Prepared By:

1017 & 1029 Brébeuf Road
Town of Midland

The Sarjeant Co. Ltd.

Final Environmental Impact Study

Project No. 02-015-2023

November 2024

23 HERRELL AVENUE, BARRIE ON L4N 6T5
WWW.BIRKSNHC.CA

23 Herrell Ave
Barrie, Ontario
L4N 6T5

November 4, 2024

The Sarjeant Co. Ltd.
15 Sarjeant Drive
Barrie, ON
L4N 4V9

Attention: Michael MacMillan, Asst. General Manager

RE: Final Environmental Impact Study - 1017 & 1029 Brébeuf Road, Town of Midland
Birks NHC File #02-015-2023

Dear Mr. MacMillan:

Thank you for retaining Birks Natural Heritage Consultants, Inc. ("**Birks NHC**") to prepare an Environmental Impact Study ("**EIS**") for the properties identified as 1017 and 1029 Brébeuf Road in the Town of Midland. Birks NHC completed a Preliminary EIS for the properties (Birks NHC, December 2023) which was submitted as part of the pre-consultation phase to the Town of Midland for the proposed concrete ready mix plant on the properties. This final EIS is being prepared with updated field data collected during the 2024 field season in support of the Official Plan Amendment, Zoning By-law Amendment and Site plan applications to the Town of Midland.

Birks NHC completed comprehensive field surveys in 2023 and 2024 to review the existing conditions of the properties, with a focus on characterizing potential natural heritage features and functions present. Through assessment of the field surveys, review of background information, and applicable policies and regulations, we have determined that the properties and adjacent lands contain natural heritage features and functions relating to the presence of woodlands and candidate significant wildlife habitat.

This report outlines the process by which features are considered for their natural heritage function and value and provides an assessment of potential impacts associated with the proposed activity. Where potential impacts are identified, mitigation measures are proposed to

reduce the potential impacts that could result to those identified. Assuming the mitigation measures recommended in this report are implemented, there is no expectation that natural heritage features or functions associated with the study area defined herein would be negatively impacted.

If you have any questions or concerns regarding this report, please do not hesitate to contact the undersigned.

Birks Natural Heritage Consultants, Inc.

Stephanie Brady, HBES
Ecologist

Reviewed by:

Brad Baker, H.B.Sc.
Ecologist

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1 INTRODUCTION

Birks Natural Heritage Consultants, Inc. ("**Birks NHC"**) was retained by Sarjeant Co. Ltd. ("**Sarjeant**") to prepare an Environmental Impact Study ("**EIS**") for the lands located at 1017 and 1029 Brebeuf Road (the "**properties**") in the Town of Midland (the "**Town**").

1.1 PURPOSE

It is our understanding that Sarjeant is exploring opportunities related to the properties to allow for the creation of a concrete ready mix plant to service the aggregate operation on lands to the east. An EIS is required as part of the application due to the presence of wooded/naturalized areas on the properties and natural heritage features mapped on adjacent lands. At this time, it is our understanding that the EIS is being completed to support the Official Plan Amendment, Zoning By-law Amendment and Site plan applications for the proposed development. Comprehensive field surveys were completed throughout the 2023 and 2024 field seasons which has provided site information to confirm potential natural heritage features and functions.

The purpose of this EIS is to provide an assessment and characterization of the natural heritage features and functions identified and evaluate for potential impacts to those features associated with the proposed redevelopment activities. Where potential impacts are identified, recommendations or mitigation measures are proposed to ensure that the appropriate natural heritage policies and legislation can be followed.

1.2 STUDY AREA

For the purpose of this EIS, the "**study area**" is focused within an area approximately 120 metres ("**m**") surrounding the properties, as illustrated in Figure 1. The Ministry of Natural Resources and Forestry ("**MNRF**") published the Natural Heritage Reference Manual (MNR, 2010) to provide technical guidance for the implementation of the natural heritage policies of the Provincial Policy Statement, 2020 ("**PPS"**) which outlines a distance of 120 m for use in consideration of impacts to adjacent features. To allow for the consideration of any other natural heritage features in the area a landscape level screening was also undertaken through a review of air photos within approximately one kilometer surrounding the study area.

1.3 SITE DESCRIPTION

The properties are located within the defined Settlement of the Town, located at the southern end of the settlement boundaries (Figure 1). Tree Cover on 1029 Brébeuf property appears to have grown up since approximately 2002 when the property was relatively clear aside from stored materials. This historical use remains evident in the growth of the tree cover which is primarily young and the abundant piles of wood and other building materials and waste present throughout the property. An existing home and other structures (*i.e.,* garage) are situated at the west of the property with entry provided via

a gravel driveway which permits access to the existing dwelling and maintained portions of the property. The 1017 Brébeuf property is predominantly residential in nature with one existing dwelling and accessory structures (*i.e.,* garden sheds, gazebo). Lawn trees are present throughout. Treed areas are associated with both properties and that tree cover would be considered contiguous with the adjacent properties to the north.

1.4 Adjacent Land Use

Adjacent lands contain a mix of uses, including the Brooklea Golf Club to the west, open agricultural lands to the south, active aggregate pits to the east, and rural residences along Brébeuf Road to the north and south of the property limits. Naturalized and woodland areas are present to the north of the properties.

The Wye Marsh Provincially Significant Wetland ("**PSW**") is present approximately 800m from the properties limit (Figure 1). Although this feature is located beyond the 120m study area, it is still included within this report due its significance within the larger landscape.

1017 & 1029 Brebeuf Road

Town of Midland

Figure 1. Study Area

Properties Limit
120m Study Area
Watercourse (LIO)
Site Drainage (Jones Consulting Group)

Wetland (LIO)
Un-evaluated
Provincially Significant

MAP DRAWING INFORMATION:
DATA PROVIDED BY: ESRI CANADA, SIMCOE COUNTY OPEN DATA

MAP CREATED BY: SB
MAP CHECKED BY: MF
MAP PROJECTION: NAD 1983 UTM ZONE 17N

0 80 160 320 480 640 Meters

FILE LOCATION:
Path: C:\Users\S_Brady\BirksNHC\Birks NHC Team for all - Documents\Project Folders\04 - SBrady Projects\ArcGIS - Projects here\Projects - here\02-015-2023 Brebeuf

PROJECT: 02-015-2023 STATUS: DRAFT DATE: 18/12/2023

2 ENVIRONMENTAL POLICY FRAMEWORK

The following summarizes the planning policies and regulations related to natural heritage that apply to the proposed development.

2.1 PROVINCIAL POLICY STATEMENT, 2024

Ontario's *Planning Act* requires that planning decisions shall be consistent with the Provincial Policy Statement ('PPS'). The PPS provides overall policy directions on matters of provincial interest related to land use planning and development in Ontario. The 2024 PPS is a streamlined province-wide land use planning policy framework that replaces both the Provincial Policy Statement, 2020 and A Place to Grow: Growth Plan for the Greater Golden Horseshoe, 2019.

Section 4.1 of the PPS (2024) specifies policy related to protection of natural heritage features and functions.

According to Section 4.1.4 of the PPS, development and site alteration shall not be permitted in the following features:

a) Significant wetlands in Ecoregions 5E, 6E, and 7E; and,
b) Significant coastal wetlands.

Section 4.1.5 of the PPS states that, unless it has been 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:

a) Significant wetlands in the Canadian Shield north of Ecoregions 5E, 6E and 7E;
b) Significant woodlands in Ecoregions 6E and 7E (excluding islands in Lake Huron and the St. Marys River);
c) Significant valleylands in Ecoregions 6E and 7E (excluding islands in Lake Huron and the St. Marys River);
d) Significant wildlife habitat ('SWH');
e) Significant areas of natural and scientific interest; and,
f) Coastal wetlands in Ecoregions 5E, 6E, and 7E that are not subject to policy 4.1.4(b).

While many of these features are mapped and direction is available to allow for candidate features and functions to be identified, it remains the responsibility of the province and/or the municipality to designate areas identified within Section 4.1.4 and 4.1.5 of the PPS as significant. The Natural Heritage Reference Manual (MNR, 2010) and Significant Wildlife Habitat Criteria Schedules for Ecoregion 6E (MNRF, 2015) were used within this report to identify candidate features and functions not currently identified by the province and/or municipality.

Sections 4.1.6 and 4.1.7 state that development and site alteration is not permitted in fish habitat or habitat of endangered and threatened species except in accordance with federal and provincial requirements.

Section 4.1.8 extends protection of those features defined above to adjacent lands, typically those within 120 m of the potential impact. Section 2.1.8 states that development and site alteration shall not be permitted on adjacent lands to natural heritage features identified in policies 4.1.4, 4.1.5, and 4.1.6 unless the ecological function of the adjacent lands has been evaluated and it has been demonstrated that there will be no negative impacts on the natural features or on their ecological function.

2.2 Endangered Species Act, 2007

Ontario's Endangered Species Act ("**ESA**") provides regulatory protection to Species at Risk, prohibiting harassment, harm and/or killing of individuals (Section 9) and destruction of their habitats (Section 10). Habitat of the species is defined as: the habitat features prescribed in the ESA; or, areas on which the species depends, directly or indirectly, to carry on its life processes, as described within reference documents (*i.e.*, species status reports and recovery strategies, technical reports, scientific articles) and based on internal data available from applicable agencies.

Ontario Regulation ("**O. Reg**") 230/08 of the ESA identifies Species at Risk in Ontario and includes species listed as Extirpated, Endangered, Threatened, and Special Concern. Only species listed as Endangered and Threatened receive species and habitat protection through the ESA. Species designated as Special Concern may receive protection under the Significant Wildlife Habitat ("**SWH**") provisions of the PPS.

2.3 Fisheries Act, 1985

The purpose of the federal *Fisheries Act*, 1985 is in part, to provide a framework for the conservation and protection of fish and fish habitat through the various regulations that protect against serious harm to fish by death or any permanent or temporary harmful alteration, disruption or destruction ("**HADD**") to their habitat. Fish habitat is defined within the *Fisheries Act,* 1985 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 fish and fish habitat protection provisions of the *Fisheries Act, 1985* include:

- A prohibition against causing the death of fish, by means other than fishing (section 34.4);
- A prohibition against causing the harmful alteration, disruption or destruction of fish habitat (section 35);
- Establishment of standards and codes of practice in relation to works, undertakings and activities during any phase of their construction, operation, modification, decommissioning or abandonment for the avoidance of death to fish, HADD, and for the prevention of pollution (Section 34.2); and,
- Ministerial powers to ensure the free passage of fish or the protection of fish or fish habitat with respect to existing obstructions (section 34.3).

The interpretation and application of the regulations of the *Fisheries Act,* 1985 is overseen by Fisheries and Oceans Canada ("**DFO**"). Under the direction of DFO, projects that have potential to affect fish and fish habitat are to be screened using their online guidance platform, 'Projects Near Water' to determine

if the project will require review under the *Fisheries Act,* 1985. Projects that can not implement measures to mitigate impact to fish and fish habitat, and do not qualify under the current Standards and Codes of Practice, require review by DFO prior to any site disturbance or alteration, including vegetation removal and grading.

2.4 Town of Midland Official Plan, 2019

The properties are depicted within the Town's Official Plan Schedule C as 'Commercial Corridor' and 'Natural Heritage' (Appendix A).

The Natural Heritage designation is comprised of Significant Wetlands, Significant Woodlands, Significant Valleylands, SWH, habitat of Species at Risk and rare plant communities, ANSI, fish habitat, and other natural heritage features which might not be designated as Significant (*i.e.,* thickets, meadows, woodlands less than 2 ha, unevaluated wetlands). Development and site alteration is not to be permitted in the Natural Heritage designation (Town of Midland, 2019, Section 4.5.3). Where buildings, development and/or site alteration are proposed within the Natural Heritage designation, the Town shall require that an EIS be prepared that demonstrates that there will be no negative impacts on any natural heritage features or ecological and hydrologic functions. Where buildings, development and/or site alteration are necessary and a negative impact is unavoidable, then the Town, in consultation with the County and any agency having jurisdiction, may accept an ecological offsetting mitigation approach (Town of Midland, 2019, Section 4.5.3). Changes to the boundaries of the Natural Heritage designation may be considered through an EIS (Town of Midland, 2019, Section 4.5.3.4).

3 STUDY APPROACH

The following activities and assessments were undertaken to fulfill the objectives of this study. A Terms of Reference ("**TOR**") was established in consultation with the Town and their reviewer, Severn Sound Environmental Association ("**SSEA**") as provided within Appendix B.

3.1 Background Review and Data Sources

Background documents provide information on site characteristics, habitat, wildlife, rare species and communities, and other aspects of the study area. For the purpose of this EIS, the following sources were considered:

- Atlas of the Breeding Birds of Ontario (Bird Studies Canada, 2006)
- Land Information Ontario (LIO; MNRF, accessed 2024)
- Natural Heritage Information Centre (NHIC; MNRF, accessed 2024)
- Ontario Reptile and Amphibian Atlas (Ontario Nature, accessed 2024)
- Species at Risk in Ontario List (MECP, 2024)
- Aquatic Species at Risk Map (DFO, 2023)
- Town of Midland Official Plan (2019)

3.2 Field Surveys

Natural heritage features and functions were characterized within the study area through the completion of several surveys during the appropriate timing window for each targeted feature. Consideration was also given to the presence or absence of suitable Species at Risk habitat, based on habitat requirements of threatened and/or endangered species that may overlap with the Study Area.

The following section lists and describes each survey conducted within the Study Area, including the provincial protocols that were followed during the field program. These sections also state where modifications were made to a specific provincial protocol to suit on-site conditions.

A summary of the field surveys, dates, times, and Birks NHC ecologists that completed each survey is provided in Table 1. Incidental wildlife, plant and habitat observations were considered during the field investigations.

Table 1: Summary of Field Surveys Conducted Including Dates and Times of Completion.

Dates	Start/End Time	Type of Survey	Ecologist
June 19, 2024 June 20, 2024	30min before sunset – 1hr past sunset	Bat Exit Survey (Anthropogenic)	Stephanie Brady, HBES Brad Baker, H.B.Sc. Ken Tuininga, H.B.Sc.
April 15, 2024 May 2, 2024 June 19, 2024	20:13 – 20:28 21:05 – 21:20 21:30 – 21:48	Amphibian Calling Surveys	Stephanie Brady, HBES Ken Tuininga, H.B.Sc.
June 4, 2024 June 28, 2024	6:22 – 6:55 07:47 – 08:34	Dawn Breeding Bird Surveys	Stephanie Brady, HBES Ken Tuininga, H.B.Sc.
June 10, 2024 - June 20 2024	30min before sunset – 30 min past sunrise	Bat Acoustic Monitoring (Forest Roosting)	Stephanie Brady, HBES Brad Baker, B.Sc.
September 19, 2023 May 13, 2024 June 27, 2024	N/A	Ecological Land Classification/Vegetation Surveys	Stephanie Brady, HBES Brad Baker, H.B.Sc.
May 22, 2024 June 19, 2024 June 20, 2024	30min before sunset – 1hr past sunset	Nocturnal Bird Surveys	Stephanie Brady, HBES

3.2.1 Vegetation Community Mapping

The ELC system for Southern Ontario (Lee *et al.,* 1998) was used with modifications. In early 2007, the MNRF refined their original vegetation type codes to encompass the vast range of natural and cultural communities across Southern Ontario. These updated ELC codes have also been used for reporting purposes in this study where they are more representative.

Vascular plants were considered during the site visits. Plant species identified to date on the properties are common locally and provincially. No Species at Risk or provincially rare plant species were documented within the properties. Non-native and invasive species were predominant throughout the properties. Figure 2 depicts the identified ELC communities on the property and a formal list of vegetation species that were encountered on the property is included in Appendix C.

3.2.2 Amphibian Calling Surveys

Surveys were conducted following the Marsh Monitoring Program standards (Bird Studies Canada, revised 2008) to assess the function of wetland habitats as amphibian breeding habitat. According to this protocol, surveys are to be conducted between the months of April and July, at least 15 days apart, at the onset of three overnight temperature thresholds; 5°C for the first survey, 10°C for the second survey, and 17°C for the third survey. Each temperature threshold is designed to detect a variety of frog species during their 'optimum' breeding window, including early breeders (Chorus Frog, Spring Peeper, Wood Frog), and late-season breeders (American Toad, Northern Leopard Frog, Gray Treefrog, Green Frog, etc.).

Weather conditions were also taken into consideration for each survey; surveys were not performed during periods of intense rain and high winds.

Two stations were established within the properties which corresponded to the mapped ephemeral wetland features that were identified during other field surveys; the locations of the stations are illustrated in Figure 2. Each station was surveyed during the corresponding temperature thresholds and timing described in the Marsh Monitoring Protocol. The calling activity of individuals estimated to be within 100 m of the monitoring station was documented during each survey. For each species heard, call activity was ranked using one of the three call level code categories:

- Call code 1 - Individuals can be counted, calls not simultaneous;
- Call code 2 - Calls distinguishable, some simultaneous calling; or,
- Call code 3 - Full chorus, calls simultaneous and overlapping.

3.2.3 Dawn Breeding Bird Surveys

Dawn breeding bird surveys were conducted on the properties following the methods outlined in the Ontario Breeding Bird Atlas Guide for Participants (Cadman *et al*., 2001), with modifications made where deemed necessary. Specifically, breeding bird surveys consisted of ten-minute point counts that were used to establish qualitative estimates of bird abundance, species presence, and breeding activity in all habitat types within proximity to the property. Three breeding bird stations were surveyed on June 4, 2024, and June 28, 2024 (see Figure 2).

A formal list of species encountered during the breeding bird survey is included in Appendix D.

3.2.4 Bat Habitat Assessment

Exit Surveys

A visual inspection of existing structure was conducted June 4, 2024. The intent of this inspection was to determine whether bats may be utilizing the structure as a potential maternity roost site. During this assessment all visible areas external to the building and internal, where accessible, were reviewed for evidence of use (including guano) and to identify holes or spaces where bats may enter and exit such as cracks, peak of roofs, and vents. Based on the review of the structure, it was determined that anthropogenic roosting habitat for Endangered bat species was potentially present. Following the initial visual assessment, visual and acoustic bat exit surveys were completed on June 19 and June 20, 2024, for the existing structure and large hedgerow trees following the Species at Risk Bat Survey Note (MECP, 2021). The survey was conducted for a total of 90 minutes, beginning at 30 minutes before dusk and continuing until 60 minutes after dusk. Active (EchoMeter Touch 2 Pro) recorders were employed in conjunction with visual observations to identify to species level any bats exiting or entering the buildings. Any recordings were analyzed using the Wildlife Acoustic Kaleidoscope software and manually vetted for species identification.

Acoustic Monitoring

Passive acoustic monitoring is a widely used and accepted method of detecting the presence of bats within a specific area. These methods are largely based on the Survey Protocol for SAR Bats within Treed Habitats (MECP, 2022), with some modifications given site conditions (*e.g.,* small habitat ELC units) and study objectives.

Four Wildlife Acoustics SM4BAT FS Bat Acoustic Monitors were deployed in June 2024 for a period of 10 good-weather days within the forested portions of the properties. The location of each Bat Acoustic Monitor was generally selected based on appropriate habitat conditions with decaying trees containing features include loose bark and cavities, with the lowest amount of clutter possible and in consideration of anticipated future tree removals within the properties. Given the diversity of potential foraging habitat, effort was also made to capture areas that offered various foraging opportunities (*i.e.,* under canopy, open meadow marsh, forest openings, forest edges, corridors). A control site was selected (S4U22033) within an area where bats were expected to be most active, along forest edge and foraging within open meadows. Each Bat Acoustic Monitor was configured to begin recording 30 minutes before sunset and cease recording 30 minutes after sunrise. The location of each Bat Acoustic Monitor deployed can be found on Figure 2.

Wildlife Acoustics Kaleidoscope Pro 3 Analysis Software was used to process the sound files recorded during the sampling event. The Kaleidoscope program converted call data into individual files and was used to filter out false trigger noise such as rain and wind. Each file (or pass) which was confirmed as a bat call was automatically classified with species identification using the Kaleidoscope software's bat classifiers. Calls were then manually vetted by Birks NHC ecologists to confirm or change the bat classifier.

A conservative approach was used in the manual vetting of the recorded call files; if it is too difficult to assign a species to a call file, then a larger category is assigned (classifier group), such as MYOTIS (meaning calls could be of *Myotis lucifugus, Myotis leibeii,* or *Myotis Septentrionalis*), HighF (calls can be assigned to a high frequency calling species such as *Myotis lucifugus*, *Myotis Septentrionalis*, *Perimyotis subflavus, Myotis leibeii,* or *Lasiurus borealis*), EPFULANO (call can be assigned to either *Eptesicus fuscus* or *Lasionycteris noctivagans*), or LowF (call can be assigned to *Eptesicus fuscus*, *Lasionycteris noctivagans*, or *Lasiurus cinereus*).

All call files were categorized by 30-minute intervals starting at sunset and ending at sunrise. The results can be found in Appendix E and are discussed in Sections 5 and 6 below.

3.2.5 Nocturnal Bird Surveys

Based on the identification of potential habitat, species specific surveys for Eastern Whip-poor-will (Threatened) were carried out by Birks NHC in spring/summer of 2024 to determine if Eastern Whip-poor-will occurs within the properties limits. A modified version of Bird Studies Canada survey protocol for Eastern Whip-poor-will (Bird Studies Canada, 2019) was used for the purpose of this assessment. Timing was based on the lunar cycle as Whip-poor-will surveys are to be conducted during periods where 50% or more of the visible moon will be illuminated (*i.e.*, first quarter-new moon - last quarter). One survey station was utilized for the assessment (Figure 2). As noted within the protocol, surveys are ideally undertaken on calm clear nights with:

- At least 50% of the visible moon surface illuminated;
- Little or no cloud cover;
- Calm to light winds;
- No precipitation; and,
- Temperatures above 10°C.

Eastern Whip-poor-will surveys were conducted May 22, June 19, and June 20, 2024. A known calling location in the area was used as a control site to demonstrate that any negative identification was not due to poor weather conditions.

3.2.6 General Wildlife Surveys

A wildlife assessment within the properties was completed through incidental observations while on site. Wildlife habitat functions were evaluated according to provincial criteria outlined in the Significant Wildlife Habitat Criteria Schedules for Ecoregion 6E (MNRF, 2015). Significant wildlife habitat assessment is provided in Appendix B and discussed in Section 5.5 of this report.

3.3 Species at Risk

The Species at Risk assessment included an analysis of the habitat requirements of Species at Risk reported to occur in the region to identify those having potential to occur within the study area. Birks NHC staff reviewed data obtained through desktop review and the site visits related to potential

habitat for provincially designated species, notably Species at Risk listed under O. Reg. 230/08 of the ESA as Threatened or Endangered.

Habitat requirements of Threatened or Endangered species with habitat ranges overlapping the property were considered to document the presence or absence of suitable habitat. Species specific surveys were undertaken where habitat availability and the proposed activity would interact with that habitat in a manner that could reasonably be expected to result in potential for accidental contravention of the ESA.

4 EXISTING CONDITIONS

4.1 Vegetation Communities and Plants

4.1.1 Vegetation Communities

Vegetation communities and their respective locations are illustrated on Figure 2. A total of seven (7) distinct ecosites were identified within the properties limit. The vegetation communities that occur within the properties include:

1. WODM4 Dry-Fresh Deciduous Woodland

This vegetation community is representative of an early successional community, with young and sparse tree specimens including Manitoba Maple, Red Oak, White Ash, Trembling Aspen, and Apple. The copy is open and understory is dense with shrub species, predominately Apple, Staghorn Sumac, and Hawthorn species. Ground layer species include Virginia Creeper, Chicory, New England Aster, Narrow-leaved Plantain, and Raspberry. Waste and debris were noted throughout this community including old roof asphalt shingles, tires, and old windows and doors. This is a highly anthropogenic-influenced vegetation community.

2. FODM8-1 Fresh-Moist Poplar Deciduous Forest

This community is present within two separate polygons on the property and is dominated by Trembling Aspen and Balsam Poplar with Green Ash and White Birch noted as companion species. Glossy Buckthorn and Alternate-leaved Dogwood make the shrub layer in this community. Other vascular species documented within this community include Poison Ivy, Riverbank Grape, and Virginia Creeper. A small depression with evidence of ephemeral pooling was noted within the north-east polygon.

3. WOCM1-3 Dry-Fresh White Pine Coniferous Forest

Similar to the WODM4 community, this open woodland community is representative of an early successional community with young specimens of Eastern White Pine and Scotch Pine. Manitoba Maple, Trembling Aspen, and White Ash were documented as companion species. Open areas were noted to contain Canada Goldenrod, Raspberry, and Viper's Bugloss.

4. MEGM4-1 Open Graminoid Meadow

The open graminoid meadow appears to be the resulting community of the overgrown lawn and gardens of the existing dwelling located at 1029 Brébeuf Road. Staghorn Sumac is encroaching into the open areas. Vipers Bugloss, Wild Carrot, New England Aster, Narrow-leaved Plantain, and Canada Goldenrod were noted throughout.

5. FODM5-3 Dry-Fresh Sugar Maple – Oak Deciduous Forest

This forest community represents a transitional area between the two properties and bordering the 1017 Brébeuf property. Trees within this community are more mature and of larger size. Sugar Maple and Red Oak form the majority of the canopy, with occasional species including White Ash and American Elm present. Signs of the Emerald Ash borer were evident throughout this community with several dead White Ash trees noted. Ground layer was dominated with Poison Ivy and Raspberry.

6. FODM11 Naturalized Deciduous Hedgerow

This community is present in two separate polygons within both properties, including along the existing driveway at 1029 Brébeuf, and along the western property line at 1017 Brébeuf. Both polygons contain large, mature hardwood trees including Sugar Maple and Trembling Aspen.

7. THDM2-1 Sumach Deciduous Thicket

This community is considered as a transitional community between the FODM5-3 and MEGM4-1 communities. It is almost entirely composed of Staghorn Sumach with little to no companion species documented.

Ephemeral Inclusions

Three separate areas displaying ephemeral wetland conditions have been mapped and delineated in the field by Birks NHC (Figure 2).

The southern feature is directly associated with the drainage conditions of the site and impeded flow via a blocked culvert. Site conditions suggests that drainage was historically created to maintain flows within the dug swale, flowing to Brebeuf Road. However, due to lack of maintenance, water has been pooling in this area and wetland plants have established including Red-osier Dogwood, Bebb's Willow, Pussy Willow, and Sensitive Fern. Surface water was observed in this area between May and June. This area has been measured at 0.12 ha.

The northern area, measured at 0.11 ha, is a small woodland ephemeral pool with surface water observed throughout the spring and summer seasons. It has been determined through hydrogeological investigations that this feature contributes to groundwater recharge of the Upper Unit, described as a perched groundwater system consisting of fine-grained upper sediments that retard the downward progression of infiltrating precipitation and provide an opportunity for shallow interflow above the underlying unsaturated sand and gravel (Harden 2024).

A smaller (0.04 ha) inclusion is present along the eastern property limit and is largely comprised of Willow and Dogwood species. No standing water was documented within this area.

No amphibian breeding activity was observed within the mapped wetland inclusions.

Given the relatively small size of these areas, they have not been assigned separate wetland community codes and are therefore considered inclusions within larger ELC communities.

4.1.2 Vascular Plants

No Species at Risk or rare plant species were documented within both properties during the vegetation surveys. A total of 84 plant species were identified within the properties (Appendix C). None of the species are considered provincially rare and/or Species at Risk.

4.2 Site Drainage

A defined channel is present within the southern portion of the 1029 Brébeuf Road property and along Brébeuf Road, eventually entering a culvert and crossing into adjacent lands to the west (Figure 2). This feature was assessed to determine any potential function associated with fish habitat, including any contributions to downstream reaches.

At the time of the 2024 site visits, this feature was completely dry with no evidence of recent flows. A blocked culvert located on the property along the access trail retains water on site, hence inhibiting downstream flows. Within adjacent lands to the west, channelization continues within the woodland portions of that property with small areas of groundwater discharge observed which flowed as surface water. Evidence of channelisation is absent once the feature enters the maintained golf course lands.

A hydrogeological assessment was was completed (Harden Environmental, 2024), which confirmed the property is within the drainage area contributing to the observed surface water feature on the adjacent golf course property.

4.3 Wildlife Habitat

4.3.1 Amphibians and Reptiles

Amphibian calling surveys were completed following the identification of wetland conditions. These habitat features are comprised of ephemeral wetland features, such as woodland pools and seasonal drainage. Two stations were surveyed in May and June 2024. No amphibians were documented calling within the properties during the surveys. There was no evidence (*i.e.,* egg masses) of amphibian and/or salamander breeding within the properties.

No targeted reptile surveys were conducted within the Study Area. Given the habitats present, species range maps, and observations in the general area (Ontario Nature, accessed 2024), the following reptiles are expected to be present in the Study Area: Eastern Gartersnake and Milksnake.

4.3.2 Dawn Breeding Birds

A total of 33 bird species were identified on the property during dawn breeding bird surveys and through incidental observations. In total, 20 species were determined to have 'possible' breeding evidence associated with the property, and 10 as having 'probable' evidence. Three species were observed on the property outside of the breeding season for those individuals. The surveys confirmed the presence of Eastern Wood-pewee (Probable) and Golden-winged Warbler (Possible), both species listed as Special Concern. The remainder of the species identified on the property are common to the region and are considered to be Secure (S5) or Apparently Secure (S4).

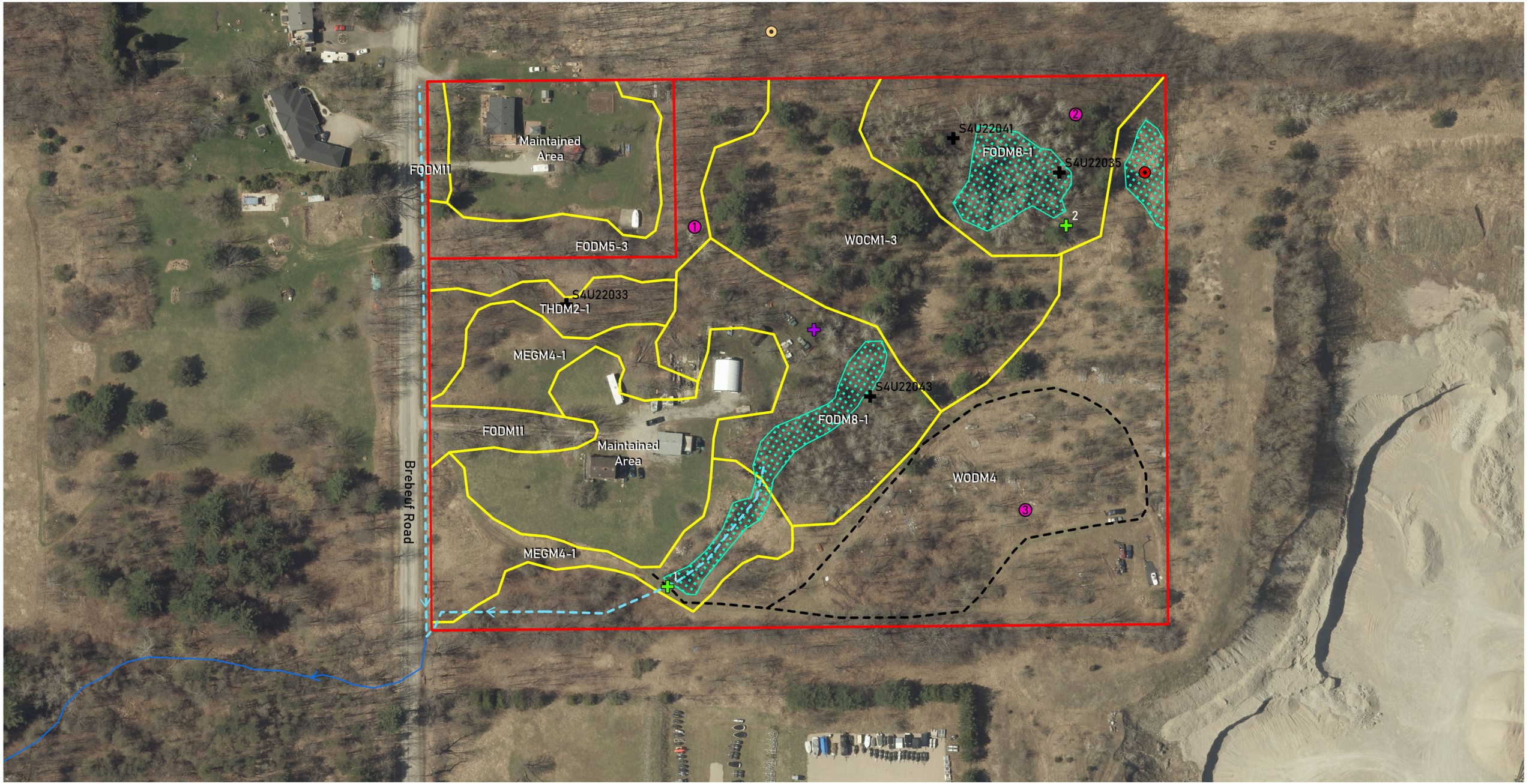
In general, the species identified during the dawn breeding bird surveys represent a variety of common habitat types that are found on the property. Many species, such as American Robin, American Goldfinch, Mourning Dove, and Blue Jay, are considered to be habitat generalists, while others, such as Red-eyed Vireo, Mourning Warbler, Ovenbird, and Black-and-white Warbler are more commonly found in forest habitat types. One species identified as Area Sensitive species (OMNR, 2000) was observed, which demonstrated possible breeding evidence associated with the property (Ovenbird). Species diversity of Area Sensitive species as well as the lack of interior woodland habitat was not sufficient to qualify any habitats as SWH, or identify any other avian dependant SWH, as outlined in Appendix F.

A list of bird species encountered on the property through breeding bird surveys and incidental observations can be found in Appendix D.

4.3.3 Mammals

Typical mammals observed in rural and natural settings are expected to utilize the habitats within the Study Area. Observations of individuals or evidence of Raccoon, Grey Squirrel, Red Squirrel, Eastern Cottontail, Eastern Chipmunk, and White-tailed Deer were recorded in the Study Area. Based on available background mapping from LIO, no deer wintering habitat (and thus SWH) is present within the Study Area.

Discussions related to bat species is provided in Section 5 below.



1017 & 1029 Brebeuf Road

Town of Midland

Figure 2. Existing Conditions & Survey Locations

- Properties Limit
- Watercourse (LI0)
- Site Drainage (Jones Consulting Group/Birks NHC)
- Access Trail

Survey Locations

- Bat Acoustic Monitor
- Nocturnal Bird
- Amphibian Calling
- Dawn Breeding Bird

- ELC Vegetation Community
- Ephemeral Wetland Inclusion

SC Bird Locations

- EAWP
- GWWA

WODM4 Dry-Fresh Deciduous Woodland
FODM8-1 Fresh-Moist Poplar Deciduous Forest
WOCM1-3 Dry-Fresh White Pine Coniferous Woodland
MEGM4-1 Open Graminoid Meadow
FODM5-3 Dry-Fresh Sugar Maple - Oak Deciduous Forest
FODM11 Naturalized Deciduous Hedge-row
THDM2-1 Sumach Deciduous Thicket

MAP DRAWING INFORMATION:
DATA PROVIDED BY: ESRI CANADA

MAP CREATED BY: SB
MAP CHECKED BY: BB
MAP PROJECTION: NAD 1983 UTM ZONE 17N

0 15 30 60 90 120 Meters

FILE LOCATION:
Path: C:\Users\S_Brady\BirksNHC\Birks NHC Team for all - Documents\Project Folders\04 - SBrady Projects\ArcGIS - Projects here\Projects - here\02-015-2023 Brebeuf

PROJECT: 02-015-2023 STATUS: DRAFT DATE: 09/07/2024

5 NATURAL HERITAGE FEATURES AND FUNCTIONS

In the following sections we summarize the range of natural heritage features and functions attributable to the study area based on existing designations/delineations by agencies and as revealed through the application of provincial guidelines for identification of significant natural heritage features and functions.

5.1 Provincially Significant Wetland

No Provincially Significant Wetlands are mapped within the 120 m study area (Figure 1).

5.2 Other Wetlands

Three small ephemeral wetland inclusion areas were identified and delineated in the field by Birks NHC (Figure 2). The province does not have any mapped wetlands within the 120 m study area. Due to the small size, these ephemeral wetland areas do not constitute wetland communities and are therefore considered an inclusion within the FODM8-1, WODM4, and MEGM4-1 communities. Wildlife function within these areas was limited to breeding birds. No amphibian breeding activity was documented within the properties.

5.3 Significant Woodland

A portion of the property is mapped as being within the 'Natural Heritage' designation of the Town's Official Plan (Appendix A). This is attributable to the presence of naturalized lands, including forested areas and a mapped drainage feature.

The significance of the woodland feature in the study area was assessed by Birks NHC according to the Natural Heritage Reference Manual (MNR, 2010, Section 7.3.1, Table 7-1). The assessment table is provided as Appendix G of this report. The woodland feature is part of a contiguous woodland feature that extends beyond the property to the north and west. The total area of the woodland was measured to be approximately 4.10 ha; 1.5 ha of which falls within the properties. According to the Natural Heritage Reference Manual (MNR, 2010), the woodland meets the *water protection* criteria to be considered candidate significant woodland.

A Natural Heritage System Review for the Town of Midland (SSEA, 2009) determined that woodlands located within the settlement area and larger than 2 ha in size may be considered locally significant woodlands.

Therefore, for the purposes of this study, the mapped woodland feature will be considered as a Significant Woodland and impacts will be assessed accordingly.

5.4 Significant Valleylands

Similar to Significant Woodlands, the PPS protects Significant Valleylands south and east of the Canadian Shield. In highly urbanized or fragmented landscapes, such as in southern Ontario, valleylands may constitute the only remaining natural areas within the planning area and are often considered essential

for establishing connectivity within a natural heritage system. As per Section 2.1.5 of the PPS, unless it has been 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 Significant Valleylands in Ecoregions 6E and 7E, or on adjacent lands.

No Significant Valleylands are mapped within the study area nor does the landscape suggest that Significant Valleylands need to be considered further.

5.5 Significant Wildlife Habitat

As a part of this assessment, Birks NHC staff reviewed the MNRF's Significant Wildlife Habitat Technical Guide (2000) and the accompanying Ecoregion 6E Criteria Schedules (MNRF, 2015) to assess the potential for Significant Wildlife Habitat to be present in the study area. The full assessment table is included as Appendix F. Based on that assessment, it was determined that the following candidate significant wildlife habitat functions may be associated with the property and adjacent lands:

- Bat Maternity Colonies
- Reptile Hibernaculum
- Special Concern and Rare Wildlife Species

5.5.1 Bat Maternity Colonies

Bat Maternity Colonies for Silver-haired Bat and Big Brown Bat are identified as candidate SWH because known locations of forested bat maternity colonies are extremely rare in Ontario. According to Significant Wildlife Habitat Criteria Schedules for Ecoregion 6E (MNRF, 2015), maternity colonies located in mature deciduous or mixed forest stands with more than 10 large diameter (greater than 25 cm diameter at breast height) wildlife trees per hectare are candidates for SWH designation.

The majority of the woodlands associated with the study area are characterized as young and early successional communities. Limited standing snag trees of sufficient size were noted to occur within the FODM8-1, FODM5-3, and FODM11 communities, including large Sugar Maple, Red Oak, and Trembling Aspen trees that are in various stages of decay. Acoustic monitoring was completed in June 2024 (Appendix E). Both species were documented at all four monitoring locations, with S4U22033 recording the highest activity. A total of 1285 combined passes were recorded at this location which correlates to the expected activity level due to the proximity to foraging habitat and hedgerows (movement corridor). This represents approximately 128 passes per night over the course of the 10-day period. The remaining monitors recorded 113 (S4U22043), 79 (s4U22035), and 10 (S4U22041) passes combined for the species.

On average, with the exception of S4U22033, 202 passes for the two species per night were recorded for the properties. This is considered relatively low activity and is representative of candidate bat day roosting habitat, rather than a maternity colony in proximity to the monitor. As noted, S4U22033 was placed in an area intended to record movement and foraging activity along the forest edge which supports the higher activity levels of the four recorders. However, the timing of the activity (*i.e.,* highest 1hr after sunset) could suggest that a roost is present in the general area and that bats are arriving to the properties to forage soon after exiting a roost, which is typically between sunset and 30 minutes

afterwards. It is common for Big Brown Bats to form colonies within anthropogenic structures, which are abundant throughout the study area.
Based on the collected acoustic data, it is unlikely that a natural (*i.e.,* forest) maternity colony for Big Brown Bat and Silver-haired Bat to be present within the forested portions of the properties.

5.5.2 Reptile Hibernaculum

Snakes overwinter in Ontario by accessing underground hibernation sites below the frost line. They will utilize rock crevices, rodent burrows, tree root systems and structures such as old building foundations to get below ground deep enough so they will not freeze. Because of the variability in features that snakes will use for hibernation, snake hibernaculum may be found in almost any habitat (except for very wet ones). Since features associated with this function appear to be common in the landscape, reptile hibernaculum SWH may be present within the study area, particularly in the woodlands where reptiles may gain access to areas below the frost line through tree root systems.

5.5.3 Special Concern and Rare Wildlife Species

Habitat for all Special Concern and provincially Rare (S1-S3, SH) plant and animal species is considered SWH. The following Special Concern and provincially rare wildlife species were identified as confirmed or potentially occurring within the study area:

Eastern Wood-pewee (Special Concern)
The Eastern Wood-pewee is a small forest bird that lives in the mid-canopy layer of forest clearings and edges of deciduous and mixed forests. It is most abundant in intermediate-aged forest stands with little understory vegetation (MECP, 2021). Eastern Wood-pewee was documented at survey station 1 during both dawn breeding bird surveys (probable breeding evidence). The location of the individual was determined to be within woodland habitats adjacent to the property to the north (Figure 2).

Golden-winged Warbler
Golden-winged Warblers prefer to nest in areas with young shrubs surrounded by mature forest – locations that have recently been disturbed, such as field edges, hydro or utility right-of-ways, or logged areas (MECP, 2021). These warblers will mate with Blue-winged Warblers, producing hybrids with characteristics from both species. The species was recorded once during the June 4 dawn breeding bird survey and therefore only possible breeding evidence is recorded.

5.6 Areas of Natural and Scientific Interest

No Areas of Natural and Scientific Interest are located in the study area.

5.7 Drainage Feature & Fish Habitat

As discussed, a mapped drainage feature is present within the southern portion of the 1029 Brébeuf property and extends across Brébeuf Road through a culvert into adjacent lands to the west, eventually entering the Brooklea Golf Course lands. This feature was dry throughout the 2024 field season, including during spring freshet. Evidence of flow was noted as channelisation was observed within the

property, along Brébeuf Road, and within existing woodland cover on the Brooklea Golf Course property. Natural channelisation beyond the woodland is non-existent as the golf course has altered the feature through drainage alterations and irrigation. Beyond the woodland, overland flow is expected to occur during spring freshet which drains into an existing golf course pond. Brooklea Creek is approximately 340m to the south of the pond. There is no expectation that overland flow beyond the pond would occur in a way that contributes to direct fish habitat present within Brooklea Creek.

Therefore, the drainage feature does not contain or contribute to direct fish habitat.

5.8 Habitat of Threatened and Endangered Species

Ontario' ESA identifies Species at Risk through O. Reg. 230/08, and which includes species listed as Extirpated, Endangered, Threatened, and Special Concern. For the purpose of this assessment, only species listed as Endangered and Threatened receive species and habitat protection through the ESA. The habitat requirements of those species listed as Threatened and Endangered under the ESA were considered in relation to the habitat features noted within the property limits and the adjacent lands (*i.e.,* within 120m). Species designated as Special Concern may receive protection under the SWH provisions of the PPS and are addressed in our discussion of SWH above.

The Species at Risk assessment, including an analysis of the habitat requirements of all Species at Risk reported to occur in the area to identify those having potential to occur within the property and adjacent lands, is provided in Appendix H. Based on habitat use, site knowledge and data available, it was determined that potential habitat for the following species may be present in the study area:

- Mammals: Little Brown Myotis (Endangered), Northern Myotis (Endangered), Tri-colored Bat (Endangered)
- Bird: Bank Swallow (Threatened)

5.8.1 Endangered Bats

Important habitat functions for bats include hibernacula, maternity roost, day roosts, and foraging habitat. Of these habitat types, no features with potential to function as hibernacula exists within the properties and study area.

Natural roosting habitat can take the form of any tree with appropriate snag features such as loose bark, cracks or crevices. Day roosts are those that are used by males and non-reproductive females as they move across the landscape, while maternity roosting habitat is found in woodlands providing a relatively high density of large wildlife cavity trees (*i.e.*, snags). The properties contain forest and woodland communities that may provide habitat for day roosting. Although the natural forest communities are predominately young and are characterised as early successional communities, larger individual trees (*i.e.,* Sugar Maple, Red Oak, Trembling Aspen) were noted within the FODM5-3, FODM8-1, and FODM11 Hedgerow communities (Figure 2). These trees were noted to contain suitable features including loose bark, cavities, and were in early stages of decay.

Anthropogenic Roosting

Based on the review of the structures present within the properties, it was assessed that anthropogenic habitat for Endangered bat species was potentially present. Exit surveys for the structure and hedgerow trees were completed on June 19 and June 20, 2024, to determine whether bats were utilizing the structures and trees for roosting (including maternity colonies). No bats were documented exiting the structures and hedgerow trees. It is our understanding that an application for demolition of the structure is in progress. The loss of this structure is unlikely to constitute contravention of the ESA as it relates to Endangered bat species anthropogenic habitat. No further consideration for this habitat function is therefore required.

Forest Roosting

Acoustic monitoring surveys confirmed the presence of Little brown Myotis, as well as *Myotis sp.* and *HighF* which may or may not include Northern Myotis, and Tri-colored Bat (Appendix E). S4U22033 recorded the highest number of *Myotis sp.* (including high frequency calls) with a total of 47 Species at Risk bats, which represents approximately 4.7 bat passes per night on average. The remaining monitors recorded 10 (S4U22035), 5 (S4U22041), and 30 (S4U22043) *Myotis sp.* passes. Overall, these activity levels are considered relatively low and are indicative of the day roosting habitat. Activity levels at all four locations were generally constant throughout the night, with no observed increases in activity surrounding sunset and sunrise windows, which would indicate that bats are not exiting from a nearby maternity colony roost. In past and recent experience monitoring known bat maternity colonies, Birks NHC Ecologists recorded a high number of bat passes with averages of 150-300 bat passes per night, with a significant increased activity recorded during the sunset and sunrise 30-minute intervals which would suggest bats exiting a roost to forage and returning prior to sunrise. Therefore, the acoustic data collected for this project does not suggest the presence of a bat maternity colony. Notwithstanding, day roosting for non-reproductive individuals may be occurring within the Study Area.

5.8.2 Bank Swallow (Threatened)

Bank Swallow is a small bird that nests in burrows in settings where there are vertical faces in silt and sand deposits. There are three main types of habitats occupied by Bank Swallows: coastal cliffs, riverbanks, and active sand and gravel pits (MECP, 2022). A Bank Swallow breeding colony is composed of multiple burrows with nesting chambers at the end of the burrows. In natural habitats, mechanisms such as erosion and undercutting of stream banks maintain vertical faces suitable for Bank Swallow nesting, and in anthropogenic sites such as sand and gravel pits, Bank Swallows use vertical faces that are maintained by human activities.

Bank Swallow receives habitat protection under the ESA. The General Habitat Description for the Bank Swallow (MECP, 2022) provides information on the area of habitat protected by the ESA, and comprises three categories:

- Category 1 The Bank Swallow breeding colony, including the congregation of burrows and the substrate between and around them;

- Category 2 The area within 50 m in front of the breeding colony bank face (*i.e.*, the vertical face that is directly associated with and supports, the Category 1 habitat) to allow Bank Swallows to enter and exit burrows; and
- Category 3 The area of suitable foraging habitat within 500 m of the outer edge of the breeding colony.

The adjacent Team Aggregates Gravel Pit was noted to contain vertical faces and therefore is considered for potential habitat. For the purpose of this study, breeding evidence was not recorded for the adjacent lands. Notwithstanding, the proposed development could result in disturbance to potential nesting Bank Swallow and is therefore being considered within this report.

5.9 Natural Heritage Features Summary

The results of field surveys, review of background information and analysis indicate that candidate significant natural heritage features and functions are associated with the study area. Our impact assessment will consider potential impacts only to features and functions summarized in Table 2.

Table 2: Natural Heritage Features and Functions Summary

Natural Heritage Feature and Function	Within the Properties	Within 120 m of the Properties	Actions Required
Provincially Significant Wetland	None	None	No actions required.
Other Wetland	Ephemeral Wetland Features	None	**Evaluation for potential impacts required.**
Significant Woodlands	Locally Significant Woodland feature (1.5 ha)	Locally Significant Woodland feature (4.10 ha)	**Evaluation for potential impacts required.**
Significant Valleylands	None	None	No actions required.
Significant Wildlife Habitat	Potential: • Bat Maternity Colonies • Reptile Hibernaculum • Special Concern and Rare Wildlife Species (Eastern Wood-pewee, Golden-winged Warbler)		**Evaluation for potential impacts required.**
Provincial Areas of Natural and Scientific Interest	None	None	No actions required.
Fish Habitat	None	None	No actions required.
Habitat of Threatened or Endangered Species	Potential: • Day Roosting Habitat for Endangered Bats	Potential: • Day Roosting Habitat for Endangered Bats • Bank Swallow	**Evaluation for potential impacts required.**

6 IMPACT ASSESSMENT

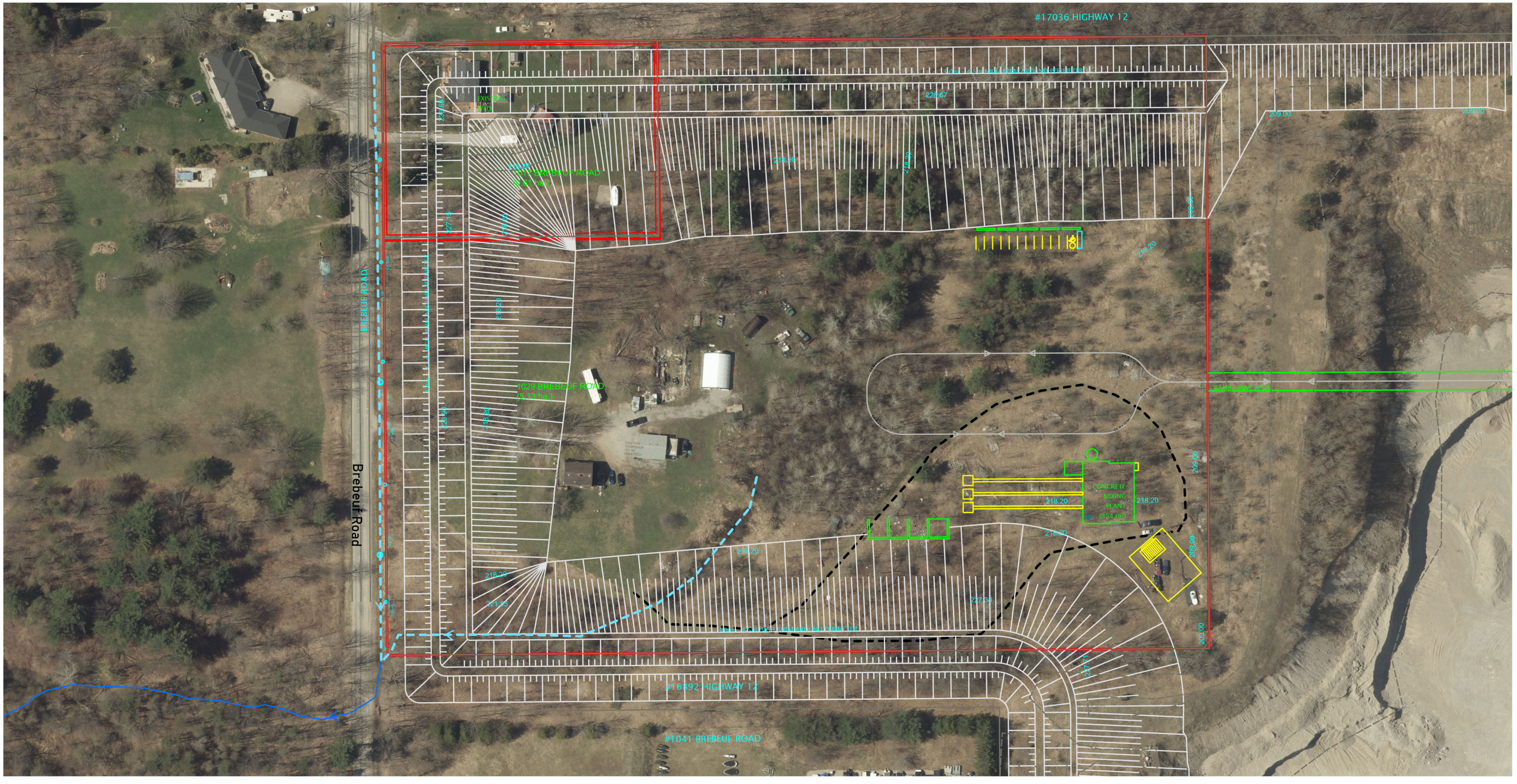
The intent of this study is to identify natural heritage features and functions associated with the study area and determine if potential impacts could arise from the proposed development. Because functions are generally grouped into features, impacts will be considered as they relate to the following natural heritage features or other areas and their associated functions:

- Ephemeral Wetland Features
- Locally Significant Woodlands:
    - Water Protection Criteria
    - Potential Candidate Significant Wildlife Habitat (Eastern Wood-pewee, Bat Maternity Colonies, Reptile Hibernaculum)
    - Potential Day Roosting Habitat for Endangered Bat Species (FODM8-1, FODM5-1, and FODM11)
- Adjacent Aggregate Pit:
    - Potential Habitat for Bank Swallow (Threatened)
- Drainage Feature – Contributing to Downstream Habitats

6.1 PROPOSED DEVELOPMENT

The proposed development plan involves the construction of a concrete ready mix plant to be accessed via the existing adjacent Teams Aggregate gravel pit located to the east of the properties (Figure 3). The development will also require site grading and a berm of 3-4.5m high around the perimeter. It is our understanding that the development will be phased in order to allow for the gradual development of the properties, beginning with the concrete ready mix plant area. The proposed development includes significant earth movement to reduce the surface elevation of the site from the existing 221-230 m Above Mean Sea Level ("**AMSL**") to a proposed flat base elevation of 218.20 m AMSL within the batch plant area, with a ramp and additional grading on the adjacent aggregate site to the east to connect to the existing 209.00 m AMSL quarry floor elevation (Harden, 2024).

The proposed development will involve the demolition of the existing residential dwellings present within both properties, as well as the loss of the woodland and forest communities.



1017 & 1029 Brebeuf Road

Town of Midland

Figure 3. Proposed Site Plan

Properties Limit
Watercourse (LIO)
Access Trail
Site Drainage (Jones Consulting Group/Birks NHC)

MAP DRAWING INFORMATION:
DATA PROVIDED BY: ESRI CANADA

MAP CREATED BY: SB
MAP CHECKED BY: MF
MAP PROJECTION: NAD 1983 UTM ZONE 17N

0 15 30 60 90 120 Meters

FILE LOCATION:

Path: C:\Users\S_Brady\BirksNHC\Birks NHC Team for all - Documents\Project Folders\04 - SBrady Projects\ArcGIS - Projects here\Projects - here\02-015-2023 Brebeuf

PROJECT: 02-015-2023 STATUS: DRAFT DATE: 01/08/2024

6.2 Direct Impacts

Direct impacts are those that are immediately evident as a result of a development. Typically, the adverse effects of direct impacts are most evident during the site preparation and construction phase of a development. As discussed, the development of these two properties will be phased and the grading of the whole area of the properties will not occur immediately. Notwithstanding, the application is intended to allow for grading within both properties and therefore the impact assessment will be based on the complete build-out of the properties. Based on our findings, potential impacts of the proposed development include the following:

- Tree and Vegetation Removals within Candidate Locally Significant Woodland;
- Loss of Potential Species at Risk Habitat;
- Loss of Ephemeral Wetland Features;
- Changes to the hydrology/water quality entering natural heritage features; and,
- Disturbance to Wildlife and Wildlife habitats.

6.2.1 Tree and Vegetation Removals within Candidate Locally Significant Woodland

Vegetation removals will be required for the grading of the properties and construction of the concrete ready mix plant which will result in the loss of forest and woodland communities within the property, including the FODM5-3 and FODM8-1 vegetation communities which form part of the mapped contiguous woodland feature determined to be locally significant, measured at 4.10 ha. In total, 1.5 ha of the mapped contiguous woodland falls within the properties and therefore are proposed for eventual removals (timing of removals to be determined based on extraction schedule). These proposed tree removals within the properties would constitute 36.5% of the 4.10 ha total woodland feature.

A Natural Heritage System Review for the Town of Midland (SSEA, 2009) determined that woodlands present within the properties may contribute to locally significant woodlands, based on size (woodland patch greater than 2 ha in size within settlement area). With the proposed development, the contiguous woodland feature would continue to meet the local size criteria for significant woodland within a settlement area. As previously discussed, this treed area is currently composed of a large area of disturbed regrowth including apple and sumac species which are growing over piles of old building materials and other waste. This type of habitat is not typically encompassed within those important natural heritage features which would be considered to be significant natural heritage features. Further, if the area is allowed to be removed it is important to note that the remaining woodland would continue to meet the criteria to be considered candidate locally significant woodland.

The Natural Heritage Reference Manual was reviewed to determine whether the contiguous woodland feature meets certain provincial criteria to be considered candidate significant woodland. Of those criteria, this woodland feature was determined to meet the water protection criteria. Upon review of the development application, it was concluded that the proposed development will not reduce the existing ground water recharge function of the properties. Instead, there will be an increase in groundwater infiltration due to the removal of soil and aggregate (Harden Environmental, 2024). Therefore, the water protection criteria associated with the groundwater recharge of the properties will

be maintained post-development and the loss of 1.5 ha of woodland habitat is not expected to result in any changes to the contiguous woodland feature's contribution to groundwater recharge.

Therefore, there is no expectation that the proposed development will result in a negative ecological impact to the identified locally significant woodland feature as it will maintain current function post-development.

6.2.2 Loss of Species at Risk Habitat and Incidental Harm

Endangered Bat Species – Little Brown Myotis, Northern Myotis, Tri-colored Bat

As discussed, the FODM11, FODM8-1, and FODM5-3 forest communities were determined to provide potential day roosting habitat for those Endangered Bat species. Acoustic monitoring completed in June 2024 indicates that the forest communities and anthropogenic structure do not provide maternity colony habitat for Endangered Bat species.

Notwithstanding, day roosting for non-reproductive individuals may be occurring within the properties. The loss of day roosting habitat does not constitute a loss of key habitat for *Myotis* species. Day roosting habitat is not a limiting factor for the species and is prominently available throughout the Town of Midland and larger Simcoe County landscapes, including anthropogenic structures and woodlands. The remaining 2.6 ha woodland will contribute to provide day roosting opportunities post-development.

Following the implementation of mitigation measures provided in Section 7 (such as timing windows for vegetation removal), it is unlikely that a bat would sustain incidental harm during course of the proposed activities.

Bank Swallow

As discussed, habitat categorization for Bank Swallow under the ESA identifies Category 1 habitat as the Bank Swallow breeding colony, including the congregation of burrows and the substrate around them, and Category 2 habitat as the area within 50 m in front of the breeding colony bank face (MECP, 2022). Category 3 habitat includes suitable foraging habitat from the outer edge of the colony to 500 m and is considered to have a high tolerance to alteration (MECP, 2022).

Under Section 23.14 (pits and quarries provision) of O. Reg. 242/08 made under the ESA, eligible aggregate producers may undertake activities that would otherwise contravene the ESA, provided they register and follow the regulatory conditions. The regulatory conditions include developing and implementing a mitigation plan and reducing adverse effects on the species and its habitat.

As discussed, breeding evidence of Bank Swallows was not determined as part of this study. However, due to the presence of suitable vertical banks within the adjacent Teams Aggregate gravel pit, presence is assumed. As part of the proposed development, some vertical banks will be removed while some will be created. The Best Management Practices for the Protection, Creation and Maintenance of Bank Swallow in Ontario (OMNRF, 2017) provides guidance to undertake the preparation of a mitigation plan, including the maintenance of nesting habitat and methods to deter colonies to establish within active

areas of the pit. As part of the proposed development, therefore, a Bank Swallow mitigation plan should be completed by a qualified Ecologist to ensure compliance with the ESA.

Therefore, the proposed development can occur while ensuring compliance with the ESA as it relates to Bank Swallow.

6.2.3 Loss of Ephemeral Wetland Features

As discussed, three separate areas have been identified by Birks NHC as containing ephemeral wetland conditions. Wildlife habitat associated with the features was limited to dawn breeding birds. No amphibian breeding was documented within either feature. Given the small size of the features, they do not represent wetland communities but instead are identified as ephemeral wetland inclusions within larger ELC communities.

Given the lack of wildlife habitat functions, small size of the features, and lack of connectivity to larger wetland complex, the loss of these three features does not constitute an impact on the local availability of wetland habitats. Following the implementation of mitigation measures provided in Section 7, there is no expectation that the loss of these features would constitute a negative ecological impact to wetland habitat availability.

6.2.4 Changes to the Hydrology Entering Sensitive Features

As discussed, the existing drainage feature within the 1029 Brébeuf property is expected to contribute seasonally to downstream reaches of the feature prior to entering the maintained golf course lands. Beyond the maintained golf course lands and existing pond, feature connectivity to the permanent Brooklea Creek is not expected to occur. Therefore, the feature does not contribute to downstream fish habitats.

The proposed development would result in the removal of the drainage feature within the property limits which will reduce water contributions to the overall feature by approximately 30% (Harden Environmental, 2024). From the natural heritage perspective, this reduction is not expected to result in impacts to downstream habitats which have been determined to be absent of any fish habitat functions. The receiving golf course pond may receive less surface water flows; however, this pond is considered to be offline and therefore not considered fish habitat according to the definition provided within the Federal *Fisheries Act*, 1985 as the features lack a direct connection to downstream fish habitat. Furthermore, no wetland communities that would be receiving ecological benefits from the drainage feature were identified within those adjacent lands.

Therefore, the proposed development is not expected to result in any impacts to the overall hydrology of the study area as it relates to natural heritage features and functions.

6.2.5 Loss and Disturbance to Wildlife and Wildlife Habitat

Typical wildlife species observed in settlement areas may utilize the habitat within the properties. Forest communities, specially the FODM8-1 and FODM5-3 communities within the properties may also function as SWH for bat maternity colonies, reptile hibernaculum, and Special Concern wildlife habitat for Eastern Wood-pewee (adjacent lands) and Golden-winged Warbler (possible breeding). Habitat features required for those SWH functions would include forested habitats, forest edge, and the cavity trees contained within. The development, as proposed, would remove approximately 1.5 ha of forest habitat which provides the above listed functions. The remaining contiguous woodland feature measured at 2.6 ha, however, is expected to maintain current ecological functions and wildlife habitat features post-development. It is expected that those listed wildlife species would continue to access and utilize adjacent natural habitats to the north of the development.

Following the implementation of mitigation measures provided in Section 7, there is no expectation that the proposed development would result in any direct impacts to wildlife or their habitats.

6.3 Indirect Impacts

Indirect impacts are those that do not always manifest in the core development area but in the lands adjacent to the development. Usually this comes as a result of the project or human use of the project site following completion of the project. Indirect impacts of the proposed development include:

- Increase in Noise, Dust, and Lighting
- Release of contaminants

6.3.1 Increase in Noise, Dust, and Lighting

There are some expectations that the proposed concrete ready mix plant will result in an increase in noise, lighting, and dust. It is our understanding that the facility as proposed will be accessible via the existing Teams Aggregate pit. Therefore, any increased trucking activity is not expected to impact the adjacent retained woodland and associated potential functions. The proposed grading plan incorporates a 3-4.5m perimeter berm to mitigate any potential dust and lighting within adjacent residential properties. The berm's function will also mitigate potential ecological impacts that may arise due to increased dust and lighting. Furthermore, it is our understanding that the proposed development will require separate Environmental Compliance Approvals for air, noise and stormwater management. Dust management is a component of any operating and licensed aggregate pit where the provincial standards under the *Aggregate Resources Act* requires the following:

1. Mitigate dust on site.
2. Apply water (or an approved dust suppressant) to processing areas and haul road to mitigate dust; and,
3. Must equip dust generating processing equipment with dust suppressing or collection devices if it is being operated within 300 meters of a sensitive receptor.

Therefore, there is no expectation that the proposed concrete ready mix plant and resource extraction would result in any indirect impacts to the retained natural heritage features and associated functions within adjacent lands.

6.3.2 Release of Contaminants

The proposed development and resource extraction may result in the increase of contaminants (*i.e.*, sediments, salt, gasoline, oil) in surface runoff. However, as discussed, the proposed development will reduce elevation of the site from the existing 221-230 m AMSL to a proposed flat base elevation of 218.20 m AMSL within the concrete ready mix plant, with a ramp and additional grading on the adjacent aggregate site to the east to connect to the existing 209.00 m AMSL quarry floor elevation (Harden, 2024). Therefore, any potential release of contaminants would not result in runoff to adjacent woodland and drainage features.

7 RECOMMENDATIONS AND MITIGATION MEASURES

Mitigation refers to the avoidance or reduction of impacts associated with the proposed activity through best management practices or other activities. As previously discussed, potential impacts were identified on the basis of the natural heritage functions potentially present within the study area as determined through the completion of comprehensive field surveys throughout 2023 and 2024 by Birks NHC Ecologists.

The following mitigation measures represent those that would be recommended on the basis of the above listed potential impacts which could result from the proposed construction of a concrete ready mix plant and site grading of the properties. Mitigation is intended to reduce the potential for impacts to ensure that the natural heritage features and functions will continue uninhibited by the proposed development. Thus, mitigation would be required to ensure that there are no negative impacts, and the development can proceed in conformity with the relevant planning documents and in compliance with environmental law.

7.1 OPERATIONS

7.1.1 Materials and Equipment

Development activities should be contained within the proposed development area. This area should be appropriately delineated prior to beginning grading and construction to ensure that no accidental deviation from the intended removals will occur.

Equipment maintenance during and post construction should be undertaken in an appropriate area. Tool and vehicle maintenance and cleaning should be done away from the retained natural areas in a manner that does not encourage the movement of cleaning or maintenance products including cleaners, oils or fuel into the neighboring forested areas. Fuel and chemical storage should follow appropriate

legislation to ensure that it is maintained and stored in a way that will not result in accidental release or spills to the neighboring forested areas, wetland or watercourse.

7.1.2 Sediment and Erosion Control

In advance of any vegetation clearing or earth works (*i.e*., clearing or grubbing) it is recommended that the development limits be established to prevent accidental encroachment onto natural areas on adjacent lands. We suggest that sediment and erosion controls be installed prior to all construction activities. Sediment and erosion controls must be maintained throughout construction and until vegetation is re-established post-construction.

7.2 Species at Risk

7.2.1 General

This report was produced based on the most up-to-date policy information, however, is not intended to act as a long-term assessment of potential Species at Risk. The ESA is recognized as being a 'proponent-driven' piece of legislation and therefore it is the responsibility of the landowner/developer to ensure compliance with the regulations made under this act. Should any of the species listed as Threatened or Endangered be encountered on the property it is recommended that a natural heritage ecologist or the MECP be consulted to determine the appropriate actions to avoid accidental contravention of the ESA. Given the dynamic character of the natural environment, as well as changes to policy (*i.e.,* new species listing), consideration is recommended in the interpretation of potential presence of Threatened or Endangered species as protected under the ESA. A review of the assessment provided within this report for the proponent prior to construction undertaken by a qualified Ecologist should be sufficient to ensure compliance with the ESA at that time.

All current Threatened or Endangered species listed under O. Reg. 230/08 with a currency date of June 28, 2024, made under the ESA have been considered within this report.

7.2.2 Endangered Bat Species

Site alteration involving the removal of large trees with potential to function as bat day roost habitat should occur outside of the active season (April 1 – October 31). If the work schedule requires that site alteration be completed during the active season, screening by an ecologist with knowledge of species present in the area should be undertaken to ensure that the risk of impacting Species at Risk has been evaluated and assumed to be low to non-existent.

7.2.3 Bank Swallow

As discussed, if it is determined that habitat for Bank Swallow is associated with areas that may require excavation, Section 23.14 (pits and quarries provision) of O. Reg. 242/08 made under the ESA, allows that eligible aggregate producers may undertake activities that would otherwise contravene the ESA, provided they register and follow the regulatory conditions. The regulatory conditions include developing and implementing a mitigation plan and reducing adverse effects on the species and its

habitat. A mitigation plan shall be completed as part of future application stages to ensure compliance with the ESA. Thus, where Bank Swallow nesting is identified, consideration should be given to ensure that appropriate actions are taken to avoid accidental contraventions of the ESA.

7.3 Migratory Birds

Construction activities involving the removal of vegetation should be restricted from occurring during the bird breeding season. Migratory birds, nests, and eggs are protected by the *Migratory Birds Convention Act*, 1994 and the *Fish and Wildlife Conservation Act*, 1997. Environment Canada outlines dates when activities in any region have potential to impact nests at the Environment Canada Website (https://www.canada.ca/en/environment-climate-change/services/avoiding-harm-migratory-birds.html)

For this location, vegetation removal should be avoided between April 1st and August 30th of any given year. If vegetation clearing is required between these dates, screening by an ecologist with knowledge of bird species present in the area could be undertaken to ensure that the vegetation has been confirmed to be free of nests prior to clearing.

8 CONCLUSIONS

This EIS was prepared for the Official Plan Amendment, Zoning By-law Amendment and Site plan applications for the properties identified as 1017 and 1029 Brébeuf Road in the Town of Midland. This final EIS report has been prepared to present the additional information collected during the 2024 comprehensive field surveys. The findings of the field surveys do not impact the conclusions as provided within the preliminary EIS report (Birks NHC, December 2023).

The results of this final EIS demonstrate that where Significant Natural Heritage Features and the associated ecological functions are identified, there is limited potential for negative impacts. Where potential was identified mitigation, measures recommended in this report have been developed to mitigate potential negative ecological impacts. Provided the mitigation measures recommended in this report are followed, the proposed development is not expected to impact any identified features negatively. Thus, the proposed development is expected to conform with the Town of Midland Official Plan and the Provincial Policy Statement and comply with the *Endangered Species Act*, 2007.

9 REFERENCES

Bird Studies Canada. 2008. Marsh Monitoring Program Participant's Handbook for Surveying Amphibians.

Bird Studies Canada. 2019. Canadian Nightjar Survey Protocol.

Committee on the Status of Species at Risk in Ontario (COSSARO). 2020. Ontario Species at Risk Evaluation for Chimney Swift Martinet ramoneur (*Chaetura pelagica*). https://cossaroagency.ca/wp-content/uploads/2021/04/ChimneySwift_August2020_Final.pdf

Endangered Species Act, Ontario (ESA). 2007. An Act to protect species at risk and to make related changes to other Acts. Bill 184 Chapter 6, Statutes of Ontario 2007.

Harden Environmental Services Ltd. 2024. Hydrogeological Assessment. Proposed Concrete Batch Plant. 1017 & 1029 Brebeuf Road, Midland Ontario.

Lee. H., *et al*. 1998. Ecological Land Classification for Southern Ontario. Ontario Ministry of Natural Resources and Forestry. SCSS Field Guide.

Ministry of Environment Conservation and Parks (MECP). 2022. Maternity Roost Surveys for Treed Habitats.

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Ministry of Environment Conservation and Parks (MECP). 2022. Bank Swallow General Habitat Description. https://www.ontario.ca/page/bank-swallow-general-habitat-description

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Ministry of Natural Resources (MNR). 2010. Natural Heritage Reference Manual for Natural Heritage Policies of the Provincial Policy Statement, 2010.

Ministry of Natural Resources and Forestry (MNRF). 2015. Significant Wildlife Habitat criterion schedules for Ecoregion 6E. MNRF Regional Operations Division & Northeast Region Resources Section. 39pp.

Natural Heritage Information Centre (NHIC) internet web page, 2020. Government of Ontario, Ministry of Natural Resources. (https://www.biodiversityexplorer.mnr.gov.on.ca/nhicWEB/mainSubmit.do).

Ontario Breeding Bird Atlas (OBBA). 2001. Ontario Breeding Bird Atlas Guide for Participants. 45p. Available: http://www.birdsontario.org/download/atlas_feb03.pdf

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APPENDIX A

Town of Midland Official Plan Schedule C

BIRKS

NATURAL HERITAGE CONSULTANTS

Town of Penetanguishene

Town of Penetanguishene

Township of Tiny

Township of Tay

Township of Tay

Township of Tiny

FULLER AVE

MIDLAND POINT RD

COUNTY RD 93

GOLF LINK RD

HARBOURVIEW DR

HARBOURVIEW DR

VINDIN ST

4TH ST

DOMINION AVE

HUGEL AVE

YONGE ST

BALM BEACH RD E

COUNTY RD 25

Exception

WILLIAM ST

Little Lake

COUNTY RD 93

KING ST

ANGELA SCHMIDT FOSTER RD

Georgian Bay

N

W

E

S

Town of Midland Official Plan Schedule 'C' Land Use

Legend

- Neighbourhood Residential
- Shoreline Residential
- Downtown
- Mixed Use Corridor
- Commercial Corridor
- Employment Area
- Employment Land
- Rural
- Natural Heritage
- Open Space
- Aggregate Extraction Area
- Schedule 'C1'
- Existing Development Approvals

Note: Specific policies pertaining to existing development approvals are outlined in Section 7.21

0 500 1,000 1,500 Metres

North American Datum 1983
Zone 17 North

November 20, 2019

Plan-It Geographical

MUNICIPAL PLANNING SERVICES EST 2012

PLAN B Natural Heritage

The Planning Partnership

APPENDIX B

SSEA Terms of Reference

From:	Andy Warzin
To:	Stephanie Brady
Cc:	Angie Mason; Ray Duhamel; Brandon Elliott; Michael MacMillan; Brad Baker; DRichardson@jonesconsulting.com; Stan Denhoed; Amanda Hoffmann; Tomasz Wierzba
Subject:	RE: 1017/1029 Brebeuf Road - EIS Terms of Reference
Date:	March 8, 2024 3:53:02 PM
Attachments:	image004.png image005.png image006.png image007.png image008.png image009.png image010.png image012.png

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Greetings,

Please see below comments from Severn Sound Environmental Association (SSEA) as it relates to the proposed terms of reference for the EIS document.

SSEA staff reviewed the EIS Terms of Reference (TOR) that you provided on March 1st, prepared by Stephanie at Birks. I offer the following comments on the proposed scope of work, including modifications or clarification (shown in red text) to what has been proposed (which is shown in *italics*), as well as some additional clarification on general EIS requirements. These comments only relate to natural heritage, and do not cover any other studies that approval agencies may require. The Town may have additional requirements.

1. *Site Assessment*

- *Review available background information for the properties and surrounding lands (within 120 metres) as well as available mapping from the Natural Heritage Information Centre (**Completed and presented in Preliminary EIS**);*
- *Attend the properties in the fall/winter of 2023/2024 to review preliminary natural heritage constraints (**Completed and presented in Preliminary EIS**);*
- *Review policies related to the natural heritage components of the proposed development, including municipal and provincial policies(**Completed and presented in Preliminary EIS**);* policy information to be updated, if needed, based on additional work undertaken in support of the EIS.
- *Complete a Species at Risk Assessment for the Study Area*, considering all species that have potential to be present based on habitat (i.e., not just known ranges/occurrences). Appropriate field work, including thorough searches, species-specific surveys and specialized survey effort or methodologies in the appropriate season(s), time of day, and habitat must be conducted to determine presence and address any potential SAR. Note that if there are changes to SAR designations (e.g., any newly listed SAR) prior to the EIS report being produced and submitted to the Town, the EIS would also need to include appropriate consideration for those species*;*
    a. *Complete an assessment of the existing residential structures within both properties for potential suitable bat and chimney swift roosting habitat and determine whether additional investigations are required;* preliminary information to be provided to Town/SSEA including specific protocols to be utilized if additional investigations for bats or chimney swifts are warranted *and*

b. *Undertake additional assessments of the FODM11, FODM8-1, and FODM5-3 forest communities to determine for potential maternity roosting habitat for Endangered Bat Species. The assessment will follow the Species at Risk Bats Survey Note 2022* (or successor document, if applicable) *provincial guidance document for treed habitats.*

- *Conduct field surveys to document existing natural heritage features, functions, and species. Surveys include:*
  a. *Classification of vegetation communities using protocols of the Ecological Land Classification (ELC) for Southern Ontario (Lee et al. 1998. Ecological land classification for southern Ontario: first approximation and its applications. SCSS Field Guide FG-02) (**Completed and presented in Preliminary EIS – potential refinements to the ELC mapping may be required following spring and summer surveys**);*
  b. *Two vascular plant surveys in the spring and summer 2024 to identify the potential for Species at Risk or rare plants* including documenting spring ephemerals and any plant species not captured in previous surveys*;*
  c. *Two dawn breeding bird surveys based on protocols of the Ontario Breeding Bird Atlas and Canadian Wildlife Service to compile a list of birds which require two site visits in June (2024);* note: point count surveys for forest birds should be 10 minutes in duration to align with the Forest Bird Monitoring Protocol; in addition, if noise levels due to traffic, industrial activity, etc. will influence detection of bird calls, sampling stations will be reviewed and modified (e.g., locating stations closer than the standard distance in survey protocols) as required, to improve detection of species, particularly those with quieter/more subtle songs and calls.
  d. *Frog calling surveys and observation surveys for non-calling amphibians (salamanders)* including larval surveys/searches if/where suitable habitat exists, *during the breeding season to address potential for amphibian breeding habitat (three site visits from April through June 2024);*
  e. *Record incidental observations of wildlife and evidence of breeding, sheltering/nesting, travel corridors etc. during field investigations.*

f. *Drainage assessment in the spring 2024 to determine function of the identified feature as it relates to downstream habitats.*

2. *<u>Report Preparation and Submission</u>*

- *Prepare one EIS report which will include the following:*
  a. *The scope of development;*
  b. *An outline of any significant natural heritage features or functions on the properties or adjacent lands within 120 meters, as defined by the Natural Heritage Reference Manual (2010) and the current Significant Wildlife Habitat Ecoregion Criteria Schedule* including addressing any potential/candidate SWH identified in the preliminary EIS and as identified through additional work undertaken in support of the EIS - describe all potential SWH and provide sufficient detail to determine whether these areas meet the current criteria for candidate or confirmed SWH as per the applicable Ecoregion Criteria Schedules*;*
  c. *Mapping outlining:*
     i. *The approximate boundary of the properties or study area*
     ii. *Ecological Land Classification*

communities with associated field data in table format

iii. *The locations of any identified natural heritage features or functions on the property*, including vegetation protection zones (where applicable) and candidate or confirmed SWH as per the Ecoregion criteria schedules. Mapping is to show the environmental features with aerial imagery, and also the proposed development together with (e.g., superimposed on) the environmental features and the imagery.

d. *An outline of any potential impacts to those features or functions associated with the proposed development;*
e. *Proposed mitigation to reduce the potential for any impacts to those features or functions including establishing appropriate buffers to natural heritage features based on an ecological rationale that will protect the features and their associated functions from anticipated or potential impacts of development, and identification of opportunities for enhancement, restoration, or monitoring;*
f. *Conclusion, recommendations and mitigations that align with the overarching policy framework of the property or study area.*

- *A final (signed) electronic copy of the EIS report will be provided for submission.* EIS report to be provided in an electronic format that allows copy/paste of text, to facilitate comments.

<u>EIS additional clarification/notes</u>:

1. Table C-3 of the Natural Heritage Reference Manual (MNRF, 2010) will be referenced with respect to breeding birds.
2. The EIS will inform the proposal and establish what portions of the subject lands can be developed based on an ecological rationale taking into consideration appropriate buffers/vegetation protection zones from natural heritage features, where applicable. Depending on on-site conditions and features, the developable portion(s) of the lands may or may not be consistent with initial concept(s).
3. Information on the location of many federal and provincial SAR should be treated as sensitive data, and in these cases, information must be **disclosed to the municipality and applicable agencies in a manner that does not make it part of public record** (e.g., mapping/ information provided separate from the main report, subject to restricted access). If any SAR or SAR habitat is identified during field investigations, the approval agency must be notified as soon as possible so that the requirement for any additional field work or specific surveys can be assessed or discussed.
4. The EIS and the biophysical surveys undertaken in support of it must be completed by appropriately qualified professional(s) with any applicable training or certification(s) relevant to the required work. Field work will be conducted during appropriate season(s), weather conditions and using suitable protocols to identify and evaluate the natural feature(s) and their ecological functions. All

field work will be described to the following standards:
    - Date, time, and duration of field work/survey (including start time, end time of site investigations)
    - Sampling locations and/or area searched (i.e., identified on a map)
    - Purpose of field work and survey protocol(s) used/ summary of investigation methods
    - Relevant temperature and weather conditions during site investigations (cloud cover, wind speed [Beaufort scale or km/h], precipitation [type and amount])
    - Personnel involved (name and qualifications)
5. Copies of the approved Terms of Reference and correspondence with relevant agencies will be included as appendices to the EIS.

With the clarification and additions or changes noted above in this email, the scope of work for the EIS is acceptable to SSEA. The SSEA would be pleased to participate in a site meeting with the Town and Birks. In the next couple of weeks, I am currently available:

- Wednesday, March 13 from 10:00 a.m.-noon
- Friday, March 15 from 9:00 a.m.-noon
- Wednesday, March 20 from 1:00-4:00 p.m.
- Thursday, March 21 from 10:30 a.m.-noon

Feel free to contact me, should you have any additional questions or comments.

Regards,

Andy Warzin, MCIP, RPP
Senior Planner, Community and Growth - Planning
P: 705-526-4275 Ext 2233
E: awarzin@midland.ca

Town of Midland
575 Dominion Avenue,
Midland, Ontario L4R 1R2
www.midland.ca

From: Stephanie Brady <sbrady@birksnhc.ca>
Sent: Tuesday, February 13, 2024 1:05 PM
To: Andy Warzin <awarzin@midland.ca>

Cc: Angie Mason <amason@hardenv.com>; Ray Duhamel <RDuhamel@jonesconsulting.com>; Brandon Elliott <belliott@sarjeants.com>; Michael MacMillan <mmacmillan@sarjeants.com>; Brad Baker <bbaker@birksnhc.ca>; DRichardson@jonesconsulting.com; Stan Denhoed <sdenhoed@hardenv.com>; Amanda Hoffmann <AHoffmann@jonesconsulting.com>
Subject: 1017/1029 Brebeuf Road - EIS Terms of Reference

Andy Warzin, MCIP, RPP, Senior Planner
Town of Midland

Good afternoon Andy,

As discussed during the pre-consultation meeting, Birks Natural Heritage Consultants, Inc. (Birks NHC) will be undertaking natural heritage assessments for the subject properties in completion of the final Environmental Impact Study (EIS) report. As outlined within the Preliminary EIS report (dated December 15, 2023), Birks NHC has undertaken initial field investigations, however additional field surveys are planned for the 2024 season.

The following represents our proposed Terms of Reference (TOR) for the final EIS to be reviewed by the Town of Midland (Town) and the Severn Sound Environmental Association (SSEA), acting as the Town's reviewer on this file:

1. Site Assessment

- Review available background information for the properties and surrounding lands (within 120 metres) as well as available mapping from the Natural Heritage Information Centre (**Completed and presented in Preliminary EIS)**;
- Attend the properties in the fall/winter of 2023/2024 to review preliminary natural heritage constraints (**Completed and presented in Preliminary EIS**);
- Review policies related to the natural heritage components of the proposed development, including municipal and provincial policies(**Completed and presented in Preliminary EIS**);
- Complete a Species at Risk Assessment for the Study Area;
    a. Complete an assessment of the existing residential structures within both properties for potential suitable bat and chimney swift roosting habitat and determine whether additional investigations are required; and
    b. Undertake additional assessments of the FODM11, FODM8-1, and FODM5-3 forest communities to determine for potential maternity roosting habitat for Endangered Bat Species. The assessment will follow

the Species at Risk Bats Survey Note 2022 provincial guidance document for treed habitats.

- Conduct field surveys to document existing natural heritage features, functions, and species. Surveys include:
    a. Classification of vegetation communities using protocols of the Ecological Land Classification (ELC) for Southern Ontario (Lee et al. 1998. Ecological land classification for southern Ontario: first approximation and its applications. SCSS Field Guide FG-02) (**Completed and presented in Preliminary EIS – potential refinements to the ELC mapping may be required following spring and summer surveys**);
    b. Two vascular plant surveys in the spring and summer 2024 to identify the potential for Species at Risk or rare plants;
    c. Two dawn breeding bird surveys based on protocols of the Ontario Breeding Bird Atlas and Canadian Wildlife Service to compile a list of birds which require two site visits in June (2024);
    d. Frog calling surveys and observation surveys for non-calling amphibians (salamanders) during the breeding season to address potential for amphibian breeding habitat (three site visits from April through June 2024);
    e. Record incidental observations of wildlife and evidence of breeding, sheltering/nesting, travel corridors etc. during field investigations.
    f. Drainage assessment in the spring 2024 to determine function of the identified feature as it relates to downstream habitats.

2. <u>Report Preparation and Submission</u>

- Prepare one EIS report which will include the following:
    a. The scope of development;
    b. An outline of any significant natural heritage features or functions on the properties or adjacent lands within 120 meters, as defined by the Natural Heritage Reference Manual (2010) and the current Significant Wildlife Habitat Ecoregion Criteria Schedule;
    c. Mapping outlining:
        i. The approximate boundary of the properties or study area
        ii. Ecological Land Classification communities with associated field data in table format
        iii. The locations of any identified natural heritage features or functions on the property
    g. An outline of any potential impacts to those features or functions associated with the proposed development;
    h. Proposed mitigation to reduce the potential for any impacts to those features or functions including establishing appropriate buffers to natural heritage features based on an ecological rationale that will protect the features and their associated functions from anticipated or potential impacts of development, and identification of opportunities for enhancement, restoration, or monitoring;
    i. Conclusion, recommendations and mitigations that align with the overarching policy framework of the property or study area.
- A final (signed) electronic copy of the EIS report will be provided for submission.

As discussed during the Pre-consultation meeting, we would like to coordinate site meeting

with SSEA and Town staff to discuss the preliminary findings and the proposed development of the property. Please provide us with your availability to conduct the site meeting and we will coordinate internally.

Thank you,

Stephanie Brady, HBES/Ecologist
Birks Natural Heritage Consultants, Inc.
o. (705)533-4124
c. (705)305-9102
w. www.birksnhc.ca
a. 23 Herrell Avenue, Barrie L4N 6T5

APPENDIX C

Vascular Plant Data

BIRKS

NATURAL HERITAGE CONSULTANTS

Appendix C. Vascular Plant List

		Provincial Ranking			ELC Community						
Scientific Name	**Common Name**	**S_Rank**	**N_Rank**	**ESA**	**WODM4**	**FODM8-1**	**WOCM1-3**	**MEGM4-1**	**FODM5-3**	**FODM11**	**THDM2-1**
Acer negundo	Manitoba Maple	S5	G5	NAR	x			x			x
Acer saccharum	Sugar Maple	S5	N5	NAR	x	x	x		x	x	x
Achillea millefolium	Common Yarrow	SNA	G5	NAR	x			x			
Alliaria petiolata	Garlic Mustard	SNA	GNR	NAR	x						
Ambrosia psilostachya	Perennial Ragweed	SU	G5	NAR				x			
Arctium minus	Common Burdock	SNA	GNR	NAR	x			x		x	
Asclepias syriaca	Common Milkweed	S5	G5	NAR				x			
Berteroa incana	Hoary False-alyssum	SNA	GNR	NAR				x			
Betula papyrifera	Paper Birch	S5	N5	NAR		x					
Bromus inermis	Smooth Brome	SNA	G5	NAR				x			
Carex gracillima	Graceful Sedge	S5	G5	NAR		x		x			
Carex vulpinoidea	Fox Sedge	S5	G5	NAR		x		x			
Carpinus caroliniana	Ironwood	S5	N5	NAR					x		
Cichorium intybus	Chicory	SNA	GNR	NAR				x		x	
Cornus alternifolia	Alternate-leaved Dogwood	S5	N5	NAR	x	x		x			
Cornus sericea	Red-osier Dogwood	S5	G5	NAR	x	x		x			
Crataegus punctata	Dotted Hawthorn	S5	G5	NAR	x	x					
Dactylis glomerata	Orchard Grass	SNA	GNR	NAR							
Daucus carota	Wild Carrot	SNA	GNR	NAR				x			
Dianthus armeria ssp. armeria	Deptford Pink	SNA	GNRTNR	NAR				x			
Dryopteris marginalis	Marginal Wood Fern	S5	N5	NAR	x	x	x		x		
Echium vulgare	Common Viper's Bugloss	SNA	GNR	NAR				x			
Elymus hystrix	Bottlebrush Grass	S5	G5	NAR				x			
Equisetum variegatum ssp. variegatum	Variegated Horsetail	S5	G5T5	NAR		x		x			
Erigeron hyssopifolius	Daisy Fleabane	S5	G5	NAR				x			
Erigeron philadelphicus	Philadelphia Fleabane	S5	N5	NAR				x			
Fragaria virginiana	Wild Strawberry	S5	N5	NAR				x		x	
Frangula alnus	Glossy Buckthorn	SNA	GNR	NAR		x					
Fraxinus americana	White Ash	S4	G5	NAR					x		
Fraxinus pensylvanica var. subintegerrima	Green Ash	S4	N5	NAR	x	x		x			
Galium palustre	Marsh Bedstraw	S5	G5	NAR		x		x			
Geranium robertianum	Herb-Robert	S5	G5	NAR			x				
Hypericum perforatum	Common St. John's-wort	SNA	GNR	NAR			x				
Juncus tenuis	Path Rush	S5	G5	NAR			x				
Juniperus communis	Common Juniper	S5	G5	NAR	x						
Leucanthemum vulgare	Oxeye Daisy	SNA	GNR	NAR				x			
Lilium lancifolium	Tiger Lily	SNA	GNR	NAR				x			
Lonicera tatarica	Tatarian Honeysuckle	SNA	GNR	NAR	x	x					
Lotus corniculatus	Garden Bird's-foot Trefoil	SNA	GNR	NAR				x			
Lunaria annua	Annual Honesty	SNA	GNR	NAR	x						
Maianthemum canadense	Canada Mayflower	S5	N5	NAR					x		
Maianthemum racemosum	Large False Solomon's Seal	S5	G5	NAR					x		

Appendix C. Vascular Plant List

		Provincial Ranking			ELC Community						
Scientific Name	Common Name	S_Rank	N_Rank	ESA	WODM4	FODM8-1	WOCM1-3	MEGM4-1	FODM5-3	FODM11	THDM2-1
Malus pumila	Common Apple	SNA	G5	NAR	x						
Medicago lupulina	Black Medic	SNA	GNR	NAR				x			
Medicago sativa ssp. sativa	Alfalfa	SNA	GNRTNR	NAR		x		x			
Onoclea sensibilis	Sensitive Fern	S5	N5	NAR		x					
Parthenocissus quinquefolia	Virginia Creeper	S4?	G5	NAR	x			x	x	x	
Phalaris arundinacea var. arundinacea	Reed Canary Grass	S5	G5TNR	NAR	x						x
Phleum pratense	Common Timothy	SNA	GNR	NAR				x			
Picea glauca	White Spruce	S5	N5	NAR			x				
Pinus strobus	Eastern White Pine	S5	G5	NAR	x						
Pinus sylvestris	Scots Pine	SNA	GNR	NAR	x	x					
Plantago lanceolata	English Plantain	SNA	G5	NAR			x				
Plantago major	Common Plantain	SNA	G5	NAR			x				
Populus balsamifera	Balsalm Poplar	S5	N5	NAR		x					
Populus tremuloides	Trembling Aspen	S5	G5	NAR	x	x	x	x	x	x	
Potentilla recta	Sulphur Cinquefoil	SNA	GNR	NAR				x			
Prunus pensylvanica	Pin Cherry	S5	G5	NAR	x						
Prunus serotina	Black Cherry	SNR	N5	NAR	x	x		x	x		
Prunus virginiana	Choke Cherry	S5	G5	NAR		x					
Pteridium aquilinum	Bracken Fern	S5	N5	NAR		x			x		
Quercus rubra	Northern Red Oak	S5	G5	NAR	x						
Ranunculus acris	Tall Buttercup	SNA	G5	NAR				x			
Rhus typhina	Staghorn Sumac	S5	G5	NAR	x			x			x
Ribes cynosbati	Prickly Gooseberry	S5	G5	NAR					x		
Rosa multiflora	Multiflora Rose	SNA	GNR	NAR				x			
Rubus allegheniensis	Allegheny Blackberry	S5	G5	NAR	x			x			x
Rubus idaeus ssp. idaeus	Common Red Raspberry	SNA	G5T5	NAR	x						
Rumex crispus	Curly Dock	SNA	GNR	NAR	x		x	x			x
Salix bebbiana	Bebb's Willow	S5	G5	NAR		x		x			
Salix discolor	Pussy Willow	S5	G5	NAR		x		x			
Silene vulgaris	Bladder Campion	SNA	GNR	NAR				x			
Syringa reticulata	Japanese Tree Lilac	SNA	GNR	NAR				x			
Taraxacum officinale	Dandelion	SNA	NNA	NAR	x	x	x	x	x	x	x
Thuja occidentalis	White Cedar	S5	N5	NAR	x		x				
Toxicodendron radicans	Poison Ivy	S5	G5	NAR	x	x	x	x	x	x	x
Tragopogon dubius	Yellow Goat's-beard	SNA	GNR	NAR				x			
Trifolium pratense	Red Clover	SNA	GNR	NAR	x	x	x	x		x	
Trillium grandiflorum	White Trillium	S5	N5	NAR					x		
Tussilago farfara	Colt's Foot	SNA	NNA	NAR	x	x		x			
Ulmus americana	American Elm	S5	N5	NAR	x	x		x			
Verbascum thapsus	Common Mullein	SNA	GNR	NAR				x			
Vicia cracca	Tufted Vetch	SNA	GNR	NAR				x			
Vitis riparia	Riverbank Grape	S5	G5	NAR	x	x					

APPENDIX D

Dawn Breeding Bird Data

Dawn Breeding Bird Data

			Point Count Stations A,B					Conservation Rank		
Family	**Scientific Name**	**English Common Name**	**1**	**2**	**3**	**Incidental**	**Breeding Evidence**	**Global G-rank**	**Provincial S-rank**	**Provincial Endangered Species Act**
Bombycillidae	*Bombycilla cedrorum*	Cedar Waxwing			H/FO[A,B]	X	Possible	G5	S5B	NAR
Cardinalidae	*Passerina cyanea*	Indigo Bunting			S[A]	X	Possible	G5	S4B	NAR
Cardinalidae	*Cardinalis cardinalis*	Northern Cardinal	S[B]				Possible	G5	S5	NAR
Columbidae	*Zenaida macroura*	Mourning Dove		H[B]			Possible	G5	S5	NAR
Corvidae	*Corvus brachyrhynchos*	American Crow	H/P[A]	S[A]	H[B]		Probable	G5	S5B	NAR
Corvidae	*Cyanocitta cristata*	Blue Jay			H[B]		Possible	G5	S5B	NAR
Fringillidae	*Spinus tristis*	American Goldfinch	T		H[A]	X	Probable	G5	S5B	NAR
Hirundinidae	*Tachycineta bicolor*	Tree Swallow			H/FO[B]		Possible	G5	S4B	NAR
Hirundinidae	*Stelgidopteryx serripennis*	Northern Rough-winged Swallow			H/FO[B]		Possible	G5	S4B	NAR
Icteridae	*Icterus galbula*	Baltimore Oriole	S[B]				Possible	G5	S4B	NAR
Icteridae	*Molothrus ater*	Brown-headed Cowbird	H[A]				Possible	G5	S5	NAR
Laridae	*Fratercula arctica*	Ring-billed Gull	FO[A]		X/FO[B]		Possible	G5	S5B,S4N	NAR
Mimidae	*Toxostoma rufum*	Brown Thrasher			S[A]		Possible	G5	S4B	NAR
Mimidae	*Dumetella carolinensis*	Gray Catbird				X	Observed	G5	S4	NAR
Paridae	*Poecile atricapillus*	Black-capped Chickadee	H[A]				Possible	G5	S5	NAR
Parulidae	*Oporornis philadelphia*	Mourning Warbler	S[A]				Possible	G5	S4B	NAR
Parulidae	*Seiurus aurocapilla*	Ovenbird	S[B]	S[B]			Possible	G5	S4B	NAR
Parulidae	*Dendroica pensylvanica*	Chestnut-sided Warbler			T		Probable	G5	S5B	NAR
Parulidae	*Geothlypis trichas*	Common Yellowthroat		T			Probable	G5	S5B	NAR
Parulidae	*Mniotilta varia*	Black-and-white Warbler	S[A]				Possible	G5	S5B	NAR
Parulidae	*Setophaga ruticilla*	American Redstart	T	T	S[A]	X	Probable	G5	S5B	NAR
Parulidae	*Dendroica petechia*	Yellow Warbler	S[A]	S[A]		X	Possible	G5	S5B	NAR
Parulidae	*Vermivora chrysoptera*	Golden-winged Warbler		S[A]			Possible	G4	S4B	SC
Passerellidae	*Melospiza melodia*	Song Sparrow	T	T	T	X	Probable	G5	S5B	NAR
Phasianidae	*Bonasa umbellus*	Ruffed Grouse	A[A]				Probable	G4	S4B	NAR
Picidae	*Picoides pubescens*	Downy Woodpecker				X	Observed	G5	S5	NAR
Scolopacidae	*Scolopax minor*	American Woodcock				X	Observed	G5	S4B	NAR
Troglodytidae	*Troglodytes aedon*	House Wren	T	S[A]	T	X	Probable	G5	S5B	NAR
Turdidae	*Turdus migratorius*	American Robin	S[B]			X	Possible	G5	S5B	NAR
Tyrannidae	*Contopus virens*	Eastern Wood-pewee	T			X	Probable	G5	S4B	SC
Tyrannidae	*Myiarchus crinitus*	Great Crested Flycatcher	H[A]				Possible	G5	S4B	NAR
Vireonidae	*Vireo olivaceus*	Red-eyed Vireo	T	T	T		Probable	G5	S5B	NAR

Surveys Conditions:

[A]June 4, 2024; Start Time 0622hr/ End Time 0705hr; Temperature 17°C; Wind B0; Cloud Cover 80%; Precipitation Nil; Observer: S. Brady

[B]June 25, 2024; Start Time 0747hr/End Time 0834hr; Temperature 17°C; Wind B0; Cloud Cover 100%; Precipitation Nil; Observer: K. Tuininga

OBBA Breeding Evidence Codes:

H - Species observed in its breeding season in suitable nesting habitat
S - Singing male Present, or breeding calls heard, in suitable nesting habitat in nesting season.
N - Nest Building or excavation of nest hole
P - Pair observed in suitable nesting habitat in nesting season
FO - Fly over
T - Presumed territory based on the presence of an adult bird (usually singing, but not necessarily so), in the same suitable nesting habitat patch on at least two visits, one week or more apart, during the species' breeding season
A - Agitated behaviour or anxiety calls of an adult

Conservation Rank

S-rank: S1 - Extremely Rare, S2 - Very Rare, S3 - Rare to Uncommon, S4 - Common, S5 - Very Common
G-Rank: G1 - Critically Imperiled, G2 - Imperiled, G3 - Vulnerable, G4 - Apparently Secure, G5 - Secure
Endangered Species Act Species at Risk in Ontario List: EXP (Extirpated), END (Endangered), THR (Threatened), SC (Special Concern), NAR (Not At Risk)

APPENDIX E

Bat Acoustic Data Summary Table

31/05/2024 - 10/06/2024

S4U22033
Sunset Time: 20:59
Sunrise Time: 5:36

SPECIES	20:30-21:00	21:00-21:30	21:30-22:00	22:00-22:30	22:30-23:00	23:00-23:30	23:30-00:00	00:00-00:30	00:30-1:00	1:00-1:30	1:30-2:00	2:00-2:30	2:30-3:00	3:00-3:30	3:30-4:00	4:00-4:30	4:30-5:00	5:00-5:30	5:30-6:00	TOTAL
MYLU	0	0	1	1	1	2	1	3	2	1	1	1	3	3	1	1	0	0	0	22
MYSE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MYOTIS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PESU	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EPFULANO	0	1	113	53	14	10	9	1	4	10	3	4	3	5	3	4	67	14	0	318
EPFU	0	96	362	96	23	20	11	6	5	14	5	4	12	1	1	6	116	79	0	857
LANO	0	0	22	19	1	6	2	2	3	4	7	3	6	6	2	1	23	3	0	110
LACI	0	0	34	25	12	10	5	2	2	5	3	2	1	3	0	3	3	4	0	114
LABO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LowF	0	12	30	18	3	3	6	0	3	1	1	2	2	2	1	1	27	11	0	123
HighF	0	0	1	1	1	2	1	1	6	1	2	2	3	2	2	0	0	0	0	25
TOTAL	0	109	563	213	55	53	35	15	25	36	22	18	30	22	10	16	236	111	0	1569

TOTAL SAR 22
TOTAL SAR (incl. HIGHF) 47

S4U22035
Sunset Time: 20:59
Sunrise Time: 5:36

SPECIES	20:30-21:00	21:00-21:30	21:30-22:00	22:00-22:30	22:30-23:00	23:00-23:30	23:30-00:00	00:00-00:30	00:30-1:00	1:00-1:30	1:30-2:00	2:00-2:30	2:30-3:00	3:00-3:30	3:30-4:00	4:00-4:30	4:30-5:00	5:00-5:30	5:30-6:00	TOTAL
MYLU	0	0	0	0	1	0	1	1	1	0	0	0	0	0	0	0	0	0	0	4
MYSE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MYOTIS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PESU	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
EPFULANO	0	3	7	3	2	2	2	2	3	0	0	0	1	0	11	2	2	3	0	43
EPFU	0	0	1	4	3	3	0	0	0	1	0	0	0	1	2	2	0	0	0	17
LANO	0	1	1	2	0	0	0	3	2	0	0	1	2	1	1	2	0	3	0	19
LACI	0	0	3	11	3	2	2	0	2	1	1	0	1	1	0	0	0	0	0	27
LABO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LowF	0	0	12	19	4	9	3	8	4	9	1	3	2	6	6	5	0	4	0	95
HighF	0	0	0	0	1	0	1	0	1	0	0	1	1	0	0	0	0	0	0	5
TOTAL	0	4	24	39	14	16	9	15	13	11	2	5	7	9	20	11	2	10	0	211

TOTAL SAR 5
TOTAL SAR (incl. HIGHF) 10

S4U22041
Sunset Time: 20:59
Sunrise Time: 5:36

SPECIES	20:30-21:00	21:00-21:30	21:30-22:00	22:00-22:30	22:30-23:00	23:00-23:30	23:30-00:00	00:00-00:30	00:30-1:00	1:00-1:30	1:30-2:00	2:00-2:30	2:30-3:00	3:00-3:30	3:30-4:00	4:00-4:30	4:30-5:00	5:00-5:30	5:30-6:00	TOTAL
MYLU	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	2
MYSE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MYOTIS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PESU	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EPFULANO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EPFUS	0	0	1	4	0	0	0	1	0	1	0	0	0	0	1	0	0	0	0	8
LANO	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	2
LACI	0	0	0	3	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5
LABO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LowF	0	2	8	7	6	13	3	10	3	3	2	4	3	3	2	2	0	0	0	71
HighF	0	0	0	0	0	0	0	1	1	0	0	0	1	0	0	0	0	0	0	3
TOTAL	0	3	10	14	8	14	3	12	4	4	2	4	5	3	3	2	0	0	0	91

TOTAL SAR 2
TOTAL SAR (incl. HIGHF) 5

S4U22043
Sunset Time: 20:59
Sunrise Time: 5:36

SPECIES	20:30-21:00	21:00-21:30	21:30-22:00	22:00-22:30	22:30-23:00	23:00-23:30	23:30-00:00	00:00-00:30	00:30-1:00	1:00-1:30	1:30-2:00	2:00-2:30	2:30-3:00	3:00-3:30	3:30-4:00	4:00-4:30	4:30-5:00	5:00-5:30	5:30-6:00	TOTAL
MYLU	0	0	0	0	0	2	1	2	1	2	3	1	3	0	0	2	0	0	0	17
MYSE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MYOTIS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PESU	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EPFULANO	0	1	6	3	5	0	0	1	1	2	0	1	5	3	2	0	0	0	0	30
EPFU	0	3	17	5	5	3	3	5	0	3	2	2	1	3	2	1	1	0	0	56
LANO	0	1	3	1	2	1	2	2	0	0	3	4	2	2	2	2	0	0	0	27
LACI	0	0	6	10	3	2	2	1	0	1	2	0	0	0	1	0	0	0	0	28
LABO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LowF	0	1	5	11	5	5	3	6	3	5	2	1	0	1	8	1	0	1	0	58
HighF	0	0	1	1	1	1	0	1	1	2	0	1	1	2	1	0	0	0	0	13
TOTAL	0	6	38	31	21	14	11	18	6	15	12	10	12	11	16	6	1	1	0	229

TOTAL SAR 17
TOTAL SAR (incl. HIGHF) 30

Species ID

MYLU	Myotis lucifugus
MYSE	Myotis septentrionalis
PESU	Perimyotis subflavus
EPFU	Eptesicus fuscus
LANO	Lasionycteris noctivagans
LACI	Lasiurus cinereus
LABO	Lasiurus borealis
MYLE	Myotis leibii

Groupings

MYOTIS	Myotis sp.
EPFULANO	Eptesicus fuscus/Lasionycteris noctivagans
LowF	Low Frequency Bat (<35kHz Fmin)
HighF	High Frequency Bat (>35kHz Fmin)

Minimum Frequency Range of Species

MYLU	40 - 45kHz
MYSE	40 - 45kHz
PESU	35 - 40kHz
EPFU	25 - 30kHz
LANO	25 - 30kHz
LACI	<25kHz
LABO	30 - 35kHz
MYLE	40 - 45kHz

APPENDIX F

SWH Assessment Table

Significant Wildlife Habitat Criteria Schedules for Ecoregion 6E

Seasonal Concentrations of Areas of Animals

Wildlife Habitat	Wildlife Species	Candidate SWH		Confirmed SWH	Assessment
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	
Waterfowl Stopover and Staging Areas (Terrestrial) **Rationale:** 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. Information Sources • 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 • Sites documented through waterfowl planning processes • 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" • Any mixed species aggregations of 100 or more individuals required. • The flooded field ecosite habitat plus a 100-300m radius area, dependant on local site conditions and adjacent land use is the significant wildlife habitat. • Annual use of habitat is documented from information sources or field studies (annual use can be based on studies or determined by past surveys with species numbers and dates). • Significant Wildlife Habitat Mitigation Support Tool Index #7 provides development effects and mitigation measures.	Habitat in Study Area does not contain appropriate ELC ecosites. There is no suitable habitat for waterfowl stopover and staging (Terrestrial). Therefore, no candidate habitat for this SWH is present in the Study Area.
Waterfowl Stopover and Staging Areas (Aquatic) **Rationale:** 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 Long-tailed Duck Surf Scoter White-winged Scoter Black Scoter Ring-necked duck Common Goldeneye Bufflehead Redhead Ruddy Duck Red-breasted Merganser Brant Canvasback Ruddy Duck	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) 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 • Ducks Unlimited projects • Element occurrence specification by Nature Serve: http://www.natureserve.org • Natural Heritage Information Centre (NHIC) Waterfowl Concentration Areas	Studies carried out and verified presence of: • Aggregations of 100 or more of listed species for 7 days, results in > 700 waterfowl use days. • Areas with annual staging of ruddy ducks, canvasbacks, and redheads are SWH • The combined area of the ELC ecosites and a 100m radius area is the SWH • Wetland area and shorelines associated with sites identified within the Significant Wildlife Habitat Technical Guide Appendix K are significant wildlife habitat. • Evaluation methods to follow "Bird and Bird Habitats: Guidelines for Wind Power Projects" • Annual Use of Habitat is Documented from Information Sources or Field Studies (Annual can be based on completed studies or determined from past surveys with species numbers and dates recorded). • Significant Wildlife Habitat Mitigation Support Tool Index #7 provides development effects and mitigation measures.	Habitat in Study Area does not contain appropriate ELC ecosites. There is no suitable habitat for waterfowl stopover and staging (Aquatic). Therefore, no candidate habitat for this SWH is present in the Study Area.

Wildlife Habitat	Wildlife Species	Candidate SWH		Confirmed SWH	Assessment
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	
Shorebird Migratory Stopover Area **<u>Rationale:</u>** 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	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. <u>Information Sources</u> • 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 • Evaluation methods to follow "Bird and Bird Habitats: Guidelines for Wind Power Projects" • Significant Wildlife Habitat Mitigation Support Tool Index #8 provides development effects and mitigation measures.	Habitat in Study Area does not contain appropriate ELC ecosites. There is no suitable habitat for shorebird migratory stopover area. Therefore, no candidate habitat for this SWH is present in the Study Area.
Raptor Wintering Area **<u>Rationale:</u>** 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	<u>Hawks/Owls:</u> 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. <u>Bald Eagle:</u> Forest community Series: FOD, FOM, FOC, SWD, SWM or SWC on shoreline areas adjacent to large rivers or adjacent to lakes with open water (hunting area).	• The habitat provides a combination of fields and woodlands that provide roosting, foraging and resting habitats for wintering raptors. • Raptor wintering sites (hawk/owl) need to be > 20 ha with a combination of forest and upland. • Least disturbed sites, idle/fallow or lightly grazed field/meadow (>15ha) with adjacent woodlands • 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 Naturalist Clubs • Natural Heritage Information Center (NHIC) Raptor Winter Concentration Area • Data from Bird Studies Canada • Results of Christmas Bird Counts Reports and other information available from Conservation Authorities.	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 of the listed hawk/owl species. • To be significant a site must be used regularly (3 in 5 years) for a minimum of 20 days by the above number of birds. • 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" • Significant Wildlife Habitat Mitigation Support Tool Index #10 and #11 provides development effects and mitigation measures.	The Study Area contains woodlands. Adjacent open uplands are however frequently disturbed in nature (*i.e.,* active agriculture, gravel pit) and are not suitable to provide this function. Therefore, suitable Raptor (hawk/owl) wintering habitat is not present in the Study Area.
Bat Hibernacula **<u>Rationale;</u>** Bat hibernacula are rare habitats in all 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 Center (NHIC) Bat Hibernaculum Ministry of Northern • Development and Mines for location of mine shafts. • Clubs that explore caves (e.g. Sierra Club)	• All sites with confirmed hibernating bats are SWH. • The habitat area includes a 200m radius around the entrance of the hibernaculum, for most development types and 1000m for wind farms • 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 Power Projects. • Significant Wildlife Habitat Mitigation Support Tool Index #1 provides development effects and mitigation measures.	No caves, mine shafts, underground foundations or karst were identified in the Study Area. Therefore, candidate bat hibernacula SWH is not present in the Study Area.

Wildlife Habitat	Wildlife Species	Candidate SWH		Confirmed SWH	Assessment
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	
			• University Biology Departments with bat experts.		
Bat Maternity Colonies **<u>Rationale:</u>** Known locations of forested bat maternity colonies are 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 (buildings are not considered to be SWH). • Maternity roosts are not found in caves and mines in Ontario. • Maternity colonies located in Mature deciduous or mixed forest stands with >10/ha large diameter (>25cm dbh) wildlife trees • Female Bats prefer wildlife tree (snags) in early stages of decay, class 1-3. • 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 <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". • Significant Wildlife Habitat Mitigation Support Tool Index #12 provides development effects and mitigation measures.	**Vegetation communities present within the Study Area are characterized as young and regenerating communities.** **Notwithstanding, mature trees have been noted to be present in low density which may provide limited roosting function to the listed bat species.** **Further consideration is provided in EIS report.**
Turtle Wintering Areas **<u>Rationale:</u>** 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 with current can also be used as over-wintering habitat.	• For most turtles, wintering areas are in the same general area as their core habitat. Water must be deep enough not to freeze and have soft mud substrates. • Over-wintering sites are permanent water bodies, large wetlands, and bogs or fens with adequate Dissolved Oxygen • Man-made ponds such as sewage lagoons or storm water ponds should not be considered SWH. <u>Information Sources</u> • 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 • Field Naturalist clubs • Natural Heritage Information Center (NHIC)	• 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 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) • Congregation of turtles is more common where wintering areas are limited and therefore significant • Significant Wildlife Habitat Mitigation Support Tool Index #28 provides development effects and mitigation measures for turtle wintering habitat.	Habitat in Study Area does not contain appropriate ELC ecosites. There is no suitable habitat for turtle wintering areas. No wetlands are mapped within the Study Area. Therefore, no candidate habitat for this SWH is present in the Study Area.
Reptile Hibernaculum **<u>Rationale</u>;** Generally sites are the only known sites in the area. Sites with the highest number of individuals are most significant.	**<u>Snakes:</u>** Eastern Gartersnake Northern Watersnake Northern Red-bellied Snake Northern Brownsnake Smooth Green Snake Northern Ring-necked Snake Milksnake **<u>Special Concern:</u>** Eastern Ribbonsnake **<u>Lizard:</u>**	For all snakes, habitat may be found in any ecosite other than very wet ones. Talus, Rock Barren, Crevice, Cave, and Alvar sites may be directly related to these habitats. Observations or congregations of snakes on sunny warm days in the spring or fall is a good indicator.	• For snakes, hibernation takes place in sites located below frost lines in burrows, rock crevices and other natural or naturalized locations. The existence of features that go below frost line; such as rock piles or slopes, old stone fences, and abandoned crumbling foundations assist in identifying candidate SWH. • Areas of broken and fissured rock are particularly valuable since they provide access to subterranean sites below the frost line • Wetlands can also be important over-wintering habitat in conifer or shrub swamps and swales, poor fens, or depressions in bedrock terrain with sparse trees or shrubs with sphagnum moss or sedge hummock ground cover. • Five-lined skink prefer mixed forests with rock outcrop openings providing cover rock overlaying granite bedrock with fissures .	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) • <u>Note:</u> If there are Special Concern Species present, then site is SWH • <u>Note:</u> Sites for hibernation possess specific habitat parameters (e.g. temperature, humidity, etc.) and	**Features associated with this function appear to be common in the general landscape as reptile hibernaculum habitat may be found in almost any ecosite.** **Further consideration is provided in the EIS report.**

Wildlife Habitat	Wildlife Species	Candidate SWH		Confirmed SWH	Assessment
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	
	Special Concern (Southern Shield population): Five-lined Skink	For Five-lined Skink, ELC Community Series of FOD and FOM and Ecosites: FOC1 FOC3	Information Sources • 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 available from Conservation Authorities. • Field Naturalists clubs • University herpetologists • Natural Heritage Information Center (NHIC) • OMNRF ecologist or biologist may be aware of locations of wintering skinks	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 is located plus a 30 m radius area is the SWH • Significant Wildlife Habitat Mitigation Support Tool Index #13 provides development effects and mitigation measures for snake hibernacula. • Presence of any active hibernaculum for skink is significant. • Significant Wildlife Habitat Mitigation Support Tool Index #37 provides development effects and mitigation measures for five-lined skink wintering habitat.	
Colonially -Nesting Bird Breeding Habitat (Bank and Cliff) **Rationale:** 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. Information Sources • Reports and other information available from Conservation Authorities. • Ontario Breeding Bird Atlas • Bird Studies Canada; *NatureCounts* http://www.birdscanada.org/birdmon/ • Field Naturalist Clubs.	Studies confirming: • Presence of 1 or more nesting sites with 8 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 • 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” • Significant Wildlife Habitat Mitigation Support Tool Index #4 provides development effects and mitigation measures	No eroding banks, sandy hills, borrow pits, sand piles, bridge abutments, silos or barns are present in the Study Area for colonially-nesting bird breeding habitat (bank and cliff). The adjacent gravel pit does not qualify as SWH. Therefore, no suitable habitat for Colonially-nesting bird breeding habitat (Bank/Cliff) is present in the Study Area.
Colonially -Nesting Bird Breeding Habitat (Tree/Shrubs) **Rationale:** Large colonies are important to local bird population, typically sites are only known colony in area and are used annually.	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 15 m from ground, near the top of the tree. Information Sources • Ontario Breeding Bird Atlas, colonial nest records. • Ontario Heronry Inventory 1991 available from Bird Studies Canada or NHIC (OMNRF). • Natural Heritage Information Center (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.	Studies confirming: • Presence of 5 or more active nests of Great Blue Heron or other listed species. • The habitat extends from the edge of the colony and a minimum 300m radius or extent of the Forest Ecosite containing the colony or any island <15.0ha with a colony is the SWH • 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 • Significant Wildlife Habitat Mitigation Support Tool Index #5 provides development effects and mitigation measures.	Habitat in Study Area does not contain appropriate ELC ecosites. There is no suitable habitat for colonially nesting bird breeding habitat (tree/shrubs). Therefore, no candidate habitat for this SWH is present in the Study Area.

Wildlife Habitat	Wildlife Species	Candidate SWH		Confirmed SWH	Assessment
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	
Colonially -Nesting Bird Breeding Habitat (Ground) **Rationale;** Colonies are important to local bird population, 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 low bushes in close proximity to streams and irrigation ditches within farmlands. <u>Information Sources</u> • Ontario Breeding Bird Atlas , 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. • 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 radius area of habitat, or the extent of the ELC ecosites containing the colony or any island <3.0ha with a colony is the SWH • Studies would be done during May/June when actively nesting. Evaluation methods to follow "Bird and Bird Habitats: Guidelines for Wind Power Projects" • Significant Wildlife Habitat Mitigation Support Tool Index #6 provides development effects and mitigation measures.	Habitat in Study Area does not contain appropriate ELC ecosites. There is no suitable habitat for colonially nesting bird breeding habitat (ground). Therefore, no candidate habitat for this SWH is present in the Study Area.
Migratory Butterfly Stopover Areas **Rationale:** Butterfly stopover 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 land class: <u>Field:</u> CUM CUT CUS <u>Forest:</u> FOC FOD FOM CUP Anecdotally, a candidate site 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. • The habitat is typically a combination of field and forest, and provides the butterflies with a location to rest prior to their long migration south • The habitat should not be disturbed, fields/meadows with an abundance of preferred nectar plants and woodland edge providing shelter are requirements for this habitat. • Staging areas usually provide protection from the elements and are often spits of land or areas with the shortest distance to cross the Great Lakes <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). MUD is based on the number of days a site is used by Monarchs, multiplied by the number of individuals using the site. Numbers of butterflies can range from 100-500/day, significant variation can occur between years and multiple years of sampling should occur. • 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. • Significant Wildlife Habitat Mitigation Support Tool Index #16 provides development effects and mitigation measures.	Study Area is not located within 5 km of Lake Ontario and thus this habitat function is not applicable.
Landbird Migratory Stopover Areas **Rationale:** Sites with a high diversity of species as well as high numbers are most significant.	All migratory songbirds.: Canadian Wildlife Service Ontario website. All migrant raptor species: Ontario Ministry of Natural Resources: Fish and Wildlife Conservation Act, 1997. Schedule 7: Specially Protected Birds (Raptors)	All Ecosites associated with these ELC Community Series; FOC FOM FOD SWC SWM SWD	Woodlots need to be >10 ha in size and within 5 km of Lake Ontario. • If multiple woodlands are located along the shoreline those Woodlands <2km from Lake Ontario are more significant • Sites have a variety of habitats; forest, grassland and wetland complexes. • The largest sites are more significant • Woodlots and forest fragments are important habitats to migrating birds, these features located along the shore and located within 5km of Lake Ontario are Candidate SWH . <u>Information Sources</u> • Bird Studies Canada • Ontario Nature • Local birders and naturalist club	Studies confirm: • Use of the habitat by >200 birds/day and with >35 spp with at least 10 bird spp. recorded on at least 5 different survey dates. This abundance and diversity of migrant bird species is considered above average and significant. • Studies should be completed during spring (Apr./May) and fall (Aug/Oct) migration using standardized assessment techniques. Evaluation methods to follow "Bird and Bird Habitats: Guidelines for Wind Power Projects" • Significant Wildlife Habitat Mitigation Support Tool Index #9 provides development effects	Study Area is not located within 5 km of Lake Ontario and thus this habitat function is not applicable.

Wildlife Habitat	Wildlife Species	Candidate SWH		Confirmed SWH	Assessment
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	
			• Ontario Important Bird Areas (IBA) Program		
Deer Yarding Areas **<u>Rationale:</u>** Winter habitat for deer is considered to be the main limiting 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 20 cm, most of the deer will have moved here. If the snow is light and fluffy, deer may continue to use this area until 30 cm snow depth. In mild winters, deer may remain in the Stratum II area the entire winter. • The Core of a deer yard (Stratum I) is located within 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%. • OMNRF determines deer yards following methods outlined in "Selected Wildlife and Habitat Features: Inventory Manual" • Woodlots with high densities of deer due to artificial feeding are not significant.	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. • 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. • 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 within this Schedule. • Significant Wildlife Habitat Mitigation Support Tool Index #2 provides development effects and mitigation measures.	No deer wintering SWH is mapped by MNRF (LIO) in the Study Area.
Deer Winter Congregation Areas **<u>Rationale:</u>** 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.	White-tailed Deer	All Forested Ecosites with these ELC Community Series; FOC FOM FOD SWC SWM SWD Conifer plantations much smaller than 50 ha may also be used.	• 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 Ecoregion 6E are not constrained by snow depth, however deer will annually congregate in large numbers in suitable woodlands. • If deer are constrained by snow depth refer to the Deer Yarding Area habitat. • Large woodlots > 100ha and up to 1500 ha are known to be used annually by densities of deer that range from 0.1-1.5 deer/ha . • Woodlots with high densities of deer due to artificial feeding are not significant. <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 • 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 MNRF • Studies should be completed during winter (Jan/Feb) when >20cm of snow is on the ground using aerial survey techniques, ground or road surveys. or a pellet count deer density survey. • 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 below. • Significant Wildlife Habitat Mitigation Support Tool Index #2 provides development effects and mitigation measures.	No deer wintering SWH is mapped by MNRF (LIO) in the Study Area.

Rare Vegetation Communities

Rare Vegetation Community	Candidate SWH			Confirmed SWH	Assessment
	ELC Ecosite Code	Habitat Description	Detailed Information and Sources	Defining Criteria	
Cliffs and Talus Slopes **Rationale:** Cliffs and Talus Slopes are extremely rare habitats in Ontario.	Any ELC Ecosite within Community Series: TAO TAS TAT CLO CLS 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 available on their website • Field Naturalist clubs • Conservation Authorities	• Confirm any ELC Vegetation Type for Cliffs or Talus Slopes • Significant Wildlife Habitat Mitigation Support Tool Index #21 provides development effects and mitigation measures.	Habitat in the Study Area does not meet key criteria to be considered significant. No cliff or talus slopes are present in the area.
Sand Barren **Rationale;** 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. 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%.	A sand barren area >0.5ha in size. Information Sources • OMNRF Districts. • Natural Heritage Information Center (NHIC) has location information available on their website. • Field Naturalist clubs • Conservation Authorities	• Confirm any ELC Vegetation Type for Sand Barrens • Site must not be dominated by exotic or introduced species (<50% vegetative cover are exotic sp.) • Significant Wildlife Habitat Mitigation Support Tool Index #20 provides development effects and mitigation measures.	Habitat in the Study Area does not meet key criteria to be considered significant. No sand barren sites are present in the area.
Alvar **Rationale;** Alvars are extremely rare habitats in Ecosregion 6E. Most alvars in Ontario are in Ecoregions 6E and 7E. Alvars in 6E are small and highly localized just north of the Palaeozoic-Precambrian contact.	ALO1 ALS1 ALT1 FOC1 FOC2 CUM2 CUS2 CUT2-1 CUW2 **Five Alvar Species:** 1) *Carex crawei* 2) *Panicum philadelphicum* 3) *Eleocharis compressa* 4) *Scutellaria parvula* 5) *Trichostema brachiatum* These indicator species are very specific to Alvars within Ecoregion 6E	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 and comprising a number of characteristic or indicator plants. Undisturbed alvars can be phyto- and zoogeographically diverse, supporting many uncommon or are relict plant and animal species. Vegetation cover varies from patchy to barren with a less than 60% tree cover	An Alvar site > 0.5 ha in size. Information Sources • Alvars of Ontario (2000), Federation of Ontario Naturalists. • Ontario Nature – Conserving Great Lakes Alvars. • Natural Heritage Information Center (NHIC) has location information available on their website • OMNRF Districts • Field Naturalist clubs. • Conservation Authorities.	• Field studies that identify four of the five Alvar Indicator Species at a Candidate Alvar site is Significant. • Site must not be dominated by exotic or introduced species (<50% vegetative cover are exotic sp.). • The alvar must be in excellent condition and fit in with surrounding landscape with few conflicting land uses • Significant Wildlife Habitat Mitigation Support Tool Index #17 provides development effects and mitigation measures.	Habitat in the Study Area does not meet key criteria to be considered significant. No alvar sites are present in the area.
Old Growth Forest **Rationale;** Due to historic logging practices, extensive	Forest Community Series: FOD FOC FOM SWD	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	Woodland areas 30 ha or greater in size or with at least 10 ha interior habitat assuming 100 m buffer at edge of forest. Information Sources • OMNRF Forest Resource Inventory mapping	Field Studies will determine: • If dominant trees species of the are >140 years old, then the area containing these trees is SWH	The Study Area woodland is characterized as young and regenerating and has been measured to be approximately 11.35 ha in size. The size and configuration do not provide for interior woodland areas.

Rare Vegetation Community	Candidate SWH			Confirmed SWH	Assessment
	ELC Ecosite Code	Habitat Description	Detailed Information and Sources	Defining Criteria	
old growth forest is rare in the Ecoregion. Interior habitat provided by old growth forests is required by many wildlife species.	SWC SWM	multi-layered canopy and an abundance of snags and downed woody debris.	• OMNRF Districts. • Field Naturalist clubs • Conservation Authorities • Sustainable Forestry Licence (SFL) companies will possibly know locations through field operations. • Municipal forestry departments	• The forested area containing the old growth characteristics will have experienced no recognizable forestry activities (cut stumps will not be present) • The area of forest ecosites combined or an eco-element within an ecosite that contains the old growth characteristics is the SWH. • Determine ELC vegetation types for the forest area containing the old growth characteristics • Significant Wildlife Habitat Mitigation Support Tool Index #23 provides development effects and mitigation measures.	The woodland habitat is not considered to be old growth forest as the dominant trees are less than 140 years old and the woodland lacks the characteristics required to be considered old growth.
Savannah **<u>Rationale:</u>** 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. <u>Information Sources</u> • Natural Heritage Information Center (NHIC) has location information available on their website • OMNRF Districts • Field Naturalist clubs. • Conservation Authorities.	Field studies confirm one or more of the Savannah indicator species listed in Appendix N should be present. Note: Savannah plant spp. list from Ecoregion 6E should be used. • Area of the ELC Ecosite is the SWH. • Site must not be dominated by exotic or introduced species (<50% vegetative cover are exotic sp.). • Significant Wildlife Habitat Mitigation Support Tool Index #18 provides development effects and mitigation measures.	Habitat in the Study Area does not meet key criteria to be considered significant. No savannah sites are present in the area.
Tallgrass Prairie **<u>Rationale:</u>** 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> • Natural Heritage Information Center (NHIC) has location information available on their website • OMNRF Districts • Field Naturalist clubs. • Conservation Authorities.	Field studies confirm one or more of the Prairie indicator species listed in Appendix N should be present. Note: Prairie plant spp. list from Ecoregion 6E should be used • Area of the ELC Ecosite is the SWH. • Site must not be dominated by exotic or introduced species (<50% vegetative cover are exotic sp.). • Significant Wildlife Habitat Mitigation Support Tool Index #19 provides development effects and mitigation measures.	Habitat in the Study Area does not meet key criteria to be considered significant. There are no tallgrass prairie sites within the area.
Other Rare Vegetation Communities **<u>Rationale:</u>** 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 Significant Wildlife Habitat Technical Guide. 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 The OMNRF/NHIC will have up to date listing for rare vegetation communities. <u>Information Sources</u> • Natural Heritage Information Center (NHIC) has location information available on their website • OMNRF Districts • Field Naturalist clubs. • Conservation Authorities.	Field studies should confirm if an ELC Vegetation Type is a rare vegetation community based on listing within Appendix M of Significant Wildlife Habitat Technical Guide. • Area of the ELC Vegetation Type polygon is the SWH. • Significant Wildlife Habitat Mitigation Support Tool Index #37 provides development effects and mitigation measures.	No rare vegetation communities were documented in the Study Area.

Specialized Habitat for Wildlife

Wildlife Habitat	Wildlife Species	Candidate SHW		Confirmed SWH	Assessment
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	
Waterfowl Nesting Area **Rationale;** 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 120 m from a wetland (> 0.5 ha) or a wetland (>0.5ha) and any small wetlands (0.5ha) within 120m or a cluster of 3 or more small (<0.5 ha) wetlands within 120 m of each individual wetland where waterfowl nesting is known to occur. • Upland areas should be at least 120 m wide so that predators such as racoons, skunks, and foxes have difficulty finding nests. • Wood Ducks and Hooded Mergansers utilize large diameter trees (>40cm dbh) in woodlands for cavity nest sites. Information Sources • 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 Conservation Authorities.	Studies confirmed: • Presence of 3 or more nesting pairs for listed species excluding Mallards, or; • Presence of 10 or more nesting pairs for listed species including Mallards. • Any active nesting site of an American Black Duck is considered significant. • Nesting studies should be completed during the spring breeding season (April - June). Evaluation methods to follow “Bird and Bird Habitats: Guidelines for Wind Power Projects” • A field study confirming waterfowl nesting habitat will determine the boundary of the waterfowl nesting habitat for the SWH, this may be greater or less than 120 m from the wetland and will provide enough habitat for waterfowl to successfully nest. • Significant Wildlife Habitat Technical Guide Index #25 provides development effects and mitigation measures.	Habitat in Study Area does not contain appropriate ELC ecosites. There is no suitable habitat for waterfowl nesting area. Therefore, no candidate habitat for this SWH is present in the Study Area.
Bald Eagle and Osprey Nesting, Foraging and Perching Habitat **Rationale;** Nest sites are fairly uncommon in Eco-region 6E and are used annually by these species. Many suitable nesting locations may be lost due to increasing shoreline development pressures and scarcity of habitat.	Osprey **Special Concern** 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). 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. • Check the Ontario Breeding Bird Atlas or Rare Breeding Birds in Ontario for species documented • Reports and other information available from Conservation Authorities. • Field Naturalists clubs	Studies confirm the use of these nests by: • One or more active Osprey or Bald Eagle nests in an area. • Some species have more than one nest in a given area and priority is given to the primary nest with alternate nests included within the area of the SWH. • For an Osprey, the active nest and a 300 m radius around the nest or the contiguous woodland stand is the SWH , maintaining undisturbed shorelines with large trees within this area is important . • For a Bald Eagle the active nest and a 400-800 m radius around the nest is the SWH. , Area of the habitat from 400-800m is dependent on-site lines from the nest to the development and inclusion of perching and foraging habitat • 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. • 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”	The property is located approximately 1.5 km from the Wye Marsh where open water conditions are present. Known Osprey nests are present within the Wye Marsh area. The property is not located directly adjacent to a riparian area. The mapped watercourse/drainage feature is not representative to key habitat. No nests were documented at the time of the site visit. Therefore, no candidate habitat for this SWH is present in the Study Area.

Wildlife Habitat	Wildlife Species	Candidate SHW		Confirmed SWH	Assessment
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	
				• Significant Wildlife Habitat Technical Guide Index #26 provides development effects and mitigation measures	
Woodland Raptor Nesting Habitat **<u>Rationale:</u>** 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. Interior habitat determined with a 200m buffer • Stick nests found in a variety of intermediate-aged to mature conifer, deciduous or mixed forests within tops or crotches of trees. Species such as Coopers hawk nest along forest edges sometimes on peninsulas or small off-shore islands. • In disturbed sites, nests may be used again, or a new nest will be in close proximity to old nest. <u>Information Sources</u> • OMNRF Districts. • Check the Ontario Breeding Bird Atlas or Rare Breeding Birds in Ontario for species documented. • Check data from Bird Studies Canada. • Reports and other information available from Conservation Authorities.	Studies confirm: • Presence of 1 or more active nests from species list is considered significant. • Red-shouldered Hawk and Northern Goshawk – A 400m radius around the nest or 28 ha area of habitat is the SWH (the 28ha habitat area would be applied where optimal habitat is irregularly shaped around the nest) • Barred Owl – A 200m radius around the nest is the SWH. • Broad-winged Hawk and Coopers Hawk– A 100m radius around the nest is the SWH. • Sharp-Shinned Hawk – A 50m radius around the nest is the SWH. • Conduct field investigations from mid-March to end of May. The use of call broadcasts can help in locating territorial (courting/nesting) raptors and facilitate the discovery of nests by narrowing down the search area. • Significant Wildlife Habitat Technical Guide Index #27 provides development effects and mitigation measures.	The Study Area woodland feature has been measured to be approximately 11.35 ha in size with no interior forest assuming a 200 m buffer at the edge of the forest. Candidate Woodland Raptor Nesting Habitat SWH is therefore not present in the Study Area.
Turtle Nesting Areas **<u>Rationale;</u>** These habitats are rare and when identified will often be the only breeding site for local populations of turtles.	Midland Painted Turtle <u>Special Concern Species</u> Northern Map Turtle Snapping Turtle	Exposed mineral soil (sand or gravel) areas adjacent (<100m) 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. <u>Information Sources</u> • 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) • Field Naturalist clubs	Studies confirm: • Presence of 5 or more nesting Midland Painted Turtles • One or more Northern Map Turtle or Snapping Turtle nesting is a SWH. • The area or collection of sites within an area of exposed mineral soils where the turtles nest, plus a radius of 30-100m around the nesting area dependant on slope, riparian vegetation and adjacent land use is the SWH. • Travel routes from wetland to nesting area are to be considered within the SWH as part of the 30-100m area of habitat. • 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. Significant Wildlife Habitat Technical Guide Index #28 provides development effects and mitigation measures for turtle nesting habitat.	Candidate ELC ecosites were not documented within the Study Area; Study Area is wooded/residential. No exposed soil areas were noted within the property. Note that nesting areas on the sides of municipal or provincial road embankments and shoulders are not SWH. Therefore, candidate Turtle Nesting Areas SWH is not present in the Study Area.

Wildlife Habitat	Wildlife Species	Candidate SHW		Confirmed SWH	Assessment
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	
Seeps and Springs **<u>Rationale;</u>** 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. • Seeps and springs are important feeding and drinking areas especially in the winter will typically support a variety of plant and animal species <u>Information Sources</u> • Topographical Map. • Thermography. • Hydrological surveys conducted by Conservation Authorities and Ministry of the Environment, Conservation and Parks. • 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 an ELC forest ecosite or an ecoelement within 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. • Significant Wildlife Habitat Technical Guide Index #30 provides development effects and mitigation measures	The small ephemeral pool was noted to contain surface water; however it is our understanding that groundwater contributions would be absent within this area. No further considerations required.
Amphibian Breeding Habitat (Woodland). **<u>Rationale:</u>** 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) >500m2 (about 25m diameter) within or adjacent (within 120m) to a woodland (no minimum size). Some small wetlands may not be mapped and may be important breeding pools for amphibians. • Woodlands with permanent ponds or those containing water in most years until mid-July are more likely to be used as breeding habitat <u>Information Sources</u> • Ontario Herpetofaunal Summary Atlas (or other similar atlases) for records • Local landowners may also 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	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) or 2 or more of the listed frog species with Call Level Codes of 3. • A combination of observational study and call count surveys 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 wetland area plus a 230m radius of woodland area. If a wetland area is adjacent to a woodland, a travel corridor connecting the wetland to the woodland is to be included in the habitat. • Significant Wildlife Habitat Technical Guide Index #14 provides development effects and mitigation measures.	Ephemeral areas were surveyed for amphibian breeding activity. No amphibian calling was recorded for those areas therefore no amphibian breeding is present within the property. No further considerations required.
Amphibian Breeding Habitat (Wetlands) **<u>Rationale;</u>** Wetlands supporting breeding for these amphibian species are extremely important and fairly rare within Central Ontario landscapes.	Eastern Newt American Toad Spotted Salamander Four-toed Salamander Blue-spotted Salamander Gray Treefrog Western Chorus Frog Northern Leopard Frog Pickerel Frog Green Frog Mink Frog Bullfrog	ELC Community Classes SW, MA, FE, BO, OA and SA. 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), 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. • 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	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 with at least 20 individuals (adults or eggs masses) 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 will be required during the spring (March-June) when amphibians are concentrated around suitable breeding habitat within or near the wetlands.	Habitat in Study Area does not contain appropriate ELC ecosites. There is no suitable habitat for amphibian breeding habitat (wetlands). Therefore, no candidate habitat for this SWH is present in the Study Area.

Wildlife Habitat	Wildlife Species	Candidate SHW		Confirmed SWH	Assessment
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	
			• Reports and other information available from Conservation Authorities.	• If a SWH is determined for Amphibian Breeding Habitat (Wetlands) then Movement Corridors are to be considered as outlined below. • Significant Wildlife Habitat Technical Guide Index #15 provides development effects and mitigation measures.	
Woodland Area-Sensitive Bird Breeding Habitat **<u>Rationale:</u>** Large, natural blocks of mature woodland habitat within the settled areas of Southern Ontario are important habitats for area sensitive interior forest song birds.	Yellow-bellied Sapsucker Red-breasted Nuthatch Veery Blue-headed Vireo Northern Parula Black-throated Green Warbler Blackburnian Warbler Black-throated Blue Warbler Ovenbird Scarlet Tanager Winter Wren **Special Concern:** Canada Warbler	All Ecosites associated with these ELC Community Series; FOC FOM FOD SWC SWM SWD	Habitats where interior forest breeding birds are breeding, typically large mature (>60 yrs old) forest stands or woodlots >30 ha, • Interior forest habitat is at least 200 m from forest edge habitat. <u>Information Sources</u> • 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 determine what forests were of greatest value to interior species • Reports and other information available from Conservation Authorities.	Studies confirm: • Presence of nesting or breeding pairs of 3 or more of the listed wildlife species. • Note: any site with breeding 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” • Significant Wildlife Habitat Technical Guide Index #34 provides development effects and mitigation measures.	The contiguous woodland has been measured to be approximately 4.10 ha in size with no interior forest assuming a 200 m buffer at the edge of the forest. One of the listed species (Ovenbird) was recorded during the dawn breeding bird surveys with possible breeding. However, due to the lack of interior habitat conditions, this function does not require further consideration. No candidate habitat for this SWH is present in the Study Area.

Habitat for Species of Conservation Concern (Not including Endangered or Threatened Species)

Wildlife Habitat	Wildlife Species	Candidate SHW		Confirmed SWH	Assessment
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	
Marsh Breeding Bird Habitat **Rationale;** Wetlands for these bird species are typically productive and fairly rare in Southern Ontario landscapes.	American Bittern Virginia Rail Sora Common Moorhen American Coot Pied-billed Grebe Marsh Wren Sedge Wren Common Loon Sandhill Crane Green Heron Trumpeter Swan **Special Concern:** 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. • 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. Information Sources • OMNRF District and wetland evaluations. • Field Naturalist clubs • Natural Heritage Information Center (NHIC) Records. • Reports and other information available from Conservation Authorities. • Ontario Breeding Bird Atlas.	Studies confirm: • Presence of 5 or more nesting pairs of Sedge Wren or Marsh Wren or 1 pair of Sandhill Cranes; **or** breeding by any combination of 5 or more of the listed species. • Note: any wetland with breeding of 1 or more Black Terns, Trumpeter Swan, Green Heron or Yellow Rail is SWH. • Area of the ELC ecosite is the SWH. • Breeding surveys should be done in May/June when these species are actively nesting in wetland habitats. • Evaluation methods to follow "Bird and Bird Habitats: Guidelines for Wind Power Projects" • Significant Wildlife Habitat Technical Guide Index #35 provides development effects and mitigation measures	Habitat in Study Area does not contain appropriate ELC ecosites. There is no suitable habitat for marsh breeding bird habitat. Therefore, no candidate habitat for this SWH is present in the Study Area.
Open Country Bird Breeding Habitat Sources Defining Criteria **Rationale;** 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 Vesper Sparrow Northern Harrier Savannah Sparrow **Special Concern** Short-eared Owl Grasshopper Sparrow	CUM1 CUM2	Large grassland areas (includes natural and cultural fields and meadows) >30 ha • 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). • 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 grassland species. Information Sources • Agricultural land classification maps, Ministry of Agriculture. • Local bird clubs. • Ontario Breeding Bird Atlas • Reports and other information available from Conservation Authorities.	Field Studies confirm: • Presence of nesting or breeding of 2 or more of the listed species. • A field with 1 or more breeding Short-eared Owls or Grasshopper Sparrow 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" • Significant Wildlife Habitat Technical Guide Index #32 provides development effects and mitigation measures	Habitat in Study Area does not contain appropriate ELC ecosites. There is no suitable habitat for open country bird breeding habitat. Therefore, no candidate habitat for this SWH is present in the Study Area.
Shrub/Early Successional Bird Breeding Habitat **Rationale;** 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.	Indicator Spp: Brown Thrasher Clay-coloured Sparrow Common Spp. Field Sparrow Black-billed Cuckoo Eastern Towhee Willow Flycatcher **Special Concern:** 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 in size. • Shrub land or early successional fields, not class 1 or 2 agricultural lands, not being actively used for farming (i.e. no row-cropping, haying or live-stock pasturing in the last 5 years). • Shrub thicket habitats (>10 ha) are most likely to support and sustain a diversity of these species. • Shrub and thicket habitat sites considered significant should have a history of longevity, either abandoned fields or pasturelands. Information Sources • Agricultural land classification maps, Ministry of Agriculture. • Local bird clubs. • Ontario Breeding Bird Atlas • Reports and other information available from Conservation Authorities.	Field Studies confirm: • Presence of nesting or breeding of 1 of the indicator species and at least 2 of the common species. • A habitat with breeding 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" • Significant Wildlife Habitat Technical Guide Index #33 provides development effects and mitigation measures.	Woodlands within the property were noted to be young and characteristic of an early successional woodland. However, habitat in Study Area does not contain appropriate ELC ecosites. Woodland communities are small (<10 ha) and therefore not suitable to support the listed species. Brown Thrasher was documented within adjacent lands during the June 4, 2024, dawn breeding bird survey (possible breeding only). Golden-winged Warbler (documented June 4, 2024) was present within adjacent lands. Consideration for this species is provided under the Special Concern and Rare Wildlife Species (see below).

Wildlife Habitat	Wildlife Species	Candidate SHW		Confirmed SWH	Assessment
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	
					Therefore, no candidate habitat for this SWH is present in the Study Area.
Terrestrial Crayfish **<u>Rationale:</u>** Terrestrial Crayfish are only found within SW Ontario in Canada and their habitats are very rare.	Chimney or Digger Crayfish; (*Fallicambarus fodiens*) Devil Crayfish or Meadow Crayfish; (*Cambarus Diogenes*)	MAM1 MAM2 MAM3 MAM4 MAM5 MAM6 MAS1 MAS2 MAS3 SWD SWT SWM CUM1 with inclusions of above meadow marsh or swamp ecosites can be used by terrestrial crayfish.	Wet meadow and edges of shallow marshes (no minimum size) 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 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. <u>Information Sources</u> • Information sources from "Conservation Status of Freshwater Crayfishes" by Dr. Premek Hamr for the WWF and CNF March 1998	Studies Confirm: • Presence of 1 or more individuals of species listed or their chimneys (burrows) in suitable meadow marsh, swamp or moist terrestrial sites • Area of ELC ecosite or an ecoelement area of meadow marsh or swamp within the larger ecosite area is the SWH. • Surveys should be done April to August in temporary or permanent water. Note the presence of burrows or chimneys are often the only indicator of presence, observance or collection of individuals is very difficult • Significant Wildlife Habitat Technical Guide Index #36 provides development effects and mitigation measures.	No Chimneys were documented within the properties.
Special Concern and Rare Wildlife Species **<u>Rationale:</u>** 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 <u>Information Sources</u> • Natural Heritage Information Centre (NHIC) will have 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 • 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 be easily mapped and cover an important life stage component for a species e.g. specific nesting habitat or foraging habitat. • Significant Wildlife Habitat Technical Guide Index #37 provides development effects and mitigation measures.	**Special Concern and Rare Wildlife Species documented within the properties.** **Further consideration provided in EIS report.**

Animal Movement Corridors

Wildlife Habitat	Wildlife Species	Candidate SHW		Confirmed SWH	Assessment
		ELC Ecosite	Habitat Criteria and Information Sources	Defining Criteria	
Amphibian Movement Corridors **Rationale;** Movement corridors for amphibians moving from their terrestrial habitat to breeding habitat can be extremely important for local populations.	Eastern Newt American Toad Spotted Salamander Four-toed Salamander Blue-spotted Salamander Gray Treefrog Western Chorus Frog Northern Leopard Frog Pickerel Frog Green Frog Mink Frog Bullfrog	Corridors may be found in all ecosites associated with water. • Corridors will be determined based on identifying the significant breeding habitat for these species	Movement corridors between breeding habitat and summer habitat. • Movement corridors must be determined when Amphibian breeding habitat is confirmed as SWH (Amphibian Breeding Habitat –Wetland) Information Sources • MNRF District Office. • Natural Heritage Information Center (NHIC). • Reports and other information available from Conservation Authorities. • 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. • Corridors unbroken by roads, waterways or bodies, and undeveloped areas are most significant • Corridors should have at least 15m of vegetation on both sides of waterway or be up to 200m wide of woodland habitat and with gaps <20mcxlix . • Shorter corridors are more significant than longer corridors, however amphibians must be able to get to and from their summer and breeding habitat. • Significant Wildlife Habitat Technical Guide Index #40 provides development effects and mitigation measures	Amphibian movement corridors are to be determined when amphibian breeding habitat is confirmed as SWH, thus the habitat is not pertinent to the proposed development.
Deer Movement Corridors **Rationale:** 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 • A deer wintering habitat identified by the OMNRF as will have corridors that the deer use during fall migration and spring dispersion. • Corridors typically follow riparian areas, woodlots, areas of physical geography (ravines, or ridges). Information Sources • MNRF District Office. • Natural Heritage Information Center (NHIC). • Reports and other information available from Conservation Authorities. • 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 habitat should be unbroken by roads and residential areas. • Corridors should be at least 200m wide with gaps <20m and if following riparian area with at least 15m of vegetation on both sides of waterway. • Shorter corridors are more significant than longer corridors. • Significant Wildlife Habitat Technical Guide Index #39 provides development effects and mitigation measures	Deer wintering SWH is not present in the Study Area therefore deer movement corridors are not expected to be present.

Exceptions for Ecoregion 6E

EcoDistrict	Wildlife Habitat and Species	Candidate			Confirmed SWH	Assessment
		Ecosites	Habitat Description	Habitat Criteria and Information	Defining Criteria	
6E-14 **Rationale:** The Bruce Peninsula has an isolated and distinct population of black bears. Maintenance of large woodland tracts with mast-producing tree species is important for bears.	**Mast Producing Areas** 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. • Forested habitats need to be large enough to provide cover and protection for black bears	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 > 30ha 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 Significant Wildlife Habitat Technical Guide Index #3 provides development effects and mitigation measures.	Not applicable, study area is not located on the Bruce Peninsula.
6E- 17 **Rationale:** Sharp-tailed grouse only occur on Manitoulin Island in Eco-region 6E, Leks are an important habitat to maintain their population	**Lek** **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 topography. • Leks are typically a grassy field/meadow >15ha with adjacent shrublands and >30ha with adjacent deciduous woodland. Conifer trees within 500m are not tolerated.	Grasslands (field/meadow) are to be >15ha when adjacent to shrubland and >30ha when adjacent to deciduous woodland. • 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 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 • Significant Wildlife Habitat Technical Guide Index #32 provides development effects and mitigation measures	Not applicable, study area is not located on Manitoulin Island.

APPENDIX G

Significant Woodland Assessment Table

BIRKS

NATURAL HERITAGE CONSULTANTS

Appendix G. Significant Woodland Assessment

CRITERIA	STANDARDS	ASSESSMENT
Woodland Size Criteria		
• Size refers to the aerial (spatial) extent of the woodland (irrespective of ownership) • Woodland areas are considered to be generally continuous even if intersected by narrow gaps 20m or less in width between crown edges. • Size value is related to the scarcity of woodland in the landscape derived on a municipal basis with consideration of the differences in woodland coverage among physical sub-units (e.g., watersheds, biophysical regions). • Size criteria should also account for differences in landscape-level physiography (e.g., moraines, clay planes) and community vegetation types.	Where woodlands cover: • Is less than about 5% of land cover, woodlands 2 ha in size or larger should be considered significant • Is about 5-15% of land cover, woodlands 4 ha in size or larger should be considered significant • Is about 15-30% of land cover, woodlands 20 ha in size or larger should be considered significant. • Is about 30-60% of land cover, woodlands 50 ha in size or larger should be considered significant • Occupies more than 60% of the land, a minimum size is not suggested, and other factors should be considered	• According to the Town of Midland Official Plan Review and Update Project Natural Heritage System Review (SSEA, 2009), there is 36.9% of forest cover within the Town of Midland which contains the study area. • Therefore, a woodland must be 50 ha in size or larger to be considered significant. • The woodland in the Study Area is part of a continuous woodland that extends beyond the property to the west and south. The total area of the woodland is approximately 4.10 ha. • Woodland feature does not meet minimum area threshold. • ***Therefore, the contiguous woodland unit would not be considered significant based on the Size criteria.***
Ecological Function Criteria		
Woodland Interior		
• Interior Habitat more than 100m from the edge (as measured from the limits of a continuous woodland as defined above) is important for some species. • For purposes of this criterion, a maintained public road would create an edge even if the opening was not wider than 20m and did not create a separate woodland.	Woodlands should be considered significant if they have: • Any interior habitat where woodlands cover less than about 15% of the land cover • 2 ha or more of interior habitat where woodlands cover about 15-30% of the land cover • 8 ha or more of interior habitat where woodlands cover about 30-60% of the land cover • 20 ha or more of interior habitat where woodlands cover about 60% of the land cover	• The woodland feature does not contain any interior habitat measured 100 m from woodland edge. • ***Therefore, the contiguous woodland unit would not be considered significant based on the Woodland Interior criteria.***

Appendix G. Significant Woodland Assessment

CRITERIA	STANDARDS	ASSESSMENT
Proximity to Other Woodlands or Other Habitats		
• Woodlands that overlap, abut or are close to other significant natural heritage features or areas could be considered more valuable or significant than those that are not. • Patches close to each other are of greater mutual benefit and value to wildlife.	Woodlands should be considered significant if: • A portion of the woodland is located within a specific distance (e.g., 30m) of a significant natural feature or fish habitat likely receiving ecological benefit from the woodland and the entire woodland meets the minimum area threshold (e.g., 0.5-20ha, depending on circumstance)	• The woodland feature does not contain any wetland and/or fish habitat that could be receiving ecological benefit from the woodland unit. • ***Therefore, the woodland unit would not be considered significant based on the Proximity to Other Woodlands or Other Habitats Criteria***
Linkages		
• Linkages are important connections providing for movement between habitats. • Woodlands that are located between other significant features or areas can be considered to perform an important linkage function as “stepping stones” for movement between habitats.	Woodlands should be considered significant if they: • Are located within a defined natural heritage system or provide a connecting link between two other significant features, each of which is within a specified distance (e.g., 120m) and meets minimum area thresholds (e.g., 1-20ha, depending on circumstance)	• The woodland feature is generally bordered by municipal roads, existing residential development, and gravel pit and does not provide a linkage between two other natural heritage features. • ***Therefore, the contiguous woodland unit would not be considered significant based on the Linkages criteria.***
Water Protection		
• Source water protection is important. • Natural hydrological processes should be maintained.	Woodlands should be considered significant if they: • Are located within a sensitive or threatened watershed or a specific distance (e.g., 50m or top of valley bank if greater) or a sensitive groundwater discharge, sensitive recharge, sensitive headwater area, watercourse or fish habitat and meet minimum area thresholds (e.g., 0.5-10ha, depending on circumstance)	• According to the Drinking Water Source Protection Interactive mapping tool: ○ a portion of the woodland feature is mapped as Significant Groundwater Recharge Area • Woodland feature does not meet minimum area threshold. • ***Therefore, the woodland unit would be considered significant based on the Water Protection criteria, however the woodland does not meet the minimum area threshold.***
Woodland Diversity		
• Certain woodland species have had major reductions in representation on the landscape and may need special consideration.	Woodlands should be considered significant if they have: • A naturally occurring composition of native forest species that have declined	• The overall forest community within the study area is not representative of a rare vegetation community or a high diversity through composition and terrain. • Woodland feature does not meet minimum area threshold.

Appendix G. Significant Woodland Assessment

CRITERIA	STANDARDS	ASSESSMENT
• More native diversity is more valuable than less diversity.	significantly south and east of the Canadian Shield and meet minimum area thresholds (e.g., 1-20 ha, depending on circumstance) • A high native diversity through a combination of composition and terrain (e.g., a woodland extending from a hilltop to a valley bottom or to opposite slopes) and meet minimum area thresholds (e.g., 2-20 ha, depending on circumstance)	• ***Therefore, the woodland unit would not be considered significant by the Woodland Diversity criteria.***
Uncommon Characteristics Criteria		
• Woodlands that are uncommon in terms of species composition, cover type, age or structure should be protected. • Older woodlands (i.e., woodlands greater than 100 years old) are particularly valuable for several reasons, including their contributions to genetic, species and ecosystem diversity.	Woodlands should be considered significant if they have: • A unique species composition or the site is represented by less than 5% overall in woodland area and meets minimum area thresholds (e.g., 0.5 ha, depending on circumstance) • A vegetation community with a provincial ranking of S1, S2 or S3 (as ranked by the NHIC and meet minimum area thresholds (*e.g.*, 0.5 ha, depending on circumstance) • Habitat (e.g., with 10 individual stems or 100m^2 of leaf coverage) of a rare, uncommon or restricted woodland plant species and meet minimum area thresholds (e.g., 0.5 ha, depending on circumstance): vascular plant species for which the NHIC's Southern Ontario Coefficient of Conservatism is 8, 9 or 10; tree species of restricted distribution such as sassafras or rock elm; species existing only in a limited number of sites within the planning area • Characteristics of older woodlands or woodlands with larger tree size structure in native species meet minimum area thresholds (e.g., 1-10 ha, depending on circumstance): older woodlands could be	• The woodlands within the Study Area did not contain a unique species composition, age, or structure. • The woodland communities on the property are not ranked S1, S2, or S3. • The woodlands in the Study Area do not contain characteristics of older woodlands. • Woodland feature does not meet minimum area threshold. • ***Therefore, the woodland unit would not be considered significant based on the Uncommon Characteristics criteria.***

Appendix G. Significant Woodland Assessment

CRITERIA	STANDARDS	ASSESSMENT
	defined as having 10 or more trees/ha greater than 100 years old; larger tree size structure could be defined as 10 or more trees/ha at least 50cm in diameter, or a basal area of 8 or more m^2/ha in trees that are at least 40cm in diameter	
Economic and Social Function Values Criteria		
• Woodlands that have high economic or social values through particular site characteristics or deliberate management should be protected.	Woodlands should be considered significant if they have: • High productivity in terms of economically viable products together with continuous native natural attributes and meet minimum area thresholds (e.g., 2-20 ha, depending on circumstance) • A high value in special services such as air-quality improvement or recreation at a sustainable level that is compatible with long-term retention and meet minimum area thresholds (e.g., 0.2-10 ha, depending on circumstance) • Important identified appreciation, education, cultural or historical value and meet minimum area thresholds (e.g., 0.2-10 ha, depending on circumstance)	• The woodland feature does not generate economically viable forest products. • No formal recreational use of the woodland. • The woodland feature is not identified as providing education, cultural or historical value. • Woodland feature does not meet minimum area threshold. • ***Therefore, the woodland unit would not be considered significant based on the Economics and Social Function Values criteria.***

1029 Brebeuf Road

Town of Midland

Candidate Significant Woodland Mapping

- Properties Limit
- Watercourse (LIO)
- Site Drainage (Jones Consulting Group)
- ELC Vegetation Community
- Candidate Significant Woodland (Birks NHC; 4.10 ha)

MAP DRAWING INFORMATION:
DATA PROVIDED BY: ESRI CANADA

MAP CREATED BY: SB
MAP CHECKED BY: MF
MAP PROJECTION: NAD 1983 UTM ZONE 17N

0 55 110 220 330 440 Meters

FILE LOCATION:

Path: C:\Users\S_Brady\BirksNHC\Birks NHC Team for all - Documents\Project Folders\04 - SBrady Projects\ArcGIS - Projects here\Projects - here\02-015-2023 Brebeuf

PROJECT: 02-015-2023 STATUS: DRAFT DATE: 07/12/2023

APPENDIX H

Species at Risk Assessment

BIRKS

NATURAL HERITAGE CONSULTANTS

Appendix H. Species at Risk Assessment (Threatened and Endangered Species protected under Section 9 and Section 10 of the ESA, 2007).

Common Name	Scientific Name	ESA Designation[1]	Habitat Requirements	Background Records	Habitat Affinities Present Within Study Area	Potential for Impacts to Species (Section 9) or Habitat (Section 10)
			Reptiles			
Blanding's Turtle	*Emydoidea blandingii*	Threatened	Shallow lakes, ponds and wetlands with mucky soft bottoms.	NHIC and ORAA Squares 17NK8752 and 17NK85 indicate a 2016 record for this species.	No suitable habitat within the Study Area. No wetlands (*i.e.,* Wye Marsh) within 1 km of the property limits. No wetland habitats of sufficient size are present within the Study Area.	No suitable habitats present within the property and Study Area. **No further consideration required.**
Eastern Hog-nosed Snake	*Heterodon platirhinos*	Threatened	Fields, forest, shrublands, beaches, old dune habitats. Open, sandy soils. Eastern shore of Georgian Bay in forest clearings and rock outcrops.	2013 records for ORAA Square ID 17NK85. No recent known records of the species in the Study Area.	Although forest habitat is present, individuals within the Eastern Georgian Bay population are more commonly associated with the presence of rock outcrops, beach or sandy dune habitats. None of which are present within the Study Area.	Species not expected to occur within the Study Area. **No further consideration required.**
Massasauga rattlesnake (Great Lakes – St. Lawrence pop.)	*Sistrurus catenatus*	Threatened	Populations in Great Lakes/St. Lawrence are concentrated in the upper Bruce Peninsula and east side of Georgian Bay. Massasaugas require semi-open habitat to provide both cover and opportunities for thermoregulation. In Georgian Bay, Massasaugas use a mosaic of bedrock barrens, conifer swamps, beaver meadows, fens, bogs, and shoreline habitats.	Historical 1967 and 1969 records for ORAA Square ID 17NK85. Species known to inhabit habitats associated with Eastern Georgian Bay shoreline however no recent mainland records.	Forested habitats within the property are not representative of key habitat for this species.	Species not expected to occur within the Study Area. **No further consideration required.**
			Birds			
Bank Swallow	*Riparia riparia*	Threatened	It nests in a wide variety of naturally and anthropogenically created vertical banks, which often erode and change over time; many nests are in active or former aggregate pits.	Ontario Breeding Bird Atlas square 17NK85 indicates confirmed breeding in the area.	The properties do not contain any suitable features to support nesting for the species. Manmade vertical banks present within the Study Area to the west of the property (*i.e.,* Team Aggregates Gravel Pit).	**Yes - Consideration for potential indirect impacts required.**
Chimney Swift	*Chaetura pelagica*	Threatened	Chimney Swift is highly specialized in its habitat requirements, requiring vertical cavities for roosting and nesting. Prior to European settlement, the species predominantly used large hollow trees for nesting and roosting. However, the species readily adapted to the creation of artificial	Ontario Breeding Bird Atlas square 17TNK85 indicates confirmed breeding in the general area.	The existing dwelling contains suitable features (*i.e.,* open chimney) that may be considered suitable nesting habitat for this species.	**No** – existing structure and chimney were reviewed for suitable conditions. No Chimney Swifts were documented throughout the 2024 field surveys.

Appendix H. Species at Risk Assessment (Threatened and Endangered Species protected under Section 9 and Section 10 of the ESA, 2007).

Common Name	Scientific Name	ESA Designation[1]	Habitat Requirements	Background Records	Habitat Affinities Present Within Study Area	Potential for Impacts to Species (Section 9) or Habitat (Section 10)
			structures, and now primarily uses chimneys for nesting and roosting.			**No further consideration required.**
Eastern Meadowlark	*Sturnella magna*	Threatened	Primarily tall native grasslands, such as pastures, savannahs and hayfields. Non-native pastures, hayfields, weedy meadows. Large tracts of open area are preferred over smaller fragments.	Ontario Breeding Bird Atlas square 17TNK85 indicates confirmed breeding in the general area.	No open habitats are present within the Study Area.	Species not documented during dawn breeding bird surveys. **No further consideration required.**
Bobolink	*Dolichonyx oryzivorus*	Threatened	Common in areas of agricultural grasslands such as hay and pasture farm fields but are also found in other open areas.	Ontario Breeding Bird Atlas square 17TNK85 indicates confirmed breeding in the general area.	Potential habitat is not present in the Study Area.	Species not documented during dawn breeding bird surveys. **No further consideration required.**
Least Bittern	*Ixobrychus exilis*	Threatened	In Ontario, the Least bittern is found in a variety of wetland habitats, but strongly prefers cattail marshes with a mix of open pools and channels.	Ontario Breeding Bird Atlas square 17TNK85 indicates confirmed breeding in the general area. NHIC Square 17NK8852 identifies the species as being present.	No suitable wetland habitats present within the Study Area.	Species not documented during dawn breeding bird surveys. **No further consideration required.**
Red-headed Woodpecker	*Melanerpes erythrocephalus*	Endangered	Considered generalist omnivores, feeding on a variety of plants, insects and even small vertebrates, and showing flexibility in habitat selection. However, they are cavity-nesters. As such, they rely on an abundance of dead older wood to excavate nests.	Ontario Breeding Bird Atlas square 17TNK85 indicates probable breeding in the general area.	Forest communities within the property are young and lack an abundance of dead 'snag' trees.	Species not documented during dawn breeding bird surveys. **No further consideration required.**
Eastern Whip-poor-will	*Antrostomus vociferus*	Threatened	The Eastern Whip-poor-will is usually found in areas with a mix of open and forested areas, such as savannahs, open woodlands or openings in more mature, deciduous, coniferous and mixed forests.	Ontario Breeding Bird Atlas square 17TNK85 indicates possible breeding in the general area.	Forest communities within the properties are open and may provide suitable conditions for the species.	Nocturnal field surveys did not document this species within the properties and Study Area. **No further consideration required.**
Mammals						
Eastern Small-footed Myotis	*Myotis leibii*	Endangered	Roosts in rock outcrops, buildings, under bridges, in caves, mines or hollow trees. Hibernates in caves and abandoned mines.	No known background sources.	No suitable habitat features present within the Study Area.	Species not expected to occur within the Study Area.

Appendix H. Species at Risk Assessment (Threatened and Endangered Species protected under Section 9 and Section 10 of the ESA, 2007).

Common Name	Scientific Name	ESA Designation[1]	Habitat Requirements	Background Records	Habitat Affinities Present Within Study Area	Potential for Impacts to Species (Section 9) or Habitat (Section 10)
						No further consideration required.
Little Brown Myotis	*Myotis lucifugus*	Endangered	Known maternity habitat for Little Brown Myotis in Ontario consists primarily of buildings (NHIC 2019, Heaven 2018) or features associated with buildings, such as artificial roosting structures. However, natural roosting sites such as rock crevices, exfoliating tree bark, and cavities and crevices in trees are also known to provide maternity habitat. (Source: Humphrey, Christy and Heather Fotherby. 2019).	According to the Recovery Strategy for the species, the property is located within the known range for this species.	**Yes** - the existing residential dwelling may provide suitable anthropogenic roosting conditions for the species. Large hedgerow trees along the existing driveway and northern property boundary may contain suitable features for roosting bats. Day roosting may be present within the forest and woodland communities.	**Yes -** *Myotis* species was recorded in the woodland communities FODM5-3 and FODM8-1. Exit surveys for the existing residential dwelling and larger hedgerow trees confirmed the species is not utilizing those structures for roosting purposes. **Consideration for potential impacts required.**
Northern Myotis	*Myotis septentrionalis*	Endangered	Data on maternity habitat used by Northern Myotis in Ontario is generally lacking. Pregnant or lactating females have been confirmed in roosts in Ontario in one building and in one tree network in the province to date. (Source: Humphrey, Christy and Heather Fotherby. 2019).	According to the Recovery Strategy for the species, the property is located within the known range for this species.	**Yes** - the existing residential dwelling may provide suitable anthropogenic roosting conditions for the species. Large hedgerow trees along the existing driveway and northern property boundary may contain suitable features for roosting bats. Day roosting may be present within the forest and woodland communities.	**Yes -** *Myotis* species was recorded in the woodland communities FODM5-3 and FODM8-1. Exit surveys for the existing residential dwelling and larger hedgerow trees confirmed the species is not utilizing those structures for roosting purposes. **Consideration for potential impacts required.**
Tri-colored Bat	*Perimyotis subflavus*	Endangered	Maternity habitat for this species elsewhere in its range is also more poorly understood than habitat for Northern Myotis and Little Brown Myotis, but has been identified in the following features: - Dead leaf clusters in the shape of an umbrella, including dead leaf clusters belonging to broken branches, those formed by natural causes, and from the clusters of dead leaves and other material used in Eastern Gray Squirrel (Sciurus carolinensis) nests;	According to the Recovery Strategy for the species, the property is not within the known range for this species.	**Yes** - the existing residential dwelling may provide suitable anthropogenic roosting conditions for the species. Large hedgerow trees along the existing driveway and northern property boundary may contain suitable features for roosting bats. Day roosting may be present within the forest and woodland communities.	**Yes -** *HIGHF* species was recorded in the woodland communities FODM5-3 and FODM8-1. Exit surveys for the existing residential dwelling and larger hedgerow trees confirmed the species is not utilizing those structures for roosting purposes. **Consideration for potential impacts required.**

Appendix H. Species at Risk Assessment (Threatened and Endangered Species protected under Section 9 and Section 10 of the ESA, 2007).

Common Name	Scientific Name	ESA Designation[1]	Habitat Requirements	Background Records	Habitat Affinities Present Within Study Area	Potential for Impacts to Species (Section 9) or Habitat (Section 10)
			- Dense clusters of live foliage; - Arboreal lichens or epiphytes; and - Buildings, including along outside walls beneath overhangs (e.g., porches, decks) and in garages, sheds and barns. (Source: Humphrey, Christy and Heather Fotherby. 2019).			
Plants						
Butternut	*Juglans cinerea*	Endangered	In Ontario, Butternut usually grows alone or in small groups in deciduous forests. It prefers moist, well-drained soil and is often found along streams. It is also found on well-drained gravel sites and rarely on dry rocky soil. This species does not do well in the shade, and often grows in sunny openings and near forest edges.	General known occurrences in Simcoe County.	Yes – open portions of the property contain suitable conditions for the species.	Species not documented within the property. **No further consideration required.**
Black Ash	*Fraxinus nigra*	Endangered	Black Ash is a facultative wetland species that occurs in moist bottomland habitats such as swamps, fens, floodplain forests and shorelines. It is most commonly found and grows best in well-aerated flooded areas. It occasionally occurs in upland habitats, but upland occurrences are typically in depressions or other moist microsites.	General known occurrences in Simcoe County.	Yes – properties contain ephemeral wetland features that would support the species.	Species not documented within the property. **No further consideration required.**

[1]Designation Status
Provincial Status – Species at Risk in Ontario list maintained by the Ministry of the Environment, Conservation, and Parks, Ontario Regulation 230/08. *Endangered Species Act,* 2007