S5					L5	X		
Microtus pennsylvanicus	Meadow Vole	S5					L4	X		
Microtus pinetorum	Woodland Vole	S3?	SC	SC	SC	Schedule 1		X		
Mus musculus	House Mouse	SNA					L+	X		
Napaeozapus insignis	Woodland Jumping Mouse	S5					L2	X		
Ondatra zibethicus	Muskrat	S5					L4	X		
Peromyscus leucopus	White-footed Mouse	S5					L4	X		
Peromyscus maniculatus	Deer Mouse	S5					L4	X		
Rattus norvegicus	Norway Rat	SNA					L+	X		
Sciurus carolinensis	Eastern Gray Squirrel	S5					L5	X		
Synaptomys cooperi	Southern Bog Lemming	S4						X		
Tamias striatus	Eastern Chipmunk	S5					L4	X		
Tamiasciurus hudsonicus	Red Squirrel	S5					L4	X		
Zapus hudsonius	Meadow Jumping Mouse	S5					L3	X		
Canidae	**Canines**									
Canis latrans	Coyote	S5					L5	X		X
Vulpes vulpes	Red Fox	S5					L4	X		
Felidae	**Felines**									
Lynx rufus	Bobcat	S4						X		
Mephitidae	**Skunks and Stink Badgers**									
Mephitis mephitis	Striped Skunk	S5					L5	X		
Mustelidae	**Weasels and Allies**									
Mustela erminea	Ermine	S5					L3	X		
Mustela frenata	Long-tailed Weasel	S4					LX	X		
Neovison vison	American Mink	S4					L4	X		

Taxidea taxus jacksoni	American Badger (Southwestern Ontario	S1	END	E	E	Schedule 1		X		
Procyonidae	**Raccoons and Allies**									
Procyon lotor	Northern Raccoon	S5					L5	X		
Ursidae	**Bears**									
Ursus americanus	American Black Bear	S5	NAR	NAR	NS	No schedule		X		
Artiodactyla	**Deer and Bison**									
Odocoileus virginianus	White-tailed Deer	S5					L4	X		X
Total								**46**	**0**	**2**

*Mammal Atlas Square Numbers: NU95
**NHIC Atlas Squares: 17NJ9552, 9553

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Appendix VIII
Fish Species Reported from the Study Area

Fish Species Reported from the Study Area - Airport Rd., Caledon NH Overview (Project #2849A)

Scientific Name	Common Name	SRANK	SARO	COSEWIC	SARA	SARA Schedule	Fisheries and Oceans SAR Data	Aquatic Resource Area Data	NHIC Data*
		NDMNRF 2021	MECP 2022	Government of Canada 2021	Government of Canada 2021	Government of Canada 2021	DFO 2021	Government of Ontario 2022	NDMNRF 2022
Leuciscidae	**Minnows**								
Clinostomus elongatus	Redside Dace	S1	END	E	E	Schedule 1	X	X	
Luxilus cornutus	Common Shiner	S5						X	
Margariscus nachtriebi	Northern Pearl Dace	S5						X	
Notropis heterodon	Blackchin Shiner	S4	NAR	NAR	NS	No schedule		X	
Notropis heterolepis	Blacknose Shiner	S5						X	
Pimephales notatus	Bluntnose Minnow	S5	NAR	NAR	NS	No schedule		X	
Pimephales promelas	Fathead Minnow	S5						X	
Rhinichthys atratulus	Blacknose Dace	S5						X	
Semotilus atromaculatus	Creek Chub	S5						X	
Catostomidae	**Suckers**								
Catostomus commersonii	White Sucker	S5						X	
Gasterosteidae	**Sticklebacks**								
Culaea inconstans	Brook Stickleback	S5						X	
Centrarchidae	**Sunfishes and Basses**								
Ambloplites rupestris	Rock Bass	S5						X	
Percidae	**Perches and Darters**								
Etheostoma caeruleum	Rainbow Darter	S4						X	
Etheostoma flabellare	Fantail Darter	S4						X	
Etheostoma nigrum	Johnny Darter	S5						X	
Total							**1**	**15**	**0**

*NHIC Atlas Square(s): 17NJ9552, 9553

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Appendix IX
Odonate Species Reported from the Study Area

Odonate Species Reported from the Study Area - Airport Road, Caledon EIS (Project #2849A)

Scientific Name	Common Name	SRANK	SARO	COSEWIC	SARA	SARA Schedule	Odonate Atlas*	NHIC Data**	NRSI Observed
		NDMNRF 2022	MECP 2022	Government of Canada 2022	Government of Canada 2022	Government of Canada 2022	OOAD 2022	NDMNRF 2022	NRSI 2022-2023
Calopterygidae	**Broadwinged Damselflies**								
Calopteryx maculata	Ebony Jewelwing	S5					X		
Aeshnidae	**Darners**								
Anax junius	Common Green Darner	S5					X		
Boyeria vinosa	Fawn Darner	S5					X		
Libellulidae	**Skimmers**								
Libellula pulchella	Twelve-spotted Skimmer	S5							X
Sympetrum vicinum	Autumn Meadowhawk	S5							X
Total							**3**	**0**	**2**

**Odonate Atlas Square Numbers: 17NJ95*
***NHIC Atlas Squares: 17NJ9552, 9553*

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Appendix X
Lepidoptera Species Reported from the Study Area

Butterfly Species Reported from the Study Area - Airport Rd., Caledon EIS (Project #2849A)

Scientific Name	Common Name	SRANK	SARO	COSEWIC	SARA	SARA Schedule	Ontario Butterfly Atlas*	NHIC Data**	NRSI Observed
		NDMNRF 2021	MECP 2022	Government of Canada 2021	Government of Canada 2021	Government of Canada 2021	Macnaughton et al. 2022	MNRF 2022	NRSI Results from 2022-2023
Hesperiidae	**Skippers**								
Anatrytone logan	Delaware Skipper	S4					X		
Euphyes vestris	Dun Skipper	S5					X		
Poanes hobomok	Hobomok Skipper	S5					X		
Thorybes pylades	Northern Cloudywing	S5					X		
Thymelicus lineola	European Skipper	SNA					X		
Wallengrenia egeremet	Northern Broken Dash	S5					X		
Papilionidae	**Swallowtails**								
Papilio glaucus	Eastern Tiger Swallowtail	S5					X		
Papilio polyxenes	Black Swallowtail	S5					X		
Pieridae	**Whites and Sulphurs**								
Colias philodice	Clouded Sulphur	S5					X		
Pieris rapae	Cabbage White	SNA					X		
Lycaenidae	**Harvesters, Coppers, Hairstreaks, Blues**								
Celastrina lucia	Northern Spring Azure	S5					X		
Cupido comyntas	Eastern Tailed Blue	S5					X		
Glaucopsyche lygdamus	Silvery Blue	S5					X		
Lycaena hyllus	Bronze Copper	S5					X		
Satyrium acadica	Acadian Hairstreak	S4					X		
Satyrium calanus	Banded Hairstreak	S4					X		
Satyrium liparops	Striped Hairstreak	S5					X		
Nymphalidae	**Brush-footed Butterflies**								
Aglais milberti	Milbert's Tortoiseshell	S5					X		
Boloria bellona	Meadow Fritillary	S5					X		
Cercyonis pegala	Common Wood-Nymph	S5					X		
Coenonympha tullia	Common Ringlet	S5					X		
Danaus plexippus	Monarch	S2N,S4B	SC	E	SC	Schedule 1	X		
Euphydryas phaeton	Baltimore Checkerspot	S4					X		
Lethe anthedon	Northern Pearly-Eye	S5					X		
Limenitis archippus	Viceroy	S5					X		
Limenitis arthemis arthemis	White Admiral	S5					X		
Limenitis arthemis astyanax	Red-spotted Purple	S5					X		
Megisto cymela	Little Wood-Satyr	S5					X		
Nymphalis antiopa	Mourning Cloak	S5					X		
Nymphalis l-album	Compton Tortoiseshell	S5					X		
Phyciodes cocyta	Northern Crescent	S5					X		
Polygonia comma	Eastern Comma	S5					X		
Speyeria cybele	Great Spangled Fritillary	S5					X		
Vanessa atalanta	Red Admiral	S5B					X		
Total							**34**	**0**	**0**

*TEA Atlas Square: 17NJ95
**NHIC Atlas Squares: 17NJ9552, 9553

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