Prepared By:

ENVIRONMENTAL IMPACT STUDY

Part of Lot 25 Concession 4, Town of the Blue Mountains

Project No. 04-044-2021

October 2023

23 HERRELL AVENUE, BARRIE ON L4N 6T5

WWW.BIRKSNHC.CA

23 Herrell Ave
Barrie, Ontario
L4N 6T5

October 19, 2023

Insoho Developments Inc.
35 Alvin Avenue
Toronto, ON
M4T 2A7

Attention: Ron Herczeg President of Insoho Developments

RE: BIRKS NHC 04-044-2021
Part of Lot 25 Concession 4, Town of the Blue Mountains
Environmental Impact Study

Dear Mr. Herczeg:

Thank you for retaining Birks Natural Heritage Consultants, Inc. (Birks NHC) to prepare an Environmental Impact Study (EIS) for the property described above. It is our understanding that you are proposing to rezone areas of the property and develop a single residential dwelling in one of the rezoned areas. Due to the presence of several natural heritage features on the property, an EIS is required to demonstrate that the proposed rezoning and eventual site alteration will not impair the function of the identified features or their respective setbacks.

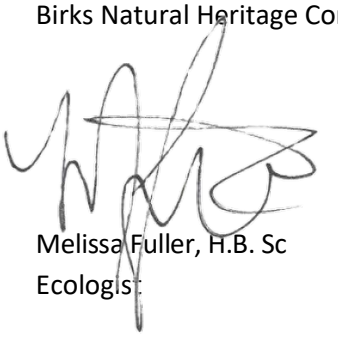
This report outlines the process by which natural heritage features are evaluated for presence and function and provides a detailed assessment of the negative impacts that may occur as a result of the proposed development. Where potential impacts are identified, mitigation measures are proposed to reduce the potential negative effects. Assuming the mitigation measures recommended in this report are implemented and that the Ministry of the Environment, Conservation and Parks agrees with our assessment, as it relates to impact to SAR,

there is no expectation that natural heritage features or their functions within the Study Area will be negatively impacted by the proposed development.

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

Yours truly,

Birks Natural Heritage Consultants Inc.



Melissa Fuller, H.B. Sc
Ecologist

Stephanie Brady, HBES
Ecologist

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1 INTRODUCTION

Birks Natural Heritage Consultants, Inc. (Birks NHC) was retained by Mr. Ron Herczeg to undertake the preparation of an Environmental Impact Study (EIS) for the property identified as part of Lot 25 Concession 4, Town of the Blue Mountains (the Town). It is our understanding that Mr. Herczeg is applying for a zoning by-law amendment in order to designate portions of the property as 'Residential' (R1-1 or R1-2) with the intent to build one single-detached home in one of the rezoned locations. The portions to be rezoned 'Residential' are in the northwest corner and southeast corner of the property. No development and/or permanent alteration is proposed within the remainder of the property which is to be zoned as 'Wetland' (WL) and 'Hazard/Hazard Exception' (H-E).

Provincial and municipal mapping identify two natural heritage features as present on or within 120 meters of the property: (1)Significant Woodlands and (2) Other Wetlands (Figure 1). These features, along with background data obtained by various sources (*i.e.,* NHIC), indicate potential for the presence of Significant Wildlife Habitat (SWH) and Species at Risk (SAR) habitat, including the habitat of Endangered and/or Threatened species. The *Endangered Species Act,* 2007 (ESA) provides protection to individuals listed as Endangered and Threatened, as well as to their respective habitats. Additional habitat protection is afforded for these habitats, as well as for SWH, via the policies set forth by the Provincial Policy Statement (2020) under the *Planning Act,* 1990. As such, this EIS includes an assessment for SWH and for species of conservation concern to determine presence of these habitat features on the property.

The property is within the Lake Simcoe-Rideau Ecoregion (6E) of Ontario. It contains land that is regulated by the Grey Sauble Conservation Authority (GSCA) due to the presence of intermittent drainage features and wetlands that eventually drain into Georgian Bay. As such, this report will consider the regulations associated with developments that are proposed in areas regulated by Ontario Regulation (O. Reg.) 151/06 and the *Conservation Authorities Act,* 1990.

1.1 PURPOSE

The purpose of this EIS is to characterize the natural heritage features associated with the property, determine their function within the greater natural landscape, and evaluate the potential for impacts associated with the proposed development plan. Where appropriate, recommendations have been made to mitigate the risk of negative impacts to the identified features and their functions, and to ensure that the proposed development complies with the municipal and provincial policies and regulations.

1.2 Site Description

The property is located approximately 10.5 kilometers (km) northwest of the center of Collingwood, Ontario, in a recreational residential area between the Niagara Escarpment and the shoreline of Georgian Bay (Figure 1). The property is non-uniform in shape and is partially bordered by rural roads and residences. Generally, it is bound by Barclay Boulevard to the west, James Street and Hidden Lake Road to the south and a private condo residence, Hidden Lake, to the east. A segment of the Georgian Trail, a gravel pedestrian pathway, extends along the northern limit of the property.

The area of the property is approximately 10.51 hectares (ha). It is almost entirely wooded with upland forest vegetation towards the southern limit and lowland forested swamp and meadow marsh vegetation communities present towards the central and northern portions. The southern limit contains a significant slope which grades downwards towards the proposed residential parcel in the southern portion of the property.

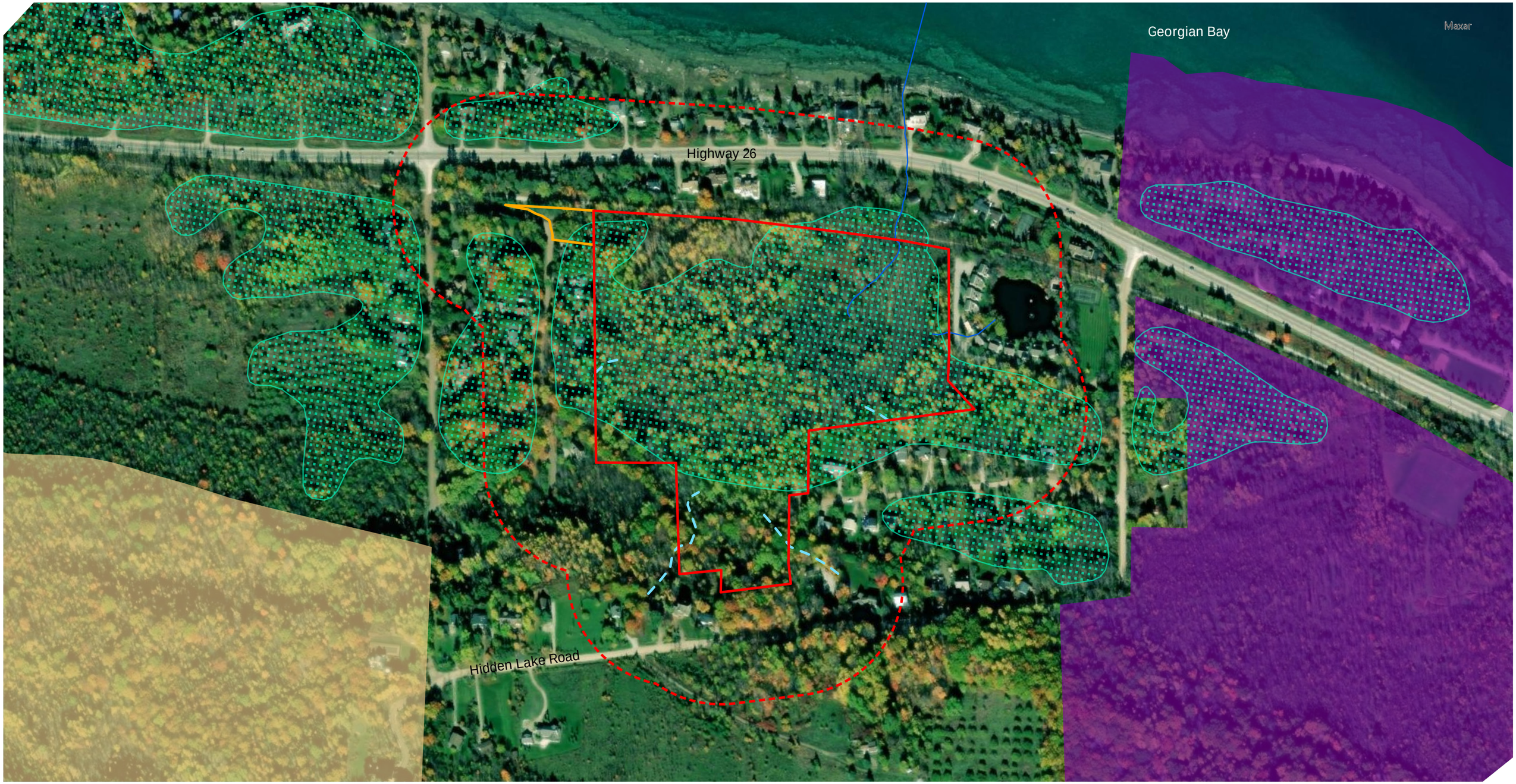
1.3 Adjacent Land Use

Adjacent land use is predominantly residential. Much of the eastern, western, and southern limits, are bound by low density residential lots. A single row of residential properties can be found between the gravel pedestrian pathway and Highway (Hwy) 26. A stormwater management pond services the local residential properties to the east of the property and the shoreline of Georgian Bay is approximately 130 m north of the northern property limit.

Much of the surrounding land toward the south and southeast, beyond the residential lots, is naturalized with forests and open fields. Craigleith Provincial Park is approximately 250 m east of the property, on the north and south side of Hwy 26 (Figure 1). The eastern limit of the Blue Mountain Slopes Area of Natural or Scientific Interest (ANSI) can be found approximately 200 m southwest of the property.

1.4 Study Area

For the purpose of this EIS, the Study Area is focused within an area approximately 120 m surrounding the property and municipal right-of-way as illustrated in Figure 1. The Ministry of Natural Resources and Forestry (MNRF) recommends a distance of 120 m for consideration of development and/or site alteration impacts to adjacent features, as outlined within the Natural Heritage Reference Manual (OMNR, 2010).



Concession 4 Part of Lot 15

Town of the Blue Mountains

Figure 1.
Study Area

- Property Limit
- 120m Study Area
- Town of The Blue Mountains Right-of-Way
- Watercourse (LIO/Birks NHC)
- Drainage Feature (Birks NHC)
- Unevaluated Wetlands
- Blue Mountain Slopes ANSI - Life Science
- Craigleith Provincial Park

BIRKS NATURAL HERITAGE CONSULTANTS

MAP DRAWING INFORMATION:
DATA PROVIDED BY: ESRI CANADA

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

N W E S

0 50 100 200 300 400 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\HiddenLake

PROJECT: 04-044-2021 STATUS: DRAFT DATE: 10/07/2023

2 ENVIRONMENTAL POLICY FRAMEWORK

The following section identifies the applicable land use planning policies associated with typical development applications in the Province of Ontario that apply to the Property and associated natural heritage features.

2.1 PROVINCIAL POLICY STATEMENT (2020)

Ontario's *Planning Act*, 1990 requires that planning decisions be consistent with the *Provincial Policy Statement*, 2020 (PPS). Section 2.1 of the PPS specifies policy related to protection of natural heritage features and functions.

According to Section 2.1.4 of the PPS, development and site alteration shall not be permitted in:

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

Section 2.1.5 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 woodlands in Ecoregions 6E; and 7E;
b) Significant valleylands in Ecoregions 6E; and 7E;
c) Significant wildlife habitat (SWH);
d) Significant areas of natural and scientific interest; and
e) Coastal wetlands in Ecoregions 5E, 6E; and 7E that are not subject to policy 2.1.4(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 2.1.4 and 2.1.5 of the PPS as significant. The Natural Heritage Reference Manual (MNR, 2010) and Ecoregion 6E Significant Wildlife Habitat Criterion Schedule (MNRF, 2015) were used within this report to identify candidate features and functions not currently identified by the province and/or municipality.

Sections 2.1.6 and 2.1.7 of the PPS 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 2.1.8 extends protections of the PPS 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 2.1.4, 2.1.5, and 2.1.6 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 Federal 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 the Department of 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.

2.3 Endangered Species Act (2007)

Ontario's *Endangered Species Act*, 2007 (ESA) provides regulatory protection to Extirpated, Endangered and Threatened species. This regulatory protection is extended to both individuals and to their habitat. Section 9(1)(a) of the ESA states,

> *no person shall kill, harm, harass, capture or take a living member of a species that is listed on the Species at Risk in Ontario List as an extirpated, endangered or threatened species*

Section 10(1)(a) of the ESA states,

> *no person shall damage or destroy the habitat of a species that is listed on the Species at Risk in Ontario List as an endangered or threated species.*

Ontario Regulation 230/08 of the ESA identifies Species at Risk in Ontario. These includes species listed as Extirpated, Endangered, Threatened, and Special Concern. As noted above, only species listed as Endangered and Threatened receive species and habitat protection through the ESA. Species designated as Special Concern may receive habitat protection under the SWH provisions of the PPS.

2.4 Conservation Authorities Act (1990)

Ontario's Conservation Authorities fall under the jurisdiction of the *Conservation Authorities Act*, 1990 which was reviewed and modernized in 2017 and again in 2019. The purpose of *Conservation Authorities Act* is to "provide for the organization and delivery of programs and services that further the conservation, restoration, development and management of natural resources in watersheds in Ontario".

An authority may issue a permit to a person to engage in an activity specified in the permit if, in the opinion of the authority, the activity is not likely to: a) affect the control of flooding, erosion, dynamic beaches or pollution or the conservation of land; b) the activity is not likely to create conditions or circumstances that, in the event of a natural hazard, might jeopardize the health or safety of persons or result in the damage or destruction of Property; and, (c) any other requirements that may be prescribed by the regulations are met.

A significant portion of the Property is regulated by the GSCA in accordance with O. Reg.151/06 - *Development, Interference with Wetlands and Alterations to Shorelines and Watercourses* (Appendix A). Under this regulation, the GSCA requires that approvals be obtained for any proposed development within regulated areas.

2.5 Niagara Escarpment Plan (2017)

The Niagara Escarpment Plan (NEP) seeks to protect the geologic features of the Niagara Escarpment and lands in its vicinity as one contiguous natural feature while allowing only compatible development to occur within its limit. Lands within the NEP have been assessed and classified as the following seven land use designations: Escarpment Natural Area; Escarpment Protection Area; Escarpment Rural Area; Minor Urban Centre; Urban Area; Escarpment Recreation Area, and; Mineral Resource Area.

The Property is located within an area in the NEP designated as Recreation Areas (Appendix B). Section 1.8 Escarpment Recreation Area states that this designation contains areas that are comprised of existing or potential recreational development and may include both seasonal and permanent residences. Section 1.8.3 lists the permitted uses of land within Recreation Areas, which includes single dwellings and secondary dwellings units. New lots may be created for permitted uses, subject to the Development Criteria in Part 2 of the Niagara Escarpment Commission (NEC), and provided that the requirements of applicable official plans, secondary plans and/or zoning by-laws are not in conflict with the NEP.

Part 2, Section 2.6.2 and 2.7.2 of the NEP states that development is not permitted in key hydrologic features (KHFs) or key natural heritage features (KNHFs) with the exception of the following:

- *development of a single dwelling and accessory facilities outside a wetland on an existing lot of record, provided that the disturbance is minimal and where possible temporary;*
- *forest, fisheries and wildlife management to maintain or enhance the feature;*
- *conservation and flood or erosion control projects, after all alternatives have been considered;*
- *the Bruce Trail, and other trails, boardwalks and docks on parks and open space lands that are part of the Parks and Open Space System; and*
- *infrastructure, where the project has been deemed necessary to the public interest and there is no other alternative.*

If a proposal for development within 120 m of a KHF or KNHF has the potential to result in a negative impact on the feature and/or its functions, or on the connectivity between key features, a natural heritage evaluation will be required. This EIS report is intended to fulfill this requirement.

2.6 County of Grey Official Plan (2019)

Schedule A Land Use Types, Map 2 of the County of Grey Official Plan depicts the property as Recreational Resort Settlement Area (Appendix C). As mentioned above, this land use type also applies to the Escarpment Recreation Areas of the NEP. Section 3.8 of the County of Grey Official Plan states that new development in the Recreational Resort Area land use type must serve the public interest by contributing to the provision of community recreational amenities, by facilitating municipal service infrastructure, and by accommodating existing un-serviced development areas and areas with development potential. Notwithstanding, residential uses are permitted within this designation, as the lands have been designated 'Settlement Area' by the County.

Appendix B Constraint Mapping, Map 2 of the County of Grey Official Plan further illustrates the property as containing Significant Woodlands and Other Wetlands. The County of Grey Official Plan generally encourages development be setback from wetlands, streams, and rivers by at least 30 m. In

some cases, this 30 m setback can be reduced based on site specific circumstances or through the completion of an EIS. Furthermore, Sections 7.3.2 and 7.4 of the Official Plan state that no development or site alterations are permitted within Significant Woodlands or Other Wetlands, or their adjacent lands, unless it has been demonstrated that there will be no negative impacts on these natural features or their ecological functions.

This EIS report aims to fulfill the requirements of the County of Grey Official Plan by demonstrating no negative impacts to the identified natural heritage features or their functions as a result of the proposed development plan.

2.7 Town of The Blue Mountains Official Plan (2016)

Schedule A-3 of the Town of The Blue Mountains Official Plan depicts Hazard Lands on a majority of the property, while the remaining lands are depicted as Residential Recreational. The Town of the Blue Mountains Appendix 1 - Constraint Mapping further illustrates Significant Woodlands, Other Wetlands, Stream/River, and Karst on the property (Appendix D).

No buildings or structures are permitted within Hazard Lands, except for the following:

- renovated or minor expansions to existing buildings and structures which were legally established on the date of approval of this Plan;
- non-habitable buildings connected with public parks (*i.e.,* picnic shelters);
- flood and erosion/sedimentation control structures;
- fences, and;
- recreational facilities as approved by the Niagara Escarpment Commission, on lands identified as being prominent escarpment slope (Town of The Blue Mountains, 2016, Section B5.4.2).

Section B5.4.2d states that buildings and structures are to be setback 30 m from all lakes and watercourses. Section B5.3.2 states development and site alteration shall not be permitted in Other Wetlands except where such activity is associated with the conservation of natural resources.

Development and site alteration within or adjacent to Significant Woodlands shall not be permitted unless it has been demonstrated that there will be no negative impacts on the natural feature or its ecological functions. This is EIS aims to fulfill the requirements of the Town of Blue Mountains Official Plan by demonstrating no negative impacts to the identified natural heritage features or their functions as a result of the proposed development plan.

3 STUDY APPROACH

The following section describes the tasks and assessments that were completed to fulfill the objectives of this study.

A Terms of Reference was submitted to GSCA and the NEC on March 14, 2022, and was approved by Justine Lunt, Environmental Planner with the GSCA on July 12, 2022 (Appendix E). The Terms of Reference was also forwarded to Michael Cook, Planning Ecologist (Grey County); with acceptance received October 5, 2023 (Appendix E). No response was received from the NEC at the time of submission of this report.

3.1 Background Data Review and Sources

The following background documents and sources were reviewed as part of this report:

- Natural Heritage Information Centre (NHIC; MNRF, accessed 2023);
- Ontario Reptile and Amphibian Atlas (ORAA, Ontario Nature, accessed 2023);
- Ontario Breeding Bird Atlas (OBBA; Birds Canada, accessed 2023);
- Land Information Ontario (LIO; MNRF, accessed 2023);
- Species at Risk in Ontario list (MECP, 2023);
- Aquatic Species at Risk distribution map (DFO, accessed 2023);
- Grey Sauble Conservation Authority Regulation mapping (GSCA, accessed 2023);
- County of Grey Official Plan (2019) and Schedules; and
- Town of the Blue Mountains Official Plan (2016) and Schedules.

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.

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

Dates	Start/End Time	Type of Survey	Ecologist
March 22, 2022	10:30 – 14:30	Bat Snag Density Surveys	Melissa Fuller, H.B.Sc. Heather Marks, B.Ss., M.F.C.
April 13, 2022 May 11, 2022 June 15, 2022	22:10 – 22:45 20:30 – 21:05 22:25 – 22:50	Amphibian Calling Surveys	Melissa Fuller, H.B.Sc., Brad Baker, H. B.Sc.
June 2, 2022 June 20, 2022	05:46 – 07:14 05:45 – 07:10	Dawn Breeding Bird Surveys	Melissa Fuller, H.B.Sc.
June 13, 2022 to June 23, 2022	Start: Sunrise End: Sunset	Bat Acoustic Monitoring	Sarah Robbins, H.B.E.S. Brad Baker, B.Sc.
March 22, 2022 June 13, 2022 August 12, 2022	10:30 – 14:30 09:00 – 16:00 10:00 – 14:00	Drainage Assessment	M. Fuller, B.Sc
October 7, 2021 June 13, 2022 August 12, 2022	09:00 – 16:00 09:00 – 16:00 09:00 – 16:00	Ecological Land Classification/Vegetation Surveys	Heather Marks, B.Sc., M.F.C. Melissa Fuller, H.B.Sc. Stephanie Brady, H. B.E.S.
August 12, 2022	10:00 – 14:00	Wetland Delineation	Melissa Fuller, H. B. Sc.

3.2.1 Vegetation Community Mapping and Surveys

The vegetation communities were assessed on the property using the Ecological Land Classification (ELC) method described by Lee *et al.* (1998). The following steps took place to ensure that a thorough and full assessment of vegetation species and the associated ecological communities was completed:

1. Site reconnaissance to ascertain major community types and general site characteristics;
2. Preliminary determination of ELC boundaries through a review of aerial photography; and
3. Refinement of those ELC boundaries through seasonal site visits that were scheduled to capture a broad range of vegetation species during their various flowering windows.

Vegetation cover data was recorded within each ELC community during the seasonal site visits, including species composition and general understory characteristics. For each community layer (*i.e.*, canopy, subcanopy and understory), the dominant and/or codominant vegetation species were identified.

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 F.

3.2.2 Drainage Assessment

Concentrated surface flows on the property were assessed during seasonal site visits to identify overland flow patterns throughout the growing season (*i.e.,* spring to fall). This assessment helped to determine drainage patterns on the property and the connection of those features to known fish habitat (Georgian Bay) downstream of the northern property limit. Drainage conveyance features were recorded on site using a handheld GPS unit and are indicated in Figure 2.

3.2.3 Amphibian Calling Surveys

Surveys were conducted following the Marsh Monitoring Program standards (Bird Studies Canada, 2009) to assess the function of the identified wetland feature 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.

Three stations were established on the property which corresponded to various wetland features that were identified during background review; 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.

Results of the amphibian call surveys can be found in Table 2 and in Section **Error! Reference source not found.** of this report.

3.2.4 Dawn Breeding Bird Surveys

Birks NHC reviewed OBBA square 17TNK53 in preparation for breeding bird surveys (Appendix H).

Dawn breeding bird surveys were conducted on the property 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. Six breeding bird stations were surveyed on June 2, 2022, and June 20, 2022 (see Figure 2).

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

3.2.5 Bat Habitat Assessment

Snag Density Survey

Snag density surveys were completed to determine presence of potential maternity roosting habitat for Endangered bat species following the protocol outlined in the Survey Protocol for Species at Risk Bats within Treed Habitats (MNRF, 2017). The surveys were conducted during leaf-off conditions so that the view of tree cavities and crevices were not obscured by foliage.

Twenty-three plots (with 12 m radius) were randomly established within the appropriate forest and swamp ELC polygons (Appendix G). All trees with a diameter at breast height (DBH) of ≥ 25cm were identified within the plots. Characteristics of each identified tree, such as tree species, decay class (scored between 1-6), DBH, presence of decay features (*i.e.*, loose bark, cavities, cracks) and location were recorded for each tree identified within a plot. Snag density was then calculated to determine number of snags per hectare.

No minimum threshold is required in terms of snag density for an area to be considered SAR bat habitat. However, ELC communities found to have a snag density of ≥10 snags per hectare may be considered high quality candidate maternity roosting habitat (MNRF, 2017).

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 (MNRF, Guelph District, April 2016), with some modifications given site conditions (*e.g.,* small habitat ELC units) and study objectives.

Three Wildlife Acoustics SM4BAT FS Bat Acoustic Monitors were deployed in June 2022 for a period of 10 good-weather days following the completion of the snag density survey and habitat assessment within the forest and swamp communities of the property. The location of each Bat Acoustic Monitor was generally selected based on proximity to snag density plots with a higher relative number of

composite snag trees, with the lowest amount of clutter possible and in consideration of anticipated future tree removals within the property. Given the size of the property and 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). 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.

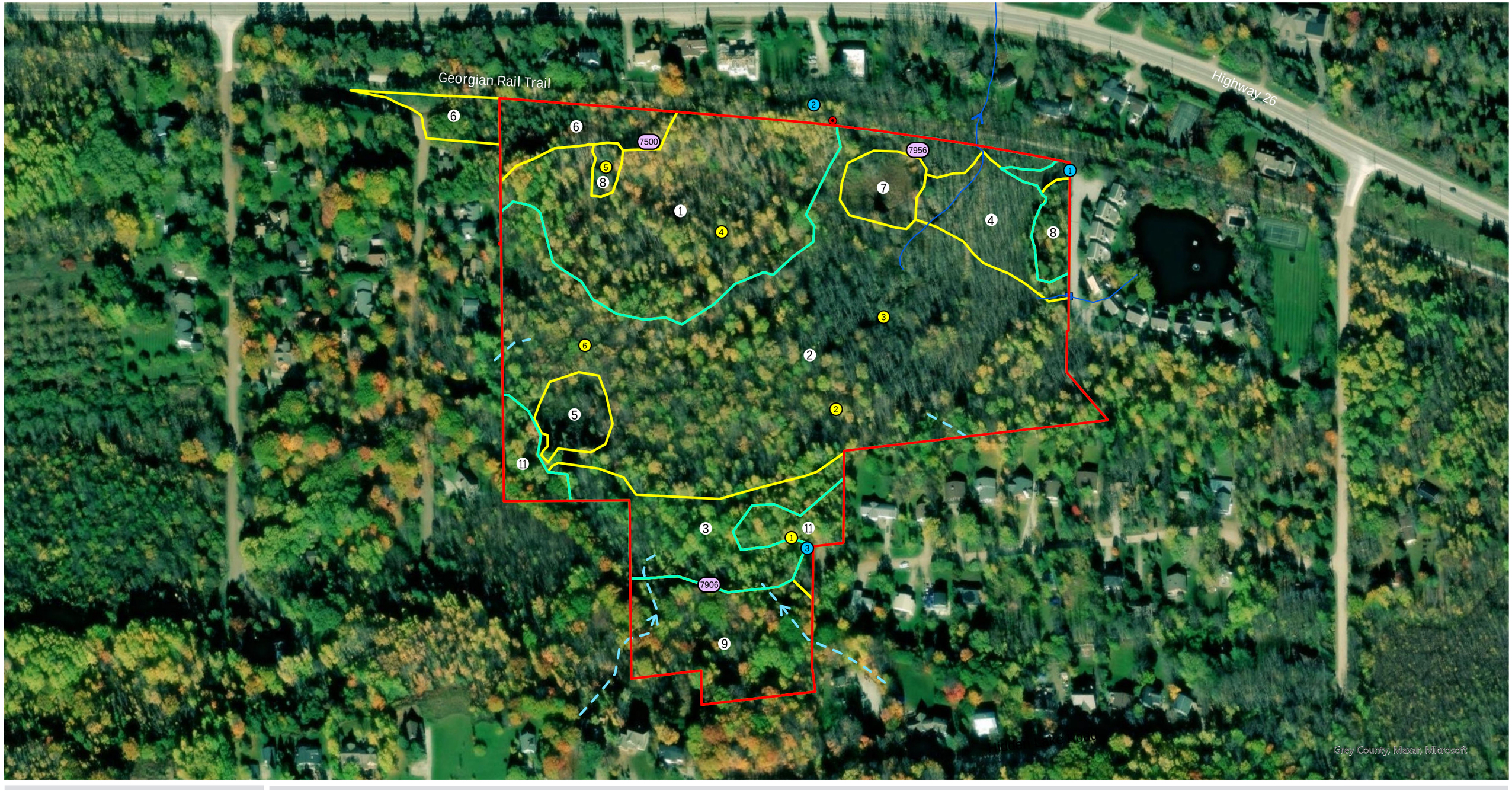
Wildlife Acoustics Kaleidoscope Pro 3 Analysis Software was used to process the sound files recorded during the sampling event. The Kaleidoscope program converted call data into individual files and was used to filter out false trigger noise such as rain and wind. Each file (or pass) which was confirmed as a bat call was automatically classified with species identification using the Kaleidoscope software's bat classifiers. Calls were then manually vetted by Birks 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*). For this project, due to the number of calls recorded during the 10-day survey period, a minimum of 10% of the call files per auto ID classifier group for each Bat Acoustic Monitor, was confirmed and manually evaluated by Birks NHC ecologists.

All call files were categorized by 30-minute intervals starting at sunset and ending at sunrise, and a call curve was created to demonstrate call magnitude over time. The results can be found in Appendix G and are discussed in Sections 5.8.1 and 6.2.4.

3.2.6 General Wildlife Surveys

A wildlife assessment for the property was completed through incidental observations during each site assessment and survey. Evidence of wildlife, such as dens, tracks, and scat, was recorded and used as part of the general assessment of habitat use and function. For each observation, notes and, when possible, photos were taken.



Concession 4 Part of Lot 15

Town of the Blue Mountains

Figure 2.
Existing Conditions and Survey Locations

- Property Limit
- Watercourse (LIO/Birks NHC)
- Drainage Feature (Birks NHC)
- Culvert Location (Approx.)
- Butternut Tree
- Wetland Limit (Birks NHC)

Vegetation Communities

1) FODM8-1: Fresh – Moist Poplar Deciduous Forest
2) SWDM3-2: Silver Maple Mineral Deciduous Swamp
3) SWDM2-2: Green Ash Mineral Deciduous Swamp
4) MAMM1 / SWDM2-2: Gramminoid - Ash Mineral Swamp
5) SWTM5-1: Buttonbush Mineral Deciduous Thicket Swamp
6) FOMM4-3: Dry-Fresh White Cedar - Hardwood Mixed Forest
7) MAMM1-2: Cattail Gramminoid Mineral Meadow Marsh
8) FOCM4: Fresh – Moist White Cedar Coniferous Forest
9) FODM5-10: Dry-Fresh Sugar Maple - White Birch - Poplar Deciduous Forest
10) THDM2-6: Buckthorn Deciduous Shrub Thicket
11) FODM7-2: Fresh - Moist Green Ash - Hardwood Lowland Deciduous Forest

Survey Locations

- Amphibian Call Survey
- Breeding Bird Station
- Bat Acoustic Monitor

MAP DRAWING INFORMATION:
DATA PROVIDED BY: ESRI CANADA

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

N W E S

0 30 60 120 180 240 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\HiddenLake

PROJECT: 04-044-2021 STATUS: DRAFT DATE: 16/10/2023

These observations were used in the consideration of the wildlife habitat function associated with the Study Area. Wildlife habitat functions were then evaluated according to provincial criteria outlined in the Significant Wildlife Habitat Criterion Schedule for Ecoregion 6E (MNRF, 2015).

3.3 Species at Risk Assessment

The SAR assessment included an analysis of habitat of SAR reported to occur in the Study Area. Birks NHC reviewed data obtained through a desktop analysis and the comprehensive field surveys related to potential habitat for provincially designated species; notably SAR listed under O. Reg 230/08 of the ESA as Threatened or Endangered. Habitat requirements and appropriate designations for all species that could potentially occur within the Study Area were considered during this assessment. Where potential SAR habitat was identified on the property, site assessment information was analysed to determine the function of the potential habitat and whether the proposed works comply with the regulations under the ESA.

4 EXISTING CONDITIONS

4.1 Vegetation Communities and Plants

In order to obtain the most comprehensive vegetation data, one survey was completed during each of the three growing seasons: spring, summer, and fall. A map depicting the resulting ELC communities can be found on Figure 2 and a comprehensive vegetation list can be found in Appendix F.

4.1.1 Ecological Land Classification Communities

A total of 11 ELC communities were identified on the property (Figure 2). In general, the communities represent the wetland habitats of the 6E-4 Meaford Ecodistrict and the Mixedwood Plains ecozone. The slope of the FODM5-10 community as well as the vegetative species found therein are representative of the natural topography and habitats of the Niagara Escarpment.

The 11 ELC communities identified on the property are as follows:

1. FODM8-1: Fresh – Moist Poplar Deciduous Forest
2. SWDM3-2: Silver Maple Mineral Deciduous Swamp
3. SWDM2-2: Green Ash Mineral Deciduous Swamp
4. MAMM1/SWDM2-2: Graminoid - Ash Mineral Swamp
5. SWTM5-1: Buttonbush Mineral Deciduous Thicket Swamp
6. FOMM4-3: Dry-Fresh White Cedar – Hardwood Mixed Forest
7. MAMM1-2: Cattail Graminoid Mineral Meadow Marsh

8. FOCM4: Fresh – Moist White Cedar Coniferous Forest
9. FODM5-10: Dry-Fresh Sugar Maple – White Birch – Poplar Deciduous Forest
10. THDM2-6: Buckthorn Deciduous Shrub Thicket
11. FODM7-2: Fresh - Moist Green Ash - Hardwood Lowland Deciduous Forest

These vegetation community are representative of undulating bottom lands with high moisture content. In some wetland communities, such as SWDM3-2, SWDM2-2, SWTM5-1 and MAMM1/SWDM2-2, groundwater will rise above the surface during periods of high rainfall such as in the spring and after the spring freshet, and then recede during dryer periods, such as in the summer.

Most of the communities identified on the property are considered to be common in Ontario. They are capable of supporting a diverse range of vegetation species, including a small number of plants that are considered to be regionally rare (see Section 4.1.2). The SWTM5-1 community may be considered a less common community type for the Grey County region as it contains a dense population of Eastern Button Bush (*Cephalanthus occidentalis*) and a Grey Dogwood (*Cornus racemosa*), both identified as regional rare species (Owen Sound Field Naturalists, 2023).

4.1.2 Plants

A total of 114 plant species were identified on the property. Species identified throughout the central portion of the property, such as Green Ash (*Fraxinus pennsylvanica*), Red Maple (*Acer rubrum*), Black Ash (*Fraxinus nigra*) and Silver Maple (*Acer saccharinum*) are indicative of the wetter habitats found in the 6E-4 Meaford Ecodistrict. The temperate effect caused by Georgian Bay (Lake Huron) is reflected by the presence of southern species such as Zigzag Goldenrod (*Solidago flexicaulis*) and disjunct boreal species such as Balsam Fir (*Abies balsamea*).

The final plant list was cross referenced with the Vascular Plant List – Bruce and Grey County (Owen Sound Field Naturalists, 2023) for presence of regionally rare species. Four species were identified that are considered regionally rare. These species and the ELC communities where they were identified are listed below:

- Rough Aven (*Geum laciniatum*) – SWDM2-2;
- Grey Dogwood (*Cornus racemose*) – SWTM5-1;
- Common Bearberry (*Arctostaphylos uva-ursi*) – FODM8-1, FOCM4, and;
- Eastern Button Bush (*Cephalanthus occidentalis*) – MAMM1/SWDM2-2, SWTM5-1.

Two Endangered plant species were observed on the property: Butternut (*Junglans cinerea*) and Black Ash. One Butternut tree was observed, along the northern property limit between the FODM8-1 and

SWDM3-2: vegetation communities (Figure 2). Black Ash trees were observed throughout the Ash swamp communities present within the central portion of the property.

4.2 Aquatic Habitat

The property is located within the GSCA watershed, between the Indian Brook and Townline subwatersheds. Drainage features within this area originate within the Nipissing Ridge and Niagara Escarpment, which then travel through areas of high relief northwards towards Georgian Bay.

The property was attended numerous times throughout the 2022 field season (March, June and August) during which flow path and flow characteristics of four seasonal drainage features were documented. Three of the features originate within the Niagara Escarpment south of the property and convey seasonal and intermittent flows to the central SWDM3-2 swamp community (Figure 2) where the features dissipate; thus the features do not constitute fish habitat. As noted, the flows observed were seasonal in nature, with no flow observed in late summer 2022. The drainage features showed evidence of substrate sorting and channel morphology, which indicates that these features regularly convey flow.

Drainage from the property is concentrated within an outlet feature located in the north-east corner of the property (Figure 1 and Figure 2). The feature conveys flow through a 50 cm corrugated steel pipe culvert under the Georgian Trail footpath, northwards towards Georgian Bay. The feature then enters private property north of the trail and the Hwy 26 ditch right-of-way, eventually outletting to Georgian Bay (Figure 1). The outlet of the feature was not accessible due to the presence of private property in proximity to the feature. It is presumed that under most flow conditions and lake water levels the drainage feature would dissipate through a cobble/bedrock beach which is the typical shoreline condition of Georgian Bay in this location. The bedrock beach of Georgian Bay creates a barrier to fish passage. Thus, the outlet feature is presumed be seasonal indirect fish habitat.

No aquatic Species at Risk have been mapped by DFO within the drainage feature or within Georgian Bay, a distance of 1 km of the property.

4.3 Wildlife Habitat

4.3.1 Amphibians and Reptiles

Wetland habitat features that support amphibian breeding habitat were found throughout the central and northern-eastern portions of the property. These habitat features are comprised of ephemeral water features, such as shallow marshes, standing pools that are fed by seasonal drainages.

During amphibian call surveys, the following frog species were heard calling on the property: American Toad, Green Frog, Spring Peeper, Wood Frog, Grey Tree Frog and Western Chorus Frog.

Table 2: Data summary of anuran call surveys.

Survey Station	April 13, 2022			May 11, 2022			June 15, 22		
	Species	[1]Species Abundance Code (L)	Number of Individuals	Species	Species Abundance Code (L)	Number of Individuals	Species	Species Abundance Code (L)	Number of Individuals
1	Spring Peeper Wood Frog	L3 L3	-- --	Spring Peeper American Toad N. Leopard Frog	L3 L3 [¥]potential	-- --	Grey Tree Frog American Toad Green Frog	L3 L1 L2	-- 3 10
2	Spring Peeper Wood Frog Western Chorus Frog	L3 L3 L1	-- -- 3	Spring Peeper American Toad Western Chorus Frog	L3 L3 Could not confirm	-- -- --	Grey Tree Frog	L3	--
3	Spring Peeper Western Chorus Frog	L3 L2	-- 7	Spring Peeper Grey Tree Frog	L3 L3	-- --	N/A	--	--

[1] L1 - Individuals can be counted, calls not simultaneous; L2: Calls distinguishable, some simultaneous calling; L3: Full chorus; calls simultaneous and overlapping, individuals can't be counted.

[¥]Northern Leopard Frog individuals potentially heard calling; species presence was difficult to confirm due to noise disturbances created by American Toad chorus.

The highest quality amphibian breeding habitat with the most amount of activity was found in the MAMM1 and MAMM1/SWDM2-2 vegetation communities (Figure 2). One Northern Leopard Frog was thought to be heard calling at survey station 1; it was difficult to confirm species presence due to sound disturbances created by the American Toad chorus at this station. Similarly, Western Chorus Frogs were heard calling at station 2 in May, but individuals could not be counted due to sound disturbances. Additionally, a Green Frog chorus (L3) was noted in proximity to survey station 1 as an incidental observation during the vegetation survey that took place on June 13th, 2022.

Data obtained through visual observations and amphibian call surveys indicate that significant amphibian breeding habitat exists on the property, in accordance with the Significant Wildlife Habitat Criteria Schedules for Ecoregion 6E (OMNR, 2015), relating to L3 recorded for Spring Peeper, Wood Frog, Grey Tree Frog and American Toad and Green Frog. A summary of the results obtained through the amphibian call surveys can be found in Table 2.

Although no salamanders were identified during the field surveys, it is expected that common salamander species, such as Eastern Red-backed Salamander, Spotted Salamander, Blue-spotted Salamander, and Red-spotted Newt (Ontario Nature, 2023), are utilizing wetland and swamp habitats in addition to the frog and toad species identified in the Study Area.

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, 2023), the following reptiles are expected to be present in the Study Area: Eastern Gartersnake, Milksnake, Midland Painted Turtle, and Snapping Turtle (Special Concern).

4.3.2 Dawn Breeding Birds

Data obtained from the OBBA square 17TNK53 (Appendix H) was used to gain an understanding of the regional context for this study and to identify potential for SAR birds in the Study Area. A total of 42 species of birds were identified as showing some evidence of breeding activity in square 17TNK52. Among the 42 species identified, two are listed as a SAR in Ontario; Eastern Meadowlark (Threatened) which showed probable breeding through territorial evidence (but lacks habitat within the property or Study Area) and Eastern Wood-pewee (Special Concern) which showed possible breeding evidence through the observation of singing males.

A total of 37 bird species were identified on the property during dawn breeding bird surveys and through incidental observations. In total, 24 species were determined to have ‘possible’ breeding evidence associated with the property, and 7 as having ‘probable’ evidence. Six species were observed on the property outside of the breeding season for those individuals. The surveys confirmed the presence of Eastern Wood-pewee; this species was found to have established territory in the SWDM3-2 vegetation community and thus show probable breeding evidence. 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, Red-breasted Nuthatch, Black-Throated Blue Warbler and Veery are more commonly found in forest habitat types. Red-winged Blackbird and Green Heron, along with Canada Goose and Mallards, are predominantly found in open aquatic habitat types such as those identified along the northeastern limit of the property. Seven species identified as Area Sensitive species (OMNR, 2000) were observed; only one of which demonstrated probable breeding evidence associated with the property (American Redstart). Species diversity of Area Sensitive species was not sufficient to qualify any habitats as SWH, or identify any other avian dependant SWH, as outlined in Appendix J.

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

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 Muskrat, 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.

Bats and Bat Habitat

Snag density surveys conducted throughout the property indicate that candidate high quality candidate bat maternity roosting habitat (>10 snags/ha) exists within limited portions of the property.

In total, 43 snag trees with a DBH of >25 cm were identified in the 23 survey plots. Among those identified, 30 were found to contain crevices or holes at a height of >10 m and were of the appropriate decay class (class 1-3) to provide high quality roosting habitat for bats. These snag trees were identified as composite trees (*i.e.,* snags of higher quality maternity roosting potential). Given that a total of 1.15 ha of the property was surveyed (23 plots x 0.05 ha), results of the snag density surveys indicate that the property contains approximately 26.1 composite trees per ha. Areas of higher relative composite tree density were noted on the property, in both the southern and north western deciduous forest habitats, within the SWDM3-2 Silver Maple Mineral Deciduous Swamp, and FODM7-2 Fresh - Moist Green Ash – Hardwood Lowland Deciduous Forest (Appendix G).

In total 15,415 call files were recorded on the property from Bat Acoustic Monitors 7500,7906 and 7956. The call files contained calls produced by seven (7) of the eight (8) Ontario bat species, including the three (3) SAR bat species (*Myotis lucifugus, Perimyotis subflavus,* and *Myotis septentrionalis*). A summary of the call files can be found in Appendix G.

Call curve analysis of Bat Acoustic Monitor 7500 (located in the central north portion of the property) depicts two peaks; one just after sunset and one just before sunrise (Appendix G). This suggests that a maternity roost may be present in proximity to the survey station as a large number of bats could be producing the calls while exiting the roost in the evening and returning to the roost in the morning.

The two other Bat Acoustic Monitors (7906 and 7956) showed a peak in activity at sunset (7906) and sunrise (7956) with consistent activity between sunrise and sunset throughout the night. This indicates that bats are present in the area and moving throughout the adjacent swamp and meadow marsh habitats, indicative of foraging and hydration behaviour for the species.

5 NATURAL HERITAGE FEATURES AND FUNCTIONS

Natural heritage features refer to terrestrial and aquatic environs that support or depend on the natural landscapes in Ontario. Conservation and protection of these features is implemented through the land use planning framework of Ontario, most notably the *Planning Act*, 1990, and the policies set forth in the PPS. The features identified herein are also directly correlated to natural heritage features identified as KNHF and KHF within the NEP. For the purpose of this report, both KNHF and KHF are referred to hereafter as natural heritage features.

5.1 Provincially Significant Wetland

No Provincially Significant Wetlands were identified in the Study Area.

5.2 Other Wetlands

According to the NHIC, un-evaluated wetlands are present in the Study Area, including on the property. Other Wetlands have also been identified on the Property in Appendix 1 – Constraint Mapping of the Town of Blue Mountains Official Plan. The presence of wetland habitat was confirmed during Birks NHC field surveys, and was comprised of Maple Swamp, Ash Swamp and meadow marsh (Figure 2). The extent of wetland habitat was delineated in August 2022, as shown on Figure 2.

5.3 Significant Woodlands

According to the Town of Blue Mountains Official Plan Appendix 1 – Constraint Mapping, forest habitat on the property is classified as Significant Woodlands (Appendix J). No development or site alteration is permitted in Significant Woodlands or adjacent lands (*i.e.*, 120 m) unless it can be demonstrated that no

impacts will occur to Significant Woodland habitat or to its habitat functions. Birks NHC confirmed the presence of numerous woodland vegetation units within the property (FODM8-1, SWDM3-2, SWDM2-2, FOMM4-3, FOCM4, FODM5-10, FODM7-2) that contribute to the larger Significant Woodland Feature.

5.4 Significant Valleylands

No Significant Valleylands were identified in the Study Area.

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 SWH to be present in the Study Area. All SWH functions for Ecoregion 6E that were assessed for presence within the Study Area have been provided in Appendix J. The SWH functions noted below are linked to the associated habitats on the property and adjacent lands.

5.5.1 Seasonal Concentration Areas of Animals

As outlined within the Significant Wildlife Habitat Criteria Schedules for Ecoregion 6E (MNRF, 2015), Seasonal Concentration Areas support annual aggregations of certain species. These seasonal aggregations result in large numbers of individuals, sometimes highly concentrated within relatively small areas. As a result, the loss of, or damage to, these features can result in a significant impact to populations. The following functions may be associated with the Study Area.

Bat Maternity Colonies

For many bat species in Ontario, natural maternal roosting habitat is comprised of roost trees that are in early stages of decay (decay class 1-3) and contain features such as cavities or crevices, or loose, peeling bark. During the summer, female bats often roost in large maternity colonies while males tend to roost in small groups or individually. According to the Significant Wildlife Habitat Criteria Schedules for Ecoregion 6E (MNRF, 2015), candidate maternity colonies SWH are located in mature deciduous or mixed forest stands with greater than 10 large diameter (>25cm dbh) wildlife trees per hectare. 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. It remains extremely difficult to confirm this SWH designation as it requires confirmation of use by more than ten Big Brown Bats or more than five Silver-haired Bats.

Potential bat roosting habitat is present throughout the property within the Significant Woodland and Big Brown Bats and Silver-haired Bats were identified during acoustic monitoring surveys. Therefore, woodland habitat on the property may provide maternity roosting SWH.

Turtle Wintering Areas

Turtles overwinter in permanent water bodies with soft, muddy substrates, such as large wetland, bogs, and fens that provide an adequate source of Dissolved Oxygen. Water in these features must be of sufficient depth to not freeze to the substrate. These sites are typically used annually and are in the same general area as their core habitat. Sites with the highest number of individuals are considered most significant. According to the Ecoregion 6E Criteria Schedules, ELC classes SW, MA, OA, and SA may provide this habitat function.

Although no targeted Turtle Wintering surveys were conducted on the Subject Lands, the MAMM1 and MAMM1/SWDM2-2 communities have the potential to provide this habitat function. Given the presence of higher quality overwintering habitat in the greater landscape and the lack of turtle observations during field investigations, the pools identified in the SWMT3-6 community are considered marginal turtle wintering habitat.

Reptile Hibernaculum

Reptiles are generally unable to withstand the freezing temperatures during the winter season. To combat the negative effects of the winter conditions on their metabolic functions, reptiles hibernate in rock crevices and burrows in the ground below the frost line. These areas are typically accessed through rocky outcrops, abandoned and crumbling foundations, tree roots and other naturalized features. Like other SWHs, confirmed hibernaculum sites are the only known sites in the area and those with the highest number of individuals are considered to be the most significant.

Congregations of snakes on sunny warm days are considered indicators of potential reptile hibernaculum; no congregations of snakes were observed on the property during site investigations.. The sloped topography of the property's southern limit contains rocky outcrops and exposed tree roots that may provide access to underground hibernaculum features. Given the saturated soil conditions on the remaining portion of the Study Area, potential reptile hibernaculum SWH is expected to be restricted to the slope.

5.5.2 Specialized Habitats of Wildlife

Specialized Habitat for Wildlife identifies the need of many wildlife species for substantial areas of suitable habitat for successful breeding. The populations of species included under this category are expected to decline when habitat becomes fragmented and reduced in size.

The following Specialized Habitats for Wildlife are potentially present within the Study Area:

Turtle Nesting Areas

Turtle nesting areas are typically comprised of bare mineral, sandy or gravelly soils that are exposed to the sun and located in the vicinity of other turtle habitat features such as waterbodies and wetland features. Areas with sandy and gravelly substrates that are located next to roads or road embankments and shoulders are not considered SWH (OMNR, 2015). Five or more nesting Midland Painted Turtles or one or more Northern Map Turtle or Snapping Turtle must be present to confirm this habitat function (OMR, 2015).

No turtles were observed on the property or in the Study Area during site investigations. However general turtle habitat features are present on the property, and it is expected that common turtle species, such as Common Snapping Turtle, are present in the Study Area. Therefore, potential nesting habitat is also considered to be present in the area, particularly within open habitats of unconsolidated soils. That said, the nesting habitat is considered to be marginal given the abundance of closed canopy within the property limits.

Amphibian Breeding Habitat (Woodland/Wetland)

This habitat function is important to the life cycle of Ontario's salamanders, frogs, toads and eastern newt species. Wetlands greater than 25 m diameter that are found to support high species diversity are considered to be SWH (OMNR, 2015). To confirm this habitat function, confirmation of 1 or more breeding newt/salamander species or 2 or more breeding 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 is required.

Amphibian activity was noted at all stations on the property with call level 3 identified at all three survey stations for Spring Peeper, Wood Frog, Gray Tree Frog and American Toad. Green Frog was also noted as having call level 3 during a daytime survey. Thus, all wetland communities within the property are considered to provide SWH for both Woodland and Wetland Amphibian Breeding.

5.5.3 Habitat of Species of Conservation Concern

The following Species of Conservation Concern are considered to be present within the Study Area:

Common Snapping Turtle (*Chelydra serpentina*)

The Common Snapping Turtle is a large freshwater turtle that spends most of its life in shallow waters. It prefers waterbodies with soft, muddy substrates for mud basking purposes, as well as leaf litter and an abundance of vegetation for foraging and predator avoidance purposes. Females will travel overland during summer months to find suitable nesting locations which are typically comprised of gravelly or

sandy areas along streams, ponds, or small lakes. Females are often found laying eggs on gravel road shoulders due to the similarities between their typical natural nesting sites. This adaptive behaviour has put their population at risk as a large number of turtles are killed by moving vehicles during their nesting season.

No Common Snapping Turtles were identified on the property during the field surveys. However, basking and foraging habitat for the Common Snapping Turtle was identified in the MAMM1-2 and MAMM1-2/SWD2-2 vegetation communities. Additionally, the gravel pathway of the Georgian Rail Trail likely acts as a nesting area for turtles. Thus, consideration of impact to the species is warranted.

Eastern Wood-pewee

Eastern Wood-pewee is a small flycatcher bird species that is typically found in the mid-canopy of intermediate-aged deciduous and mixed forests (COSEWIC, 2012). It typically nests within a forested habitat and then favours margins of cleaning, such as meadows, roadsides and small forest opening for foraging where insect populations are greater. In the winter, it migrates to South America where it can be found in Colombia, Venezuela, Southern Peru and northern Bolivia. Threats to the species include loss of habitat due to development, reduction in their food source (flying insects), increases in the number of predators, and changes to forest structure due to over browsing caused by White-tailed deer (COSSARO, 2013).

Eastern Wood-pewee was heard calling in the SWDM3-2 vegetation community during both breeding bird surveys (Appendix I). Survey observations suggest that they have established territory within the central portion of the property, associated with the Silver Maple Swamp community (SWDM3-2).

5.6 Areas of Natural and Scientific Interest

No Areas of Natural and Scientific Interested were identified in the Study Area.

5.7 Fish Habitat and Seasonal Drainages

Mapping obtained through the GSCA and LIO, as well as through Birks NHC site assessment, identified various drainage features within the property limits. Three main features were noted on the property during the preliminary site assessment: two entering the wetland in the south by diffuse overland flow and one exiting the wetland though a culvert under the Georgian Bay Trail (Figure 2). These features convey flow from the Niagara Escarpment northerly towards Georgian Bay. Of the three features identified, only the outflow drainage feature has been identified as seasonal indirect fish habitat, given the presumed barrier to fish associated with high relief and rocky shore of the Georgian Bay shoreline in this location. No other fish habitat is associated with the property.

No aquatic SAR are mapped in the Study Area (DFO, 2019).

The southern features are also not considered to be 'Intermittent Streams' as defined within the NEP, as it appears that the water table does not intersect the invert of the stream bed at any time of the year (MMAH, 2017). The northern drainage may be considered an 'Intermittent Stream' based on this definition.

5.8 Habitat of Threatened and Endangered Species

5.8.1 Endangered Bat Species

Four species of bat have been listed as Endangered in Ontario since 2013: Eastern Small-footed (*Myotis leibii*), Little Brown Myotis (*Myotis lucifugus*), Northern Myotis (*Myotis septentrionalis*), and Tri-colored bat (*Perimyotis subflavus*). Important habitat functions for these species include hibernacula, day roosts, foraging habitat, and maternity roosts.

Hibernacula for bats in Ontario are often found in caves, abandoned mine shafts, underground foundations, and karsts. These features were not documented within the property limits, and thus this habitat function is not likely associated with the property.

Day roosts are used by males and non-reproductive females as they move across the landscape and can take the form of any tree with appropriate snag features such as loose bark, cracks or crevices, or leaf clusters within those trees. Foraging habitat is commonly associated with open woodland features, wetland communities, forest edges and open field, all of which provide an abundance of flying insects.

Among the four listed Endangered bat species, three are known to form maternity roosting colonies in forested habitats: Little Brown Myotis, Northern Myotis, and Tri-colored Bat. Evidence has shown that Little Brown Myotis and Northern Myotis tend to utilize crevices and holes in tree snags and old buildings, while Tri-colored Bat roosts in tree leaves and needles (Humphrey, 2017; R.W. Watt & Caceres, 1999). Additional studies on the foraging habits of Ontario bat species found that proximity to water and hibernacula were also factors in the presence of Myotis spp. (Furlong, Deward, & Fenton, 1986).

The summer activities of Eastern Small-footed Myotis are poorly understood, but it is thought to primarily roost in open, sunny rocky habitats, including cracks and crevices in cliffs and boulders, in talus slopes, beneath stones on rock barrens and in rocky outcrops containing crevices; they have also occasionally been found in buildings. The Study Area does not contain any type of rocky habitat or cliffs/slopes and there are no known hibernacula sites in vicinity to the property or the Study Area. Therefore, this area is not considered suitable habitat for the Eastern Small-footed Myotis. Bat acoustic monitoring did not identify the presence of Eastern Small-footed Myotis.

Acoustic monitoring surveys confirmed the presence of Little brown Myotis, Northern Myotis, and Tri-colored Bat utilizing portions of the property (Appendix G). Data obtained during acoustic monitoring surveys suggest that the Study Area is likely being used for foraging and summer roosting purposes, specifically for *Myotis lucifugus*. Northern Myotis and Tri-colored Bat recorded during this survey were not in high numbers, indicating that a maternity colony is not present within the Study Area. It is more likely that those two species are utilizing the open and swamp communities of the property for foraging purposes.

Based on the call curve graphs in Appendix G, there is potential that a maternity roost for Little brown Myotis may be present in proximity to Bat Acoustic Monitor SM7500. However, given the absence of an abundance of composite snag trees in proximity to this monitor (see Figure 2 and Appendix G) it is unlikely that a maternity roost is located directly adjacent to the location of the monitor as the FODM8-1 vegetation community contained a relatively low snag density number. Notwithstanding, high composite snag trees were determined to be present within the SWDM3-2 vegetation community. Given the presence of standing water (foraging) and suitable snag trees (roosting), the potential exists for the presence of a *Myotis lucifugus* bat maternity colony within this vegetation community.

The presence of rural residential properties may also be considered in the habitat assessment and overall high activity of *Myotis lucifugus.* In Ontario, this species is known to utilize anthropogenic structures in establishing maternity colonies.

5.8.2 Black Ash

Black Ash is a medium-sized, shade tolerant hardwood tree that is predominantly found in swamps, floodplains, bogs, fens, and riparian areas. It grows throughout most of Ontario, ranging from southern Ontario east into Quebec and west into Manitoba. Although Black Ash is relatively common, it is highly susceptible to the invasive Emerald Ash Borer (*Agrilus planipennis* Fairmaire) and has experienced a significant decline in population since the beetle was introduced. As such, it was added to the Species at Risk in Ontario List (O.Reg. 230/08) as an Endangered species on January 26, 2022.

The MECP is currently working towards a recovery and protection plan for Black Ash and has temporarily suspended ESA protections for a period of two years from the time this species was listed under O.Reg. 230/08. Protections for the species will be enforced starting on January 26, 2024.

5.8.3 Butternut

Butternut is a small to medium sized deciduous tree that is listed as an Endangered species in Ontario. The Endangered status of Butternut is based on observed declines due to a fungal disease known as

Butternut Canker that often results in tree mortality. This tree species can grow in a variety of treed and open habitats, individually or in small groups. Disturbed areas (*i.e.*, fencerow, road, trail) are more likely to have Butternut because the tree species is intolerant of shade and requires open sunlight. However, Butternut can also occur in forested communities in a canopy opening or near the forest edge.

One Butternut tree was identified along Georgian Trail, west of the wetland outlet (Figure 2).

5.9 Seeps and Springs

No seeps or springs were identified within the property or Study Area.

5.10 Lakes

No lakes were identified within the property or Study Area.

5.11 Natural Heritage Features and Functions Summary

The results obtained through the background information review and the site assessments indicate both confirmed and candidate natural heritage features and functions associated within the Study Area. This report will assess the potential impacts to the features and functions summarized in Table 3.

Table 3: Natural Heritage Features and Functions Summary

Natural Heritage Feature	Within Proposed Development Areas	Within 120m of Property	Actions Required
Provincially Significant Wetland	None	None	No actions required.
Other Wetland	Yes	Yes	Assessment of direct and indirect impacts are required.
Significant Woodlands	Yes	Yes	Assessment of direct and indirect impacts are required.
Significant Valleylands	None	None	No actions required.

Significant Wildlife Habitat	<u>Potential</u>
	• Turtle Nesting Area
	• Habitat of Species of Conservation Concern
	  ○ Snapping Turtle
	  ○ Eastern Wood-pewee
		<u>Confirmed:</u>
		• Amphibian Breeding Habitat
		<u>Potential</u>
		• Bat Maternity Colonies
		• Turtle Wintering Area
		• Reptile Hibernaculum
		• Turtle Nesting Area
		• Habitat of Species of Conservation Concern
		  ○ Snapping Turtle
		  ○ Eastern Wood-pewee
			Assessment of direct and indirect impacts are required.

Natural Heritage Feature	Within Proposed Development Areas	Within 120m of Property	Actions Required
Provincial Areas of Natural and Scientific Interest	None	None	No actions required.
Fish Habitat	No	Yes, seasonal indirect habitat	Proposed site alteration is located 91.5 m from the indirect habitat. No further assessment is warranted.
Habitat of Threatened or Endangered Species	Confirmed: • SAR Bats (day roosting habitat only) Potential: • Black Ash	Confirmed: • SAR Bats • Black Ash • Butternut	Assessment of direct and indirect impacts are required.
Seeps and Springs	None	None	No actions required.
Lakes	None	None	No actions required.
Intermittent Streams	No	Yes (northern drainage)	Proposed site alteration is located 91.5 m from the feature. No further assessment is warranted.

6 IMPACT ASSESSMENT

6.1 Proposed Development Plan

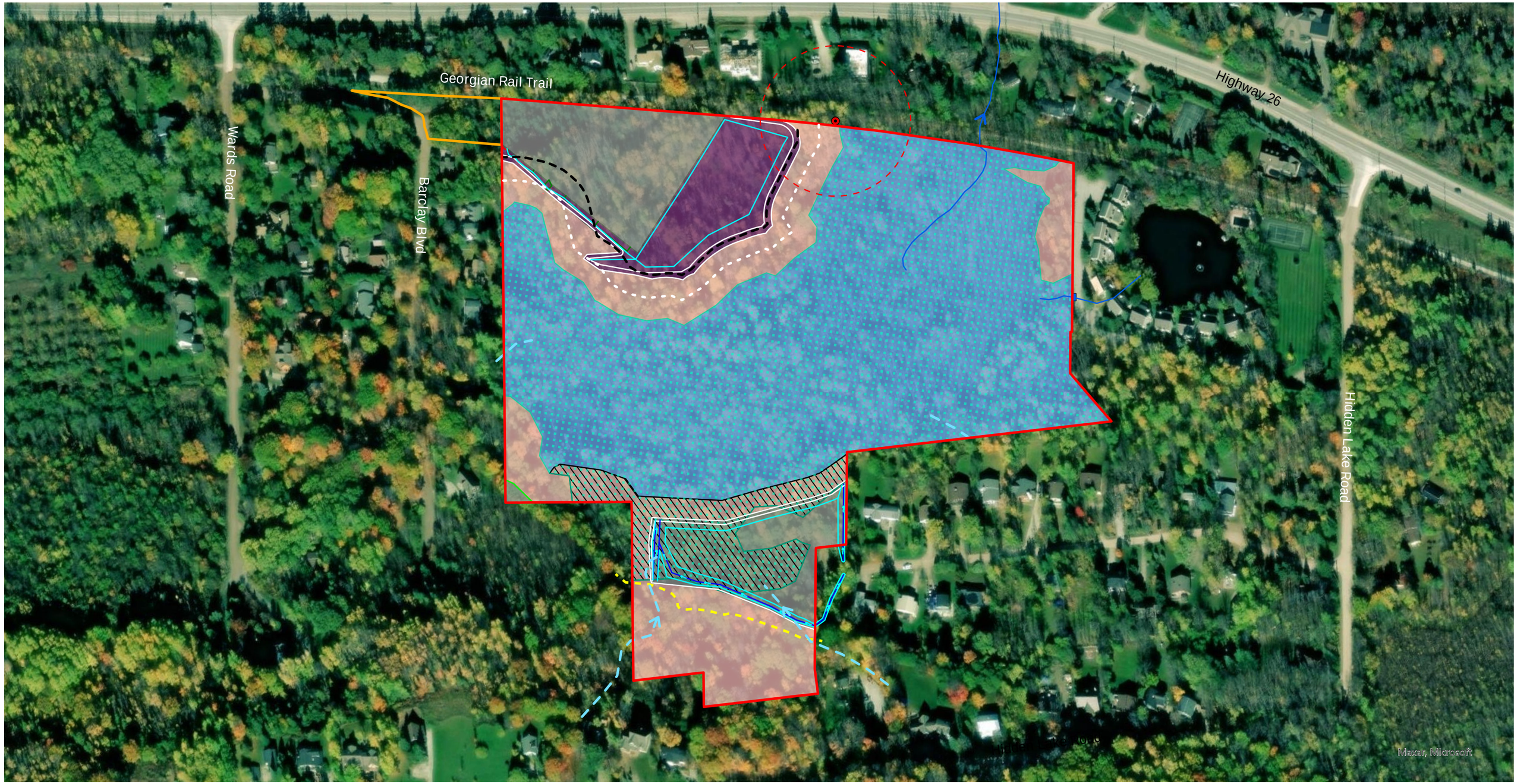
The proponent is proposing to rezone the 10 ha property to create two residential development areas; one in the northwestern corner and one in the southeastern corner of the property (Figure 3 and Appendix K). It is the intent of the property owner to build one single detached residential building with private water treatment within one of the developable areas (which will be been assigned the R1-1 or R1-2 zoning as per Figure 3). The owner is also exploring opportunities to sever the property should the re-zoning application is approved by the Town of the Blue Mountains.

To achieve the developable areas, cut and fill operations are proposed to create additional lands outside of the Regional Floodplain (Tatham, 2023). This will result in the permanent loss or temporary alteration of wetland and woodland habitat (Figure 4). The limit of fill areas generally represent the proposed development areas; as such areas identified for the placement of fill will experience permanent loss of woodland and/or wetland habitat. Conversely, cut areas will experience temporary loss of woodland and/or wetland habitat, will be retained within the Regional Floodplain and thus will be restored to a naturalized state. In total, 2.42 ha of woodland habitat will be removed, with 0.76 ha to be reinstated once re-grading is complete (Figure 4). A portion of this will be composed of swamp woodland (0.44 ha). In addition, 0.18 ha of wetland will be constructed within the diverted drainages in the southern development area.

The resulting developable areas are intended to blend into the surrounding residential area and are not proposed to significantly increase the number of residents in the existing neighbourhoods. The increase in foot traffic will be limited to the number of residents that occupy the newly constructed residence(s).

6.2 Direct Impacts

Direct impacts are those that are immediately evident as a result of development and typically occur during the active phases of construction. The results of direct impacts are often associated with complete or partial removal of a natural feature and alteration to a feature's function to the degree that it can no longer support wildlife species or their associated habitats.



Concession 4 Part of Lot 15

Town of the Blue Mountains

Figure 3. Site Plan

- Property Limit
- Town of The Blue Mountains Right-of-Way
- Watercourse (LIO/Birks NHC)
- Drainage Feature (Birks NHC)
- Culvert Location (Approx.)
- Butternut Tree
- 50m Butternut Tree Radius
- Wetland Area (Birks NHC)
- Transitional Wetland Area (Birks NHC)
- 15m Wetland Setback
- 30m Wetland Setback
- Toe of Slope (approximate)

Proposed Zoning

- Residential (R1-1 or R1-2)
- Hazard Exception (H-E)
- Hazard
- Wetland

BIRKS NATURAL HERITAGE CONSULTANTS

MAP DRAWING INFORMATION:
DATA PROVIDED BY: ESRI CANADA

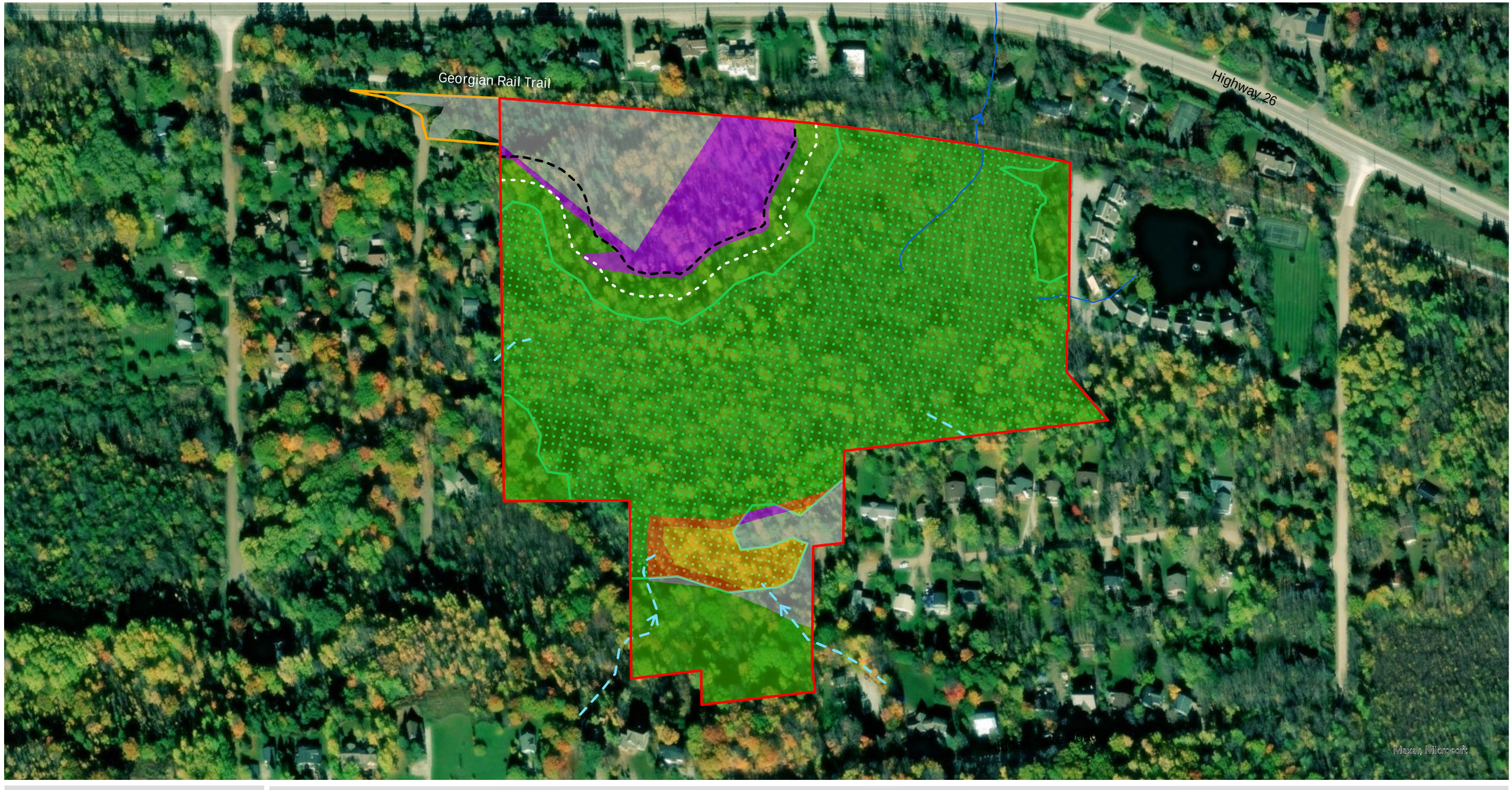
MAP CREATED BY: HM
MAP CHECKED BY: MF
MAP PROJECTION: NAD 1983 UTM ZONE 17N

N W E S

0 30 60 120 180 240 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\HiddenLake

PROJECT: 04-044-2021 STATUS: DRAFT DATE: 14/09/2023



Concession 4 Part of Lot 15

Town of the Blue Mountains

Figure 4. Proposed Works

- Property Limit
- Town of The Blue Mountains Right-of-Way
- Watercourse (LIO/Birks NHC)
- Drainage Feature (Birks NHC)
- Wetland Area (Birks NHC)
- 30m Wetland Setback
- 15m Wetland Setback
- Natural Heritage - Retained (8.31 ha)
- Wetland - Temporarily Altered (0.13 ha)
- Wetland - Lost (0.26 ha)
- Woodland - Lost (1.27 ha)
- Woodland - Temporarily Altered (0.76 ha)

MAP DRAWING INFORMATION:
DATA PROVIDED BY: ESRI CANADA

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

N W E S

0 30 60 120 180 240 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\HiddenLake

PROJECT: 04-044-2021 STATUS: DRAFT DATE: 10/10/2023

Direct impacts are limited to the loss and temporary alteration of Significant Woodland (in the northwest) and both Significant Woodland and wetland (in the southeast). These removals may result in direct impacts to the following natural heritage features:

- Habitat for Regionally Rare Species
- Significant Woodland Habitat
- Wetland Habitat
- Significant Wildlife Habitat
- SAR Habitat

The following sections assess the potential for, and degree of, negative effects that may result from the proposed development plan.

6.2.1 Habitat for Regional Rare Species

Four regional rare vegetation species were identified on the Property during field investigations: Rough Aven (SWDM2-2), Grey Dogwood (SWTM5-1), Common Bearberry (FODM8-1 and FOCM4), and Eastern Button Bush (MAMM1/SWDM2-2 and SWTM5-1).

Common Bearberry was identified in the northwest corner of the Property, within the FODM8-1 (western community) and FOCM4 communities. Both communities are partially or fully located with the proposed northwestern residential parcel. Approximately 0.81 ha of the FODM8-1 will remain unaltered and another 0.73 ha of the community will be temporarily altered. The FOCM4 community will be permanently lost as a result of the proposed cut and fill operations.

An opportunity to restore Common Bearberry habitat and replant individuals is available in the areas that are to be temporarily altered. Recommendations for restoration are provided in Section 7.2.

The remaining three regionally rare vegetation species (Rough Avens, Grey Dogwood, and Eastern Button Bush) are located outside of the area of impact of both development parcels. As such, their habitat will remain intact, and no further direct impacts are expected to occur to these species or their associated habitat.

6.2.2 Significant Woodland and Wetland Habitat

The proposed development plan will result in the following adjustments to the Property:

- Temporary alterations – 0.94 ha
- Permanent losses – 1.53 ha
- Unaltered/Retained Lands – 8.31 ha
- Total naturalized once restored – 9.25 ha

Permanent losses of Significant Woodland and wetland habitat amounts to 1.53 ha, or 15% of that identified on the property and in the Town's Right-of-Way, of which 0.94 ha are temporary alterations to the woodland and wetland. These areas will be located within the Regional Floodplain and are to be restored once regrading has occurred. Once restored, these areas are expected to return to their previous naturalized state and may continue to function as habitat for the wildlife identified in this report. Once the areas of temporary alteration are restored to their original state, 9.25 ha, or 92.5% of the Property will contain naturalized features and will continue to contribute to habitat for the wildlife identified in this report. Preliminary recommendations for an effective restoration plan are offered in Section 7.2.

Forest fragmentation refers to the division of large continuous treed areas into smaller, isolated habitats. These smaller forests are generally more prone to a loss of biodiversity as species that rely on interior woodland habitats are no longer able to carry out their lifecycle processes. The proposed development does not introduce forest fragmentation to the Significant Woodland; no tails or roads are proposed through the middle of the Property and only edge habitat is proposed for alteration. The residential areas have been positioned to take advantage of the terminus of Railway Street and James Street as future access points to the parcels. Additionally, the forested habitat around the proposed lots is to be retained as part of the proposed development plan. Therefore, the forested area will maintain a contiguous feature and will maintain characteristics that would maintain the Significant Woodland designation on the Property. The woodlands post-development will continue to be of sufficient size to maintain the current ecological functions (*i.e.* linkage to other natural features, including the Niagara Escarpment, species diversity within the retained woodland units, and protection of hydrologic features interior to the woodland). Further, SWH associated with the retained woodland (and wetland) habitats (Amphibian Breeding Habitat, Candidate Bat Maternity Roost, Snapping Turtle, Eastern Wood-Pewee) will continue to function post alteration, within the retained and re-naturalized areas of the Property. Impact to SWH is further addressed in Section 6.2.3 below.

The proposal calls for the alteration of interior woodland habitat, resulting in the permanent removal of most of the interior woodland habitat within the property limits. That said, wildlife functions closely

associated with interior habitat (*i.e.,* habitat for interior bird species, raptor nesting and wintering areas, Bald Eagle/Osprey nesting and foraging areas) were not determined to be associated with the property. Thus, the removal of interior habitat on the Property would not be expected to be determinantal to those specific wildlife functions. Further, when considering the entire Significant Woodland, large areas of interior habitat will be retained south and west of the Property, ensuring that the availability of this habitat will persist post site alteration.

The wetland area proposed for permanent loss lies outside of the lands designated as 'Other Wetland' by the Town of the Blue Mountains. The wetland area has no SWH functions associated with the vegetation community and the area is considered highly unstable given the two seasonal drainage features noted in the south. This was evident in species composition of the community; the canopy of the swamp community was comprised of species that are not considered to be wetland obligates (Green Ash, Balsam Poplar) and that tolerate fluctuation in water inputs. Further to this, preliminary wetland delineation by Birks NHC Ecologists in Fall 2021 excluded this area from consideration of wetland habitat, but evidence of sediment deposition associated with the drainage was present. The area was revisited in Summer 2022 and identified as wetland in consideration of the herbaceous layer, which at the time was dominated by Sensitive Fern. The proposal calls for redirection of the drainage inputs to this area of the wetland feature (Figure 3) to allow for establishment of a suitable building area outside of the Regional Floodplain. The eastern channel will be redirected along the toe-of-slope and will confluence with the existing western channel (Figure 3). Once this hydrologic input is removed, the wetland in this location will likely cease to exist. The channel to the west is located outside of the altered area and will continue to function once temporary alterations have been restored (Figure 3). The restoration plan will consider re-naturalization of the constructed drainages (Section 7.2) which will continue to provide wetland habitat in this area. Further, additional wetland areas can be created within the property limits, associated with the northern floodplain adjustment (Figure 3). Thus, although wetland alteration is proposed, overall benefit can be achieved on the property should both development areas be built out (0.26 ha of wetland removed, 0.62 ha restored). Further, wetland habitat functions associated with the property will persist post site alteration; the central wetland unit will continue to receive external drainage inputs post-development, and therefore wildlife habitat functions reliant upon those inputs will persist. Thus, the proposal can proceed without impact to wetland habitat.

6.2.3 Loss and Disturbance to Wildlife and Significant Wildlife Habitat

Typical wildlife species were recorded in the Study Area or are assumed to be present. Additionally, Significant Woodland may function as SWH in the forms identified in Section 5.5 (Bat Maternity Colonies; Turtle Wintering Area; Reptile Hibernaculum; Turtle Nesting Area; Amphibian Breeding Habitat; Habitat for Common Snapping Turtle and Eastern Wood-Pewee).

Studies indicate that Ontario bat species are present in the Significant Woodland habitat on the Property. As discussed above, a large portion of the Property is to be retained in its current state as part of the proposed development (approximately 83%). It is expected that these retained portions of the property will continue to function as habitat for bat maternity colonies, should it be present within those areas not associated with the proposed site alterations. In addition, alternative maternity roosting habitat is available beyond the Property within the Significant Woodland and residential areas. As such, it is expected that bats will continue to use the retained areas of the Property and forested habitat within the local landscape.

Amphibian breeding habitat, marginal turtle wintering habitat, and turtle nesting habitat, including Common Snapping Turtle habitat, is associated with the wetland and swampland habitats located towards the center of the property. These areas are to be retained and unaltered within the 'Wetland' zoning designation. As such, it is expected that the retained wetlands will continue to provide these habitat functions.

No reptile hibernacula or features that indicated potential for reptile hibernacula (old wells, large rock piles, old foundations, etc.) were identified within the Study Area during field investigations. However, this habitat function is generally considered to be present in forests as the large roots of trees generally provide access to underground chambers, particularly on slopes. Large trees with exposed roots were observed on the slope in the southern portion of the Property, as well as within the central SWDM3-2 community. No tree removals or cut/full operations are expected to occur within these areas to accommodate the proposed southeastern residential lot. That said, grading activities are proposed to take place immediately adjacent to the toe of slope which presents the risk of accidental encroachment into potential reptile hibernacula on the slope (see Section 6.4). As such, measures are recommended in Section 7 to mitigate this risk.

Eastern Wood-pewee territory exists on the property, specifically within the SWDM3-2 community (Appendix I; Figure 2). All other areas on the property and beyond the property limit are likely being used as foraging habitat. Proposed tree removals are located outside of the SWDM3-2 community, which is outside of the area where it is believed the individuals observed have established their territory. Nonetheless, Eastern Wood-pewee are known to used dead branches as hunting perches (COSEWIC, 2012); therefore, they may utilize the trees and snags identified within the residential areas for hunting and foraging purposes. The size of the permanent losses and temporary alterations to the woodland habitat (2.42 ha) is small compared to the overall size of the woodland on the property (10 ha) and that which extends to the woodlands east and west beyond the property limits (866 ha). These alternative woodland communities present alternative foraging and nesting opportunity for Eastern Wood-pewee and thus impact to the species is anticipated to be negligible.

According to the COSEWIC assessment and Status Report on Eastern Wood-pewee (*Contopus virens*), Eastern Wood-pewees are found to occur less frequently in woodlots that are surrounded by homes. Despite this fact, Eastern Wood-pewees were still identified on the property, which is currently boarded by low density residential dwellings and cottages. Thus, the addition of an additional residence is not likely to affect presence of Eastern Wood-pewee. As such, it is expected that Eastern Wood-pee would continue to access and utilize the woodland habitats on the property following the proposed tree removals and residential development.

Tree removals that occur during the nesting period for birds or roosting period for bats risk harming individuals during their nesting/roosting period. Therefore, timing windows have been recommended in Section 7.3 as part of a list of mitigation measure to reduce the risk of harming all breeding bird species utilizing the property.

6.2.4 Species at Risk Habitat and Incidental Harm

SAR Bats

The woodlands present contain standing dead and dying mature trees with suitable bat roost features, identified as composite trees within this report. The bat maternity roosting habitat assessment identified the entire property as having sufficient density of composite trees to be identified as candidate maternity roosting habitat, with the highest density of snag trees determined to be within the SWDM3-2 Silver Maple Mineral Deciduous Swamp community (Appendix G). Approximately 8.31 ha of this candidate maternity roosting habitat is to be retained as part of the proposed alterations (Figure 4). Further, two of the plots associated with a higher relative number of composite trees will be retained throughout future site alteration and development (Appendix G). Additional assessment through acoustic monitoring indicated the potential of a bat maternity colony within the area, associated with the SM7500 monitor. Given the low density of composite trees identified within this area, it can be expected that (1) a maternity roost is located within the adjacent residential area, functioning as an anthropogenic roost, and/or (2) a forest maternity colony is located within the SWDM3-2 community. The proposed development will not be altering the features identified as potential maternity colony habitat and therefore is not expected to result in a negative ecological impact for maternity roosting habitat. Acoustic monitoring conducted in proximity to the southern development area (SM7906) indicated that bats were generally active throughout the night, and not utilizing the area as a maternity roost. Thus, tree removal in this location is not expected to result in a negative ecological impact for maternity roosting habitat for Endangered Bats.

In addition to maternity roosting habitat, individual trees with roosting features (*i.e.,* cavities, peeling bark, leaf clusters) within the woodlands also have the potential to function as day roost trees for non-reproductive individuals. Given the results of the acoustic monitoring survey, Endangered bats are

expected to be utilizing the property for day roosting. Approximately 1.53 ha of woodland habitat is proposed for removal, of 688 ha present within the larger woodland feature of which the property contributes to. Further, day roosting habitat is not considered to be a limiting factor for the individuals, specifically within the Town of the Blue Mountains, where numerous suitable roosting habitats (*i.e*., woodlands) exist, including the 688 ha woodland of which the property contributes. Removal of 1% of available day roosting habitat would not be considered as an alteration of habitat under Section 10 of the ESA.

A residential stormwater pond present to the east of the property as well as the open portions of the wetland communities within the property (*i.e.,* MAMM1-2) may act as a source of drinking water for SAR bats. Both features will not be altered as part of the proposed development plan and therefore no ecological impacts to bat drinking/foraging habitat is expected to occur as part of the proposed development.

Following mitigation measures provided in Section 7 (such as timing windows), it is unlikely that a bat would sustain incidental harm during construction activities, as it relates to removal of trees that could provide day or maternity roosting for the species. Thus, the proposal will not result in contravention of Section 9 of the ESA, which protects individual species.

Notwithstanding the conclusions presented within this report, Birks NHC staff are currently in discussion with the MECP to confirm our assessment of SAR habitat functions associated with the property. Additional information will be provided through an EIS addendum as it becomes available.

Black Ash

Black Ash trees were identified in the MAMM1/SWDM2-2 community located on the northern limit of the property, as well as the SWDM2-2 community, part of which is proposed for removal. It is expected that Black Ash protection measures will be enforced beginning on January 26, 2024. The Ontario Recovery Strategy for Black Ash (Catling, P.K., *et. al*., 2022) has recommended developing habitat regulations for an entire wetland ELC ecosite that contain one or more Black Ash individuals, and the area within a radial distance of at least 28 m from an individual Black Ash tree, including less suitable dry or upland area habitats. It should be noted that in general, ash within the Town of Blue Mountains have recently experienced significant decline as a result of the Emerald Ash Borer, and it is expected that ash specimens on the property will experience similar decline. Regardless, it is recommended that steps are taken to prepare for the return of regulated protections, as recommended within Section 7.1.2 of this report.

Butternut

One Butternut tree was documented on the property, outside of the area of impact associated with the proposed development (Figure 2). Protection measures for Butternut include a 50 m alteration setback from an identified individual. Alterations within this setback area can cause disruptions to seed dispersal by removing areas on which fallen nuts may propagate. Cut operations also introduce a risk to causing root damage by physically breaking underground stems.

Much of the area inside of the 50 m setback of the identified Butternut will remain unaffected by the proposed development (Figure 3). However, approximately 0.07 ha or 700 m^2 will be temporarily altered as part of the proposed regrading of the northern development area. This area is small compared to the overall size of the setback and approximately 25 m removed from the specimen. This is well beyond the anticipated root protection zone of the tree and as such there is no risk to root damage for the individual. This area is to be restored to its original naturalized state once cut operations are completed which will permit seed dispersal and germination processes to continue.

Considering the size of the affected area within the 50 m setback and the eventual restoration activities that will occur within the setback, no impacts are anticipated to the Butternut or it's habitat as a result of the proposed development plan. Thus, the proposal will not result in contravention of Section 9 or 10 of the ESA, as it relates to the protection of Butternut.

Notwithstanding, indirect impacts may occur as a result of accidental encroachment into the 50 m setback. To mitigate this risk, measures have been recommended in Section 7.1.3.

6.3 Indirect Impacts

Indirect impacts often occur as a result of a change in property usage, examples of which include an increase in local traffic or alterations to the existing natural or anthropogenic features. The results of indirect impacts do not always manifest in the core area where construction activity is to occur; they can occur in the lands adjacent to the disturbance and have the potential to negatively affect a wider area than the core development footprint. Indirect impacts may also occur following the completion of the proposed activity, resulting from a long term change in use of the property.

Indirect impacts of the proposed development include:

- Disturbance to wildlife and wildlife habitat;
- Increased risk of erosion and sedimentation of adjacent habitats, and;
- Increased potential for invasion of non-native species.

6.3.1 Anthropogenic Disturbance

Disturbance to local wildlife populations and vegetation communities due to indirect impacts on the lands adjacent to the proposed development have potential to occur when development is proposed in the vicinity of natural areas. Noise, light, vibration, and human presence are indirect impacts that can negatively impact natural heritage features and functions. These impacts are more prominent when new development is proposed in un-developed areas.

Best management practices should be implemented to protect adjacent habitat features and prevent accidental encroachment. Provided the mitigation measures discussed in Section 7 are implemented, there is no expectation that the limited increase in disturbance associated with the creation of two residential areas, within an existing neighbourhood, would result in significant indirect impacts to wildlife or their habitats, beyond that which is already present.

6.3.2 Erosion and Sedimentation into Natural Heritage Features

Erosion occurs on unstable slopes and often takes place during the vegetation removal and grading phases of construction. Sedimentation can occur when soils are exposed as a result of vegetation removal and an event (*i.e.*, significant rain events, wind, forced movement of material during construction) causes the soil particles to mobilize and be transported into an adjacent natural feature.

It is our understanding that cut and fill operations are expected to occur to adjust the regional floodplain and maximize developable areas within proximity to the existing residential areas. Cut and fill activities present the highest risk of sedimentation in the wetland. Deposition of fine sediment particles into wetland habitats can smother streambeds and suffocate aquatic organisms, resulting in a decline in aquatic biodiversity and disruption to aquatic ecosystem. Further, sediment deposition in forested habitat can impair water filtration, alter habitat quality for various flora and fauna and introduce invasive or exotic species to natural areas. As such, it is important to manage sedimentation in wetlands and woodlands through the use of erosion and sediment control measures and appropriate restoration efforts.

To mitigate the risk of erosion and sedimentation of adjacent habitats, recommendations have been provided in Sections 7.5. Following implementation of the mitigation measures listed herein, alteration of habitats due to sediment deposition is unlikely.

6.3.3 Increased Potential for Invasion of Non-native Species

Site disturbance may increase the likelihood that non-native and/or invasive vegetation species will become established within the retained vegetation communities, increasing the number of non-native and/or invasive vegetation or assisting the spread of established invasive species to the remaining

vegetation communities. Mitigation measures are provided in Section 7.4 below to mitigate the spread of invasive species.

6.4 Accidental Encroachment

The risk of direct and indirect impacts to the natural environment increases during active construction if proper delineation and protection measures are not installed around the development footprint. This may result in temporary or permanent damage to natural heritage features and their functions. Wildlife present in immediate area is also at risk of harm during active construction periods and may choose to hide in proximity to the development limit rather than flee to a safer area. To mitigate the risks associated with accidental encroachment, recommendations have been provided in Section 7.5.

7 RECOMMENDATIONS AND MITIGATION MEASURES

Mitigation refers to the avoidance or reduction of impacts associated with the proposed works through best practices. Where applied correctly, mitigation measures reduce the risk of impacts to natural heritage features and ensure that their functions will continue uninhibited by the proposed activity.

The following mitigation measures are recommended to minimize the negative effects of the above listed direct and indirect impacts, and to ensure that the development can proceed in conformity with the relevant planning documents and in compliance with environmental law.

7.1 Species at Risk

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.

This report was produced based on the most up-to-date policy information however, it is not intended to act as a long-term assessment of potential SAR. 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 the ESA. Should a considerable length of time and/or sudden change in policy occur prior to construction, it is recommended that a review of the assessment provided within this report be undertaken by a qualified ecologist to ensure compliance with the ESA at that time. All current Threatened or Endangered species listed under O. Reg. 230/08 made under the ESA with a currency date of October 4, 2023, have been considered within this report.

7.1.1 SAR Bats

The identification of potential maternity roosting habitat and presence of SAR bats on the property warrants consultation with MECP for this application. Additional information regarding the outcome of consultation will be provided through an EIS addendum, as it becomes available.

7.1.2 Black Ash

Black Ash trees were identified on the property within the FODM5-10 and the MAMM1/SWDM2-2 communities. However, not all individuals or their specific location were identified. It is recommended that all Black Ash trees within an area of 28 m of the altered lands be documented to identify the magnitude of impact on this species.

7.1.3 Butternut

The limit of site alteration should be clearly identified prior to any site alteration on the property. This will ensure protection of the Butternut individual during construction activities.

7.2 Restoration

It is recommended that a restoration plan be created to address the temporary loss of woodland and wetland habitat where tree clearing and grading operations are to occur, which will aid in minimizing impacts to the retained natural heritage features on the property. The plan should be prepared under separate cover and at a minimum should address the following points:

- Ensure areas outside of the proposed development areas, withing the “Hazard” zoned lands are restored to the appropriate natural state.
- Native seed mix and herbaceous and woody plantings are recommended where restoration activities are to occur.
- Include planting of Common Bearberry in temporarily altered woodland habitat. Rescue and relocation of specimens may be a preferred in this scenario; and
- Restore proposed drainage features to meadow marsh wetland habitat, which will ensure that wetland habitats are retained on the property, while maintaining connectivity of external site drainage to the central wetland.

7.3 Timing Restrictions

SAR bat species individuals and their habitats are protected under the ESA*;* it is illegal to harm, harass or kill individuals that are listed as Endangered or Threatened. Additionally, 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).

It is recommended that alterations to the existing landscape, such as tree clearing, vegetation removal and earthworks activities, occur outside of the active breeding/roosting/nesting season for all SAR that may utilize habitats in the area. Tree cutting should be timed to occur during the period between November 1 to March 31 and no removals outside of areas of alteration should occur. This will ensure that no nesting birds or bats actively roosting in trees will be killed or harmed as a result of clearing activities.

If the work schedule requires that site alteration be completed during the active season, it is recommended that a qualified individual, such as an ecologist with knowledge of the species present in the area, conduct a screening of the area of impact to ensure that the risk of harming SAR is mitigated to the extent possible. Note that given the nature of the retained habitat, clearance for work outside of the timing window identified above is likely not feasible.

7.4 Invasive Species

With all construction activities, there is an increase in exposure to invasive plants. Vehicles and equipment should be cleaned prior to beginning construction on a new site to avoid transportation of invasive plants from another project site. Should accidental encroachment or sediment breaching occur during construction, a seed mixture should be applied to the exposed soils to discourage establishment of invasive plant species. The mixture should contain seeds of a native variety that are suitable for the adjacent community and shall be approved by the local land-use authority.

7.5 General Operations

Impacts to the woodland and wetland habitats represent the most prominent direct impacts associated with the proposed site alterations. Given the key natural heritage features associated with the woodland and wetland habitat on the property, it is important to ensure proper mitigation and protection measures are in place and are maintained throughout the construction timeline.

Additionally, the risk of accidental encroachment (*i.e.,* incidental take) increases during the active site alteration phases of development. The following general mitigation measures are recommended to avoid accidental encroachment and direct impacts to the identified natural heritage features beyond the activity associated with the proposed site alterations.

- All efforts should be made to minimize the area of disturbance; prior to any construction activities, the limit of tree clearing should be established to prevent accidental encroachment into the adjacent naturalized features and protect a vegetated buffer to wetland habitats, as the site plan permits.

- Perimeter erosion control fencing should be installed around the development footprint to mitigate the migration of spills and sediment outside of the construction area and prevent encroachment into retained natural areas. All segments of the erosion control fencing should be keyed into the ground to prevent undermining and the mitigate the risk of breaching.
- Sediment and erosion controls should be maintained throughout construction and until vegetation is established post-construction.
- All disturbed areas should be stabilized post development and naturalized with native herbaceous and woody plants.
- An emergency spill kit should be stored on site throughout construction.
- Control potentially contaminated materials (*i.e.,* fill, soil, gravel, excavated materials) moved by equipment during construction to prevent the spread of invasive plants.
- Inspect and clean equipment and vehicles prior to allowing access to the property to prevent the spread of invasive plant species into the site.
- When possible, equipment refueling should take place off site and away from natural heritage features to prevent accidental contamination of the identified habitats.
- Should an animal be injured or found injured during construction, they should be transported to an appropriate wildlife rehabilitation center.

8 POLICY CONFORMITY

The following provides a brief summary of the overarching policy framework associated with the property and provides discussion regarding the application as it relates to conforming to the natural heritage framework as outlined within the various policy documents.

8.1 Niagara Escarpment Plan

The property is located within the Niagara Escarpment Plan Area, and the Escarpment Recreation Area. Policy conformity in consideration of this is presented below:

Section 2.7 .2 of the NEP states that:

Development is not permitted in key natural heritage features with the exception of the following, which may be permitted subject to compliance with all other relevant policies of this Plan:

a) development of a single dwelling and accessory facilities outside a wetland on an existing lot of record, provided that the disturbance is minimal and where possible temporary;
b) forest, fisheries and wildlife management to maintain or enhance the feature;
c) conservation and flood or erosion control projects, after all alternatives have been considered;

d) the Bruce Trail, and other trails, boardwalks and docks on parks and open space lands that are part of the Parks and Open Space System; and,

e) infrastructure, where the project has been deemed necessary to the public interest and there is no other alternative.

The application considers the redesignation of two areas of the property for the creation of two residential development areas, one in the north and one in the south, both of which are located in proximity to existing residential development. As stated in 2.7.2 a) "development of a single dwelling and accessory facilities…outside a wetland on an existing lot of record [is permitted], provided that the disturbance is minimal and where possible temporary." The northern developable area meets this criterion. The permanently disturbed lands are located outside of the wetland feature, comprise 10% of the entirety of the property and are oriented such that the natural heritage features and functions associated with the property shall continue and persist post development, as discussed in Section 0.

In order to create a suitable development area in the south, outside of identified slope and flood hazard areas, the southern drainages entering the property must be re-directed, which we understand could be permitted as per 2.7.2 c). Once redirected, the fluvial inputs that contribute to the wetland identified within the southern development area will no longer be present, and thus wetland habitat conditions will likely cease to exist in this location. Although not ideal (given the alteration of wetland habitat) the permanently disturbed lands only comprise 5% of the entirety of the property, compared to 10% in the north. The southern residential lands have also been oriented such that the natural heritage features and functions (and thus the function of KNHF and KHF) associated with the property shall continue post development, as discussed in Section 0.

Thus, as currently proposed, the proposal may meet the policies set forth in the NEP relating to development within KNHF and KHF within the Escarpment Recreation Area. Further consultation with the Agency is recommended to discuss the opportunities on the site and the County and Town's perspective regarding an increase of residential development within the County's Recreational Resort Settlement Area.

8.2 County of Grey

Schedule A Land Use Types, Map 2 of the County of Grey Official Plan depicts the property as Recreational Resort Settlement Area. Section 3.8 of the County of Grey Official Plan states that residential development within this designation is permitted.

The County of Grey Official Plan generally encourages development be setback from wetlands, streams, and rivers by at least 30 m. In some cases, this 30 m setback can be reduced based on site specific circumstances or through the completion of an EIS. The northern development area provides for a minimum 15 m setback to the delineated wetland, with the majority of the setback extending further

than this (Figure 3). Once grading alterations have been completed a maximum 90 m setback to permanent site alteration can be achieved. This setback is also intended to function as the setback to the retained Significant Woodland.

The developable area in the southern portion of the property will allow for the implementation of a 15 m 'no-touch' setback to retained wetland habitat, as well as approximately 5 m of additional lands within the Hazard zone that will be re-naturalized, post site alteration. The application of a 20 m feature setback adjacent to low density residential development is sufficient to mitigate for anthropogenic influence within the retained features.

Sections 7.3.2 and 7.4 of the County Official Plan state that no development or site alterations are permitted within Significant Woodlands or Other Wetlands, or their adjacent lands, unless it has been demonstrated that there will be no negative impacts on these natural features or their ecological functions. Section 6 herein details anticipated impacts to these features in consideration of the context of the property and the local landscape; no impacts to natural heritage features or functions were identified. Further, Section 7 provides mitigations which would minimize incidence of occurrence of negative impacts. Thus, the application is in conformity with the policies of the County of Grey.

8.3 Town of the Blue Mountains

Schedule A-3 of the Town of The Blue Mountains Official Plan depicts Hazard Lands on a majority of the property, while the remaining lands are depicted as Residential Recreational. The Town of Appendix 1 - Constraint Mapping further illustrates Significant Woodlands, Other Wetlands, Stream/River, and Karst on the property (Appendix D).

The Town requires that buildings be located outside of lands identified as Hazard lands; the application provides for this, in consideration of the maintenance of the southern slope, as well as a cut/fill exercise (Tatham, 2023) to regularize the extent of the Regional Floodplain on the property.

Development and site alteration within or adjacent to Significant Woodlands shall not be permitted unless it has been demonstrated that there will be no negative impacts on the natural feature or its ecological functions; as discussed in Section 6.2.2, the site alterations proposed will not affect the Significant Woodland feature in ways that would disrupt the feature's ecological function. Thus, the proposal aligns with the Town's policies as they relate to the protection of Significant Woodlands.

Section B5.3.2 states development and site alteration shall not be permitted in Other Wetlands except where such activity is associated with the conservation of natural resources. The development, as proposed, does not call for alteration within 'Other Wetland' as mapped by the Town of Blue Mountains in Appendix 1 of their OP; the mapping of the 'Other Wetland' aligns with the limit of the SWDM3-2 community. That said, areas identified as wetland by Birks NHC ecologists are proposed to be

temporarily and/or permanently altered in order to allow for removal of the southern developable area from hazard lands, resulting in a permanent wetland area loss of ~0.26 ha. Should development proceed in both the north and southern development areas, the difference can be compensated for when naturalizing the proposed Regional Floodplain in the north. Thus, the proposal demonstrates best efforts to conform to the policies of the Town, as it relates to the protection of 'Other Wetland' and should be considered, given the orientation of the property within the Resort Recreational Settlement Area of the County of Grey.

9 CONCLUSIONS

This EIS was prepared as part of a rezoning application for the property located on Part of Lot 25 Concession 4, in the Town of the Blue Mountains. Two development areas are proposed on the property with the intent to build out one residential area. Among the impacts identified, the proposed rezoning and subsequent construction will require cut and fill operations to mitigate the risk of flooding during seasonal high flows and regional storm events.

Given the small size of the proposed site alterations compared to the overall size and function of the contiguous natural landscape, direct impacts to the function of the Significant Woodland and the SWHs identified herein are not anticipated. Potential impacts to SAR bat habitat and Black Ash trees were identified and recommendations were made to ensure that the development plan does not contravene policies set forth by the *Endangered Species Act*, 2007. This includes identifying all Black Ash trees within 28 meters of the proposed site alterations and consultation with the MECP, the latter of which has already begun. Additional measures are recommended in this report to mitigate direct and indirect impacts that may occur as a result of the proposed site alterations.

Provided the mitigation measures recommended in this report are followed, site alterations are not expected to negatively impact the function of the identified natural heritage features discussed herein. Thus, it would conform with the County of Grey Official Plan, Town of Blue Mountains Official Plan, the *Niagara Escarpment Planning and Development Act*, 1990, and the Provincial Policy Statement.

10 REFERENCES

COSEWIC. 2013. COSEWIC Assessment and Update Status Report on the Little Brown Myotis, Northern Myotis, Tri-colored Bat. Committee on the Status of Endangered Wildlife in Canada. Ottawa.

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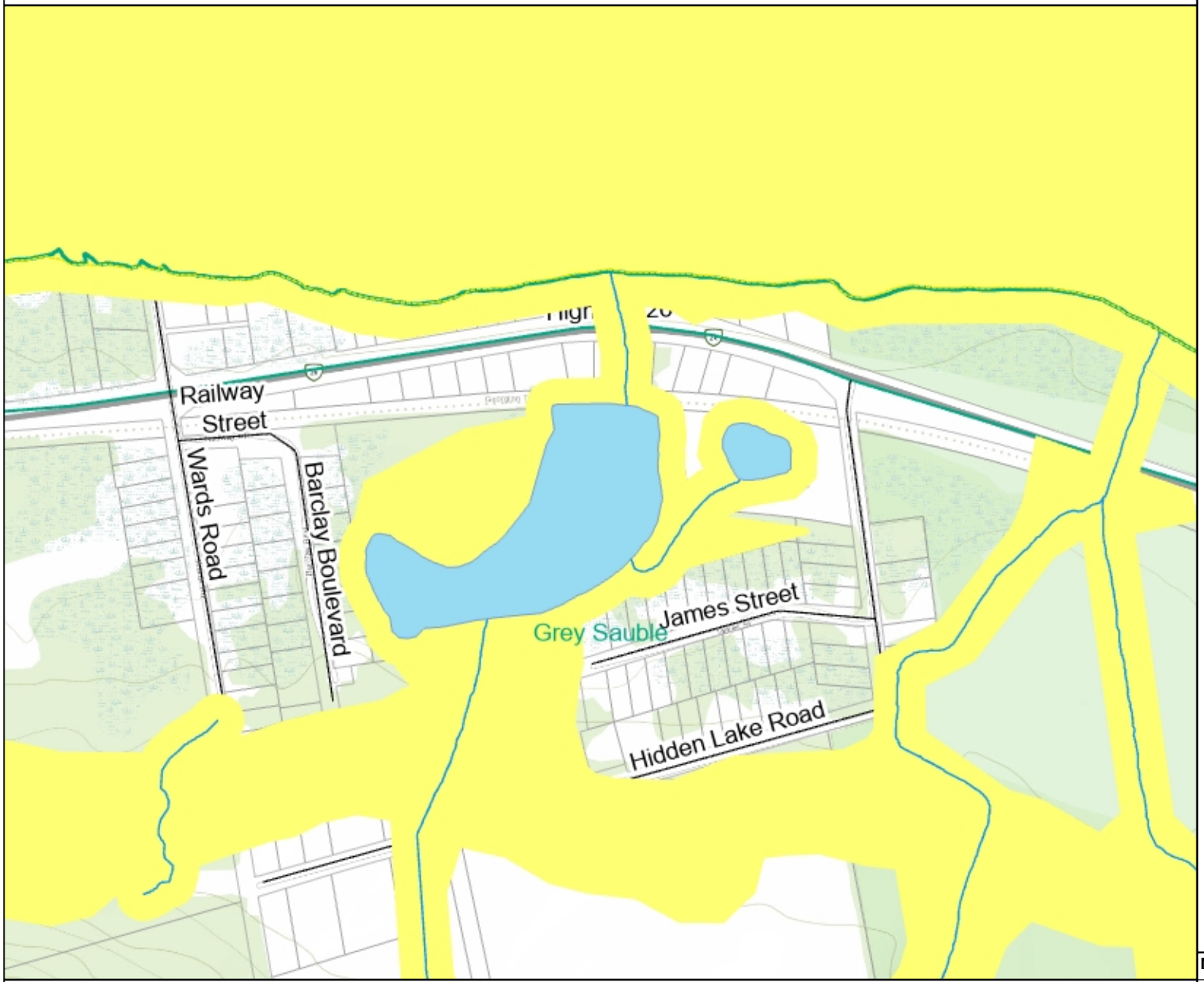
Tatham Engineering Ltd. (Tatham). 2023. DRAFT Flood Hazard Study. Insoho Developments. Prepared Sept. 28th, 2023

APPENDIX A: GRCA REGULATED AREA MAPPING

GRCA Regulated Area - Blue Birch



Legend

- CA Boundaries
- Wet Areas - GSCA
- Wet Areas - GRCA
- Water Features
- Watercourses
- Floodplains - NVCA
- Floodplains - GRCA
- Approximate Regulated and Screen SVCA
  - Approximate Regulated Area
  - Approximate Screening Area
- Regulations - GSCA
- Regulations - NVCA
- Large Scale Roads
  - Provincial Highway
  - County Road
  - Township Road
  - Seasonal Road
- Parcels - Current
- Grey County Boundary

444 0 222 444 Meters

WGS_1984_Web_Mercator_Auxiliary_Sphere

This map is a user generated static output from an Internet mapping site and is for reference only. Data layers that appear on this map may or may not be accurate, current, or otherwise reliable.

Printed October 6, 2023

THIS MAP IS NOT TO BE USED FOR NAVIGATION

Notes

GRCA Regulated Area

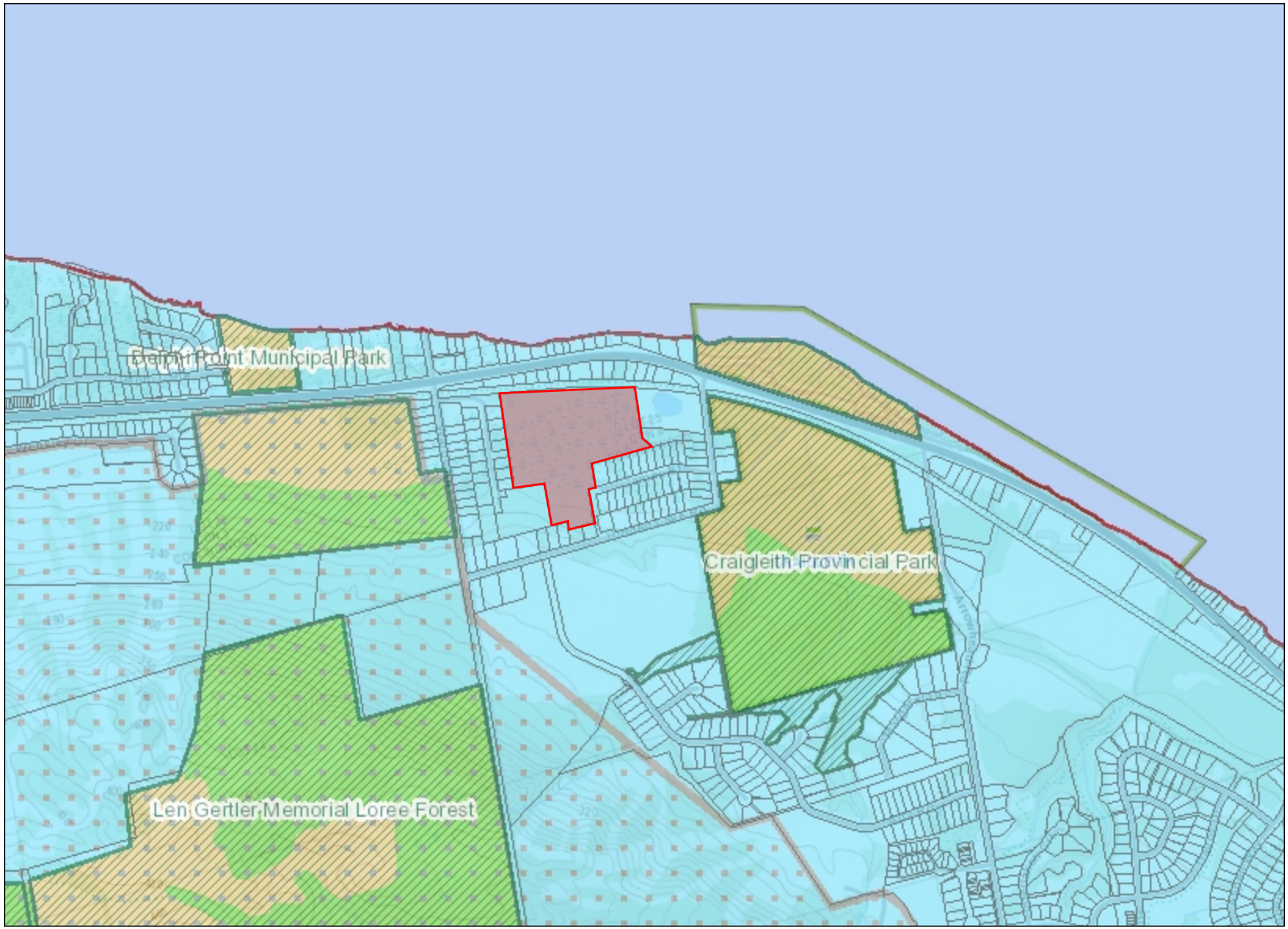
APPENDIX B: NIAGARA ESCAPRMENT PLAN

Niagara Escarpment Commision

An agency of the Government of Ontario

Part of Lot 25 Concession 4, Town of the Blue Mountains

Notes:
Niagara Escarpment Plan Mapping



Legend

- Assessment Parcel
- Niagara Escarpment Minor Urban Centre
- Niagara Escarpment Parks and Open Space System
- Niagara Escarpment Plan Special Policy Area
- Niagara Escarpment Plan Area
- Area of Development Control
- Niagara Escarpment Plan Designation
  - Escarpment Natural Area
  - Escarpment Protection Area
  - Escarpment Rural Area
  - Escarpment Recreation Area
  - Mineral Resource Extraction Area
  - Urban Area
- Property

0 0.9 km

Projection: Web Mercator

Map created: 10/3/2023

APPENDIX C: COUNTY OF GREY OFFICIAL PLAN SCHEDULES

ANNAN

MEAFORD

WOODFORD

BOGNOR

SEE SCHEDULE A - MAP 1

SEE SCHEDULE A - MAP 3

GEORGIAN BAY

Location of Property

N

Refer to Secondary Plan in the Town of the Blue Mountains Official Plan

Simcoe County

Dufferin County

Wellington County

Grey County

THE COUNTY OF GREY OFFICIAL PLAN

SCHEDULE A
Land Use Types

MAP 2

LEGEND

- Provincial Highway Connecting Link
- Provincial Highway
- County Road
- Local Road
- Seasonal Road
- Agricultural
- Special Agricultural
- Rural
- Primary Settlement Area *
- Secondary Settlement Area *
- Inland Lakes & Shoreline Settlement Area
- Recreational Resort Settlement Area
- Sunset Strip Settlement Area
- Industrial Business Park Settlement Area
- Space Extensive Industrial and Commercial
- Niagara Escarpment Plan Boundary **
- Niagara Escarpment Development Control Area
- Escarpment Natural Area
- Escarpment Recreation Area
- Hazard Lands
- Provincially Significant Wetlands and Significant Costal Lands

* refer to Secondary Schedules for further detail.

** certain settlement areas within the Niagara Escarpment Plan Boundary may be subject to Development Control.

SCALE 1:95,000

0 1,125 2,250 4,500 6,750 9,000 Meters

AUTHOR: Grey County Planning
FILE NAME: GR_OP_SchedA_Map2eastX36.mxd
CONSOLIDATION: May 1, 2023
INTERACTIVE MAP: geo.grey.ca
DOWNLOAD PDF: grey.ca/planning-development

This map is for illustrative purposes only. Do not rely on this map as being a precise indicator of routes, location of features or surveying purposes. This map may contain cartographical errors or omissions.

Location of Property

N

GEORGIAN BAY

SEE APPENDIX B - MAP 1

SEE APPENDIX B - MAP 3

Simcoe County

Refer to Secondary Plan in the Town of the Blue Mountains Official Plan

Dufferin County

Wellington County

Grey County

THE COUNTY OF GREY
OFFICIAL PLAN

APPENDIX B
Constraint Mapping

MAP 2

LEGEND

- Provincial Highway
- County Road
- Local Road
- Seasonal Road
- Stream / River
- Lakes
- Other Wetlands
- Significant Earth & Life ANSI
- Significant Earth ANSI
- Significant Life ANSI
- Significant Valleylands
- Significant Woodlands

SCALE 1:95,000

0 1,125 2,250 4,500 6,750 9,000 Meters

AUTHOR: Grey County Planning
FILE NAME: GR_OP_ApdxB_Map2eastX36.mxd
CONSOLIDATION: May 1, 2023
INTERACTIVE MAP: geo.grey.ca
DOWNLOAD PDF: grey.ca/planning-development

This map is for illustrative purposes only. Do not rely on this map as being a precise indicator of routes, location of features or surveying purposes. This map may contain cartographical errors or omissions.

APPENDIX D: TOWN OF BLUE MOUNTAINS OFFICIAL PLAN SCHEDULE A-3

The Blue Mountains Constraint Mapping Appendix 1

Designations

- 100 Year Flood Elevation
- Stream / River
- Aggregate Resource Area
- ANSI
- Deer Wintering Area
- Escarpment Plan Boundary
- Karst
- Mineral Resource Extraction
- Permanent Water Area
- Provincially Significant Wetlands
- Other Wetlands
- Sewage Treatment Plant Buffer
- Significant Woodlands

0 0.5 1 2 3 4 5 Kilometers

N W E S

Subject site

Note: This Schedule forms part of the Official Plan and must be read and interpreted in conjunction with the text. The information depicted on this Schedule has been compiled from various sources.While every effort has been made to accurately depict the information, data/mapping errors may exist.

Download PDF: www.thebluemountains.ca

June 2016

TOWN OF THE BLUE MOUNTAINS

Deer Wintering Area

Heathcote

Subject to Special Study Area Policies in Section B3.7.6.16

Ravenna

Refer to Secondary Plan mapping

Lot 41 Lot 40 Lot 39 Lot 38 Lot 37 Lot 36 Lot 35 Lot 34 Lot 33 Lot 32 Lot 31 Lot 29 Lot 28 Lot 27 Lot 26 Lot 25 Lot 24 Lot 23 Lot 22 Lot 21 Lot 20 Lot 19 Lot 18 Lot 17 Lot 16 Lot 15 Lot 14 Lot 13 Lot 12 Lot 11 Lot 10 Lot 9 Lot 8 Lot 7 Lot 6 Lot 5 Lot 4 Lot 2 Lot 1

XII XI X IX VIII VII VI V IV III II I

The Blue Mountains
Official Plan Schedule 'A-3'
Camperdown

Designations

- Niagara Escarpment Plan Boundary
- Special Study Area Subject to B3.13.5
- Agricultural
- Escarpment
- Future Secondary Plan Area
- Hazard
- Institutional Area
- Major Open Space
- Recreational Commercial Area
- Recreational Ski
- Residential Recreational Area
- Rural
- Special Agricultural

0 250 500 750 1,000 Metres

N W E S

Note: This Schedule forms part of the Official Plan and must be read and interpreted in conjunction with the text. The information depicted on this Schedule has been compiled from various sources. While every effort has been made to accurately depict the information, data/mapping errors may exist.

Download PDF: www.thebluemountains.ca

June 2016

Subject to Section B3.8.6.1

Property

Eastwind Lane
Woodland Park Rd
Lakewood Dr
Woodland Park Rd
Grey Road 40
Timber Leif Ridge
Aberdeen Crt
Indian Circle
Hoover Lane
Hoover Lane
Teskey Dr
7th Line
Camperdown Rd
Stone Zack Lane
George McRae Road
Dorothy Drive
Old Lakeshore Rd
Peaks Rd
Wensley Dr
Highway 26
Ellis Drive
Delphi Lane
Wards Rd
Barclay Blvd
James St
Hidden Lake Rd

APPENDIX E: TERMS OF REFERENCE

Sarah Robbins

From: Justine Lunt <j.lunt@greysauble.on.ca>
Sent: July 13, 2022 11:16 AM
To: Melissa Fuller
Cc: MacLean Plewes
Subject: Re: EIS Terms of Reference Request - Concession 4 Part of Lot 25 in the Town of the Blue Mountains

Follow Up Flag: Follow up
Flag Status: Completed

Good morning,

Please accept our apologies for the delay in our response to this inquiry.

Having reviewed the purposed Terms of Reference, at this time, GSCA is generally satisfied with the scope and approach proposed. We note that in your introductory paragraph, the wrong regulation is referenced, as well as the wrong CA. Ontario Regulation 151/06 would be the applicable legislation, and GSCA would be the correct conservation authority.

That being said, this site is relatively complex, and has several interconnected factors that have the potential to place constraints on the extent of development on the subject lands. GSCA has not had an opportunity to complete a current comprehensive pre-consultation for the subject lands, so through further review it may be possible that there are other aspects that may require review, further study of the lands, or updates/amendments to the EIS.

GSCA reviews proposals not just from a natural heritage perspective, but also a natural hazard, water and O.Reg. 151/06 perspective, all studies completed for the site will have to have regard for one another.

Sincerely,

Justine Lunt
Environmental Planner

519.376.3076
237897 Inglis Falls Road
Owen Sound, ON N4K 5N6
www.greysauble.on.ca

Grey Sauble CONSERVATION

Please note that due to the ongoing COVID-19 situation, GSCA staff will be continuing to work in a combination of in-office and remote situations and may not have access to office phones. Please utilize email as the most reliable way to reach our staff at this time. A full staff directory is available on our website. Rest assured that GSCA is committed to continuing to provide a high level of service and staff will be doing their best to ensure this. The GSCA Administrative Office is open to the public in a limited capacity. Most of GSCA's conservation areas continue to remain open. As this situation continues to evolve, please monitor our website at www.greysauble.on.ca for up-to-date information.

For after-hours non-911 emergencies please call 226-256-8702. Please do not use this number for planning related inquiries. For information regarding properties, visit our website at www.greysauble.on.ca.

From: Melissa Fuller <mfuller@birksnhc.ca>
Sent: Monday, March 14, 2022 2:09 PM
To: Justine Lunt <j.lunt@greysauble.on.ca>; Jenna.Skinner@ontario.ca <Jenna.Skinner@ontario.ca>
Cc: ron@insohodevelopments.com <ron@insohodevelopments.com>; Stephanie Brady <sbrady@birksnhc.ca>
Subject: EIS Terms of Reference Request - Concession 4 Part of Lot 25 in the Town of the Blue Mountains

Good Afternoon,

Birks NHC has been retained to undertake an EIS for the property located at Concession 4 Part of Lot 25 in the Town of the Blue Mountains. At this time we have completed one site visit and have preliminarily identified constraining natural heritage features associated with the property, as outlined in the attached figure. The natural heritage features identified to date include a unevaluated wetland, Significant Woodland, candidate Significant Wildlife Habitat and potential habitat for Species at Risk. The property is within the Niagara Escarpment Plan (NEP) Area and falls under 'Escarpment Recreation Area' designation of the NEP. A portion of the property is regulated by the NVCA in accordance within Ontario Regulation 172/06, associated with the Black Ash Creek watercourse and setbacks.

The client wishes to proceed with a full EIS study of the property, which will facilitate the development of a suitable development plan for the property that facilitates the best overall outcome. We suggest the following scope of work for the completion of the EIS. Please review and provide comment at your earliest convenience.

SITE ASSESSMENT

Birks NHC staff will attend the property during the appropriate times in 2022 to document and define potential Natural Heritage Features and review potential habitat for Species at Risk. The site assessment portion of the EIS will involve the following tasks:

- Review available background information for the property and surrounding lands (within 120 metres) as well as available mapping from the Natural Heritage Information Centre (NHIC);
- Review policies related to the natural heritage components of the proposed development, including municipal and provincial policies;
- Complete a Species at Risk Assessment for the Study Area;
- 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);
b. Wetland delineation with GSCA staff in June 2022
c. Two vascular plant surveys in the spring 2022 and fall 2022 to identify the potential for Species at Risk or rare plants;
d. Two dawn breeding bird surveys to compile a list of birds;
e. Frog calling surveys to address potential for amphibian breeding habitat;
f. Assess the property for potential bat roosting habitat:
    - Conduct a cavity tree density survey within suitable forest communities in Winter of 2022. This assessment will follow the MECP interim protocol to determine whether forested portions represent potential habitat for maternity roost colonies and whether additional field surveys (*i.e.,* acoustic surveys) are required.

REPORT PREPARATION

The following scope of work is expected to be appropriate in order to complete the EIS:

- Review the existing development plan upon which the EIS will be based.
- 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 property or adjacent lands within 120 meters, as defined by the Natural Heritage Reference Manual (2010);
    c. Mapping outlining:
        i. The approximate boundary of the property 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
    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;
    f. Conclusion, recommendations and mitigations that align with the overarching policy framework of the property or study area.

Should you have any questions or concerns with the above, please do not hesitate to contact me, I'd be happy to discuss.

Have a great day,

Melissa Fuller, H.B.Sc/Ecologist &
Consulting Arborist
Birks Natural Heritage Consultants, Inc.
p. (705)994-4824
w. www.birksnhc.ca
a. 23 Herrell Avenue, Barrie L4N 6T5

Melissa Fuller

From: Michael Cook <Michael.Cook@grey.ca>
Sent: October 5, 2023 4:23 PM
To: Melissa Fuller
Cc: Kristine Loft; Ron Herczeg
Subject: RE: EIS Terms of Reference Request - Concession 4 Part of Lot 25 in the Town of the Blue Mountains

Hi Melissa,

Thanks for this. I agree with GSCAs comments.

Please note, almost the entirety of the property is considered sig. woodlands and a large portion of wetlands. As such, a development envelope may be limited.

If you have any questions along the way, feel free to reach out.

Kind regards,

Michael Cook
Planning Ecologist
Phone: +1 519-378-4828

From: Melissa Fuller <mfuller@birksnhc.ca>
Sent: Thursday, October 5, 2023 3:17 PM
To: Michael Cook <Michael.Cook@grey.ca>
Cc: Kristine Loft <kristine@loftplanning.com>; Ron Herczeg <ron@insohodevelopments.com>
Subject: FW: EIS Terms of Reference Request - Concession 4 Part of Lot 25 in the Town of the Blue Mountains

[EXTERNAL EMAIL]

Afternoon Michael,

I am currently addressing pre-consultation comments for a file associated with the property located at Concession 4, Part of Lot 25 in the TBM (Blue Birch (File No.: P3275). One of the comments is that a TOR for the EIS should be forwarded to the County. Please see correspondence below which indicates that the TOR was accepted by the GRCA in July 2022.

If you have any questions regarding the file, please do not hesitate to reach out,

Melissa Fuller, H.B.Sc/Ecologist & Consulting Arborist
Birks Natural Heritage Consultants, Inc.
p. (705)994-4824
w. www.birksnhc.ca
a. 23 Herrell Avenue, Barrie L4N 6T5

From: Justine Lunt <j.lunt@greysauble.on.ca>
Sent: Wednesday, July 13, 2022 11:16 AM
To: Melissa Fuller <mfuller@birksnhc.ca>
Cc: MacLean Plewes <m.plewes@greysauble.on.ca>
Subject: Re: EIS Terms of Reference Request - Concession 4 Part of Lot 25 in the Town of the Blue Mountains

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That being said, this site is relatively complex, and has several interconnected factors that have the potential to place constraints on the extent of development on the subject lands. GSCA has not had an opportunity to complete a current comprehensive pre-consultation for the subject lands, so through further review it may be possible that there are other aspects that may require review, further study of the lands, or updates/amendments to the EIS.

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Sincerely,

Justine Lunt

Environmental Planner
519.376.3076

237897 Inglis Falls Road

Owen Sound, ON N4K 5N6

www.greysauble.on.ca

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staff directory is available on our website. Rest assured that GSCA is committed to continuing to provide a high level of service and staff will be doing their best to ensure this. The GSCA Administrative Office is open to the public in a limited capacity. Most of GSCA's conservation areas continue to remain open. As this situation continues to evolve, please monitor our website at www.greysauble.on.ca for up-to-date information.

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From: Melissa Fuller <mfuller@birksnhc.ca>
Sent: Monday, March 14, 2022 2:09 PM
To: Justine Lunt <j.lunt@greysauble.on.ca>; Jenna.Skinner@ontario.ca <Jenna.Skinner@ontario.ca>
Cc: ron@insohodevelopments.com <ron@insohodevelopments.com>; Stephanie Brady <sbrady@birksnhc.ca>
Subject: EIS Terms of Reference Request - Concession 4 Part of Lot 25 in the Town of the Blue Mountains

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The client wishes to proceed with a full EIS study of the property, which will facilitate the development of a suitable development plan for the property that facilitates the best overall outcome. We suggest the following scope of work for the completion of the EIS. Please review and provide comment at your earliest convenience.

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- 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);
    b. Wetland delineation with GSCA staff in June 2022
    c. Two vascular plant surveys in the spring 2022 and fall 2022 to identify the potential for Species at Risk or rare plants;
    d. Two dawn breeding bird surveys to compile a list of birds;
    e. Frog calling surveys to address potential for amphibian breeding habitat;
    f. Assess the property for potential bat roosting habitat:
        - Conduct a cavity tree density survey within suitable forest communities in Winter of 2022. This assessment will follow the MECP interim protocol to determine whether forested portions represent potential habitat for maternity roost colonies and whether additional field surveys (*i.e.,* acoustic surveys) are required.

REPORT PREPARATION

The following scope of work is expected to be appropriate in order to complete the EIS:

- Review the existing development plan upon which the EIS will be based.
- 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 property or adjacent lands within 120 meters, as defined by the Natural Heritage Reference Manual (2010);
    c. Mapping outlining:
        i. The approximate boundary of the property 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
    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;
    f. Conclusion, recommendations and mitigations that align with the overarching policy framework of the property or study area.

Should you have any questions or concerns with the above, please do not hesitate to contact me, I'd be happy to discuss.

Have a great day,

Melissa Fuller, H.B.Sc/Ecologist & Consulting Arborist
Birks Natural Heritage Consultants, Inc.
p. (705)994-4824
w. www.birksnhc.ca
a. 23 Herrell Avenue, Barrie L4N 6T5

APPENDIX F: VEGETATION SURVEY RESULTS TABLE

		Vegetation Community									
Scientific Name	**Common Name**	**FODM8-1**	**SWDM3-2**	**SWDM2-2**	**MAMM1/SWDM2-2**	**SWTM5-1**	**FOMM4-3**	**MAMM1-2**	**[A]S_Rank**	**[B]G_Rank**	**[C]ESA**
Abies balsamea	Balsam Fir	x							S5	G5	–
Acer negundo	Manitoba Maple			x					S5	G5	–
Acer rubrum	Red Maple		x						S5	G5	–
Acer saccharinum	Silver Maple		x					x	S5	G5	–
Acer saccharum	Sugar Maple	x		x					S5	G5	–
Actaea pachypoda	White Baneberry								S5	G5	–
Actaea rubra	Red Baneberry								S5	G5	–
Aegopodium podagraria	Goutweed		x						SNA	GNA	–
Agrimonia gryposepala	Hooked Agrimony	x		x					S5	G5	–
Alliaria petiolata	Garlic Mustard			x					SNA	GNR	–
Ambrosia artemisiifolia	Common Ragweed	x							S5	G5	–
Anemonastrum canadense	Canada Anemone	x							S5	G5	–
Anemone virginiana	Tall Anemone	x							S5	G5	–
Aquilegia canadensis	Red Columbine								S5	G5	–
Aralia nudicaulis	Wild Sarsaparilla	x		x					S5	G5	–
Arctostaphylos uva-ursi	**Common Bearberry**	x							S5	G5	–
Arisaema triphyllum	Jack-in-the-pulpit		x	x					S5	G5	–
Asclepias incarnata	Swamp Milkweed					x			S5	G5	–
Betula papyrifera	Paper Birch	x							S5	G5	–
Bidens connata	Purple-stemmed Beggarticks					x			S4?	G5	–
Bidens frondosa	Devil's Beggarticks		x		x			x	S5	G5	–
Bidens sp.	Beggarticks			x					null	null	–
Boehmeria cylindrica	False Nettle		x		x	x			S5	G5	–
Cardamine sp.	Bittercress								null	null	–
Carex comosa	Bristly Sedge		x		x				S5	G5	–
Carex crinita	Fringed Sedge				x			x	S5	G5	–
Carex cristatella	Crested Sedge					x			S5	G5	–
Carex gracillima	Graceful Sedge								S5	G5	–

		Vegetation Community									
Scientific Name	**Common Name**	**FODM8-1**	**SWDM3-2**	**SWDM2-2**	**MAMM1/SWDM2-2**	**SWTM5-1**	**FOMM4-3**	**MAMM1-2**	**[A]S_Rank**	**[B]G_Rank**	**[C]ESA**
Carex intumescens	Bladder Sedge		x	x	x				S5	G5	–
Carex pseudocyperus	Cyperus-like Sedge					x			S5	G5	–
Carex retrorsa	Retrorse Sedge							x	S5	G5	–
Carex vulpinoidea	Fox Sedge				x	x		x	S5	G5	–
Caulophyllum thalictroides	Blue Cohosh			x					S5	G5	–
Cephalanthus occidentalis	**Eastern Buttonbush**				x	x			S5	G5	–
Circaea alpina	Small Enchanter's Nightshade		x						S5	G5	–
Circaea canadensis	Broad-leaved Enchanter's Nightshade			x					S5	G5	–
Cirsium vulgare	Bull Thistle								SNA	GNR	–
Cornus racemosa	**Gray Dogwood**					x			S5	G5	–
Cornus rugosa	Round-leaved Dogwood	x							S5	G5	–
Cornus sericea	Red-osier Dogwood		x		x	x		x	S5	G5	–
Cypripedium parviflorum	Yellow Lady's-slipper	x							S5	G5	–
Epipactis helleborine	Eastern Helleborine	x					x		SNA	GNR	–
Equisetum arvense	Field Horsetail			x					S5	G5	–
Erigeron hyssopifolius	Daisy Fleabane	x			x	x			S5	G5	–
Fagus grandifolia	American Beech								S4	G5	–
Fragaria virginiana	Wild Strawberry		x	x					S5	G5	–
Fraxinus americana	White Ash			x					S4	G5	–
Fraxinus nigra	Black Ash				x				S3	G5	END
Fraxinus pennsylvanica	Green Ash	x	x	x	x			x	S4	G5	–
Galium aparine	Cleavers			x					S5	G5	–
Galium mollugo	Smooth Bedstraw	x							SNA	GNR	–
Galium palustre	Marsh Bedstraw		x		x	x			S5	G5	–
Geranium robertianum	Herb-Robert	x	x	x					S5	G5	–
Geum aleppicum	Yellow Avens								S5	G5	–
Geum laciniatum	**Rough Avens**			x					S4	G5	–
Glyceria striata	Fowl Mannagrass	x	x			x			S5	G5	–

		Vegetation Community									
Scientific Name	**Common Name**	**FODM8-1**	**SWDM3-2**	**SWDM2-2**	**MAMM1/SWDM2-2**	**SWTM5-1**	**FOMM4-3**	**MAMM1-2**	**[A]S_Rank**	**[B]G_Rank**	**[C]ESA**
Hesperis matronalis	Dame's Rocket		x						SNA	G4G5	–
Hydrophyllum virginianum	Virginia Waterleaf			x					S5	G5	–
Impatiens capensis	Spotted Jewelweed		x	x		x			S5	G5	–
Juglans cinerea	Butternut	x							S2?	G4	END
Juglans nigra	Black Walnut	x							S4?	G5	–
Lactuca biennis	Tall Blue Lettuce								S5	G5	–
Lemna minor	Lesser Duckweed							x	S5?	G5	–
Leucanthemum vulgare	Oxeye Daisy	GNR			x				SNA	GNR	–
Lythrum salicaria	Purple Loosestrife					x		x	SNA	G5	–
Maianthemum canadense	Wild Lily-of-the-valley	x		x					S5	G5	–
Matteuccia struthiopteris	Ostrich Fern			x					S5	G5	–
Myosotis sp.	Forget-me-not	x	x	x				x	null	null	–
Nepeta cataria	Catnip	x							SNA	GNR	–
Onoclea sensibilis	Sensitive Fern	x	x		x			x	S5	G5	–
Ostrya virginiana	Eastern Hop-hornbeam			x					S5	G5	–
Parthenocissus quinquefolia	Virginia Creeper	x	x	x	x	x		x	S4?	G5	–
Parthenocissus vitacea	Thicket Creeper								S5	G5	–
Phalaris arundinacea	Reed Canary Grass		x					x	S5	G5	–
Picea glauca	White Spruce								S5	G5	–
Pinus sylvestris	Scots Pine								SNA	GNR	–
Populus balsamifera	Balsam Poplar	x	x	x					S5	G5	–
Populus tremuloides	Trembling Aspen	x	x	x	x				S5	G5	–
Prunella vulgaris	Self-heal		x	x					S5	G5	–
Prunus virginiana	Choke Cherry			x					S5	G5	–
Pteridium aquilinum	Bracken Fern	x		x					S5	G5	–
Quercus rubra	Northern Red Oak	x							S5	G5	–
Ranunculus acris	Tall Buttercup	x		x	x				SNA	G5	–
Rhamnus cathartica	Common Buckthorn	x		x	x				SNA	GNR	–
Ribes americanum	Wild Black Currant		x						S5	G5	–
Ribes cynosbati	Prickly Gooseberry			x					S5	G5	–

		Vegetation Community									
Scientific Name	**Common Name**	**FODM8-1**	**SWDM3-2**	**SWDM2-2**	**MAMM1/SWDM2-2**	**SWTM5-1**	**FOMM4-3**	**MAMM1-2**	**[A]S_Rank**	**[B]G_Rank**	**[C]ESA**
Rubus idaeus	Common Red Raspberry			x					S5	G5	–
Rubus pubescens	Dewberry	x							S5	G5	–
Rumex crispus	Curly Dock				x			x	SNA	GNR	–
Salix euxina	Crack Willow					x			SNA	GNA	–
Salix petiolaris	Meadow Willow							x	S5	G5	–
Scirpus atrovirens	Dark-green Bulrush		x		x			x	S5	G5	–
Sium suave	Hemlock Water-parsnip				x	x		x	S5	G5	–
Solanum dulcamara	Bittersweet Nightshade		x		x	x			SNA	GNR	–
Solidago altissima	Tall Goldenrod		x						S5	G5	–
Solidago flexicaulis	Zigzag Goldenrod								S5	G5	–
Solidago gigantea	Giant Goldenrod	x							S5	G5	–
Solidago patula	Round-leaved Goldenrod				x				S4	G5	–
Streptopus lanceolatus	Rose Twisted-stalk	x							S5	G5	–
Symphyotrichum cordifolium	Heart-leaved Aster	x							S5	G5	–
Symphyotrichum ericoides	White Heath Aster	x							S5	G5	–
Taraxacum officinale	Common Dandelion		x					x	SNA	G5	–
Thelypteris palustris	Marsh Fern		x						S5	G5	–
Thuja occidentalis	Eastern White Cedar	x					x		S5	G5	–
Tilia americana	American Basswood			x					S5	G5	–
Toxicodendron radicans	Poison Ivy	x		x					S5	G5	–
Typha angustifolia	Narrow-leaved Cattail				x			x	SNA	G5	–
Typha latifolia	Broad-leaved Cattail				x			x	S5	G5	–
Ulmus americana	American Elm		x						S5	G5	–
Verbascum thapsus	Common Mullein			x					SNA	GNR	–
Vitis riparia	Riverbank Grape	x	x	x			x	x	S5	G5	–
Dipsacus fullonum	Wild Teasel			x					SNA	GNR	–
Tussilago farfara	Colt's-foot			x					SNA	GNR	–
Daucus carota	Wild Carrot			x					SNA	GNR	–

						Provincial Ranking		
Scientific Name	**Common Name**	**FOCM4**	**FODM5-10**	**THDM2-6**	**FODM7-2**	**[A]S_Rank**	**[B]G_Rank**	**[C]ESA**
Abies balsamea	Balsam Fir					S5	G5	–
Acer negundo	Manitoba Maple					S5	G5	–
Acer rubrum	Red Maple					S5	G5	–
Acer saccharinum	Silver Maple					S5	G5	–
Acer saccharum	Sugar Maple	x	x		x	S5	G5	–
Actaea pachypoda	White Baneberry				x	S5	G5	–
Actaea rubra	Red Baneberry		x			S5	G5	–
Aegopodium podagraria	Goutweed					SNA	GNA	–
Agrimonia gryposepala	Hooked Agrimony		x			S5	G5	–
Alliaria petiolata	Garlic Mustard		x		x	SNA	GNR	–
Ambrosia artemisiifolia	Common Ragweed			x		S5	G5	–
Anemonastrum canadense	Canada Anemone			x		S5	G5	–
Anemone virginiana	Tall Anemone					S5	G5	–
Aquilegia canadensis	Red Columbine	x				S5	G5	–
Aralia nudicaulis	Wild Sarsaparilla					S5	G5	–
Arctostaphylos uva-ursi	**Common Bearberry**	x				S5	G5	–
Arisaema triphyllum	Jack-in-the-pulpit		x			S5	G5	–
Asclepias incarnata	Swamp Milkweed					S5	G5	–
Betula papyrifera	Paper Birch		x		x	S5	G5	–
Bidens connata	Purple-stemmed Beggarticks					S4?	G5	–
Bidens frondosa	Devil's Beggarticks					S5	G5	–
Bidens sp.	Beggarticks					null	null	–
Boehmeria cylindrica	False Nettle					S5	G5	–
Cardamine sp.	Bittercress		x			null	null	–
Carex comosa	Bristly Sedge					S5	G5	–
Carex crinita	Fringed Sedge					S5	G5	–
Carex cristatella	Crested Sedge					S5	G5	–
Carex gracillima	Graceful Sedge		x			S5	G5	–

						Provincial Ranking		
Scientific Name	**Common Name**	**FOCM4**	**FODM5-10**	**THDM2-6**	**FODM7-2**	**[A]S_Rank**	**[B]G_Rank**	**[C]ESA**
Carex intumescens	Bladder Sedge					S5	G5	–
Carex pseudocyperus	Cyperus-like Sedge					S5	G5	–
Carex retrorsa	Retrorse Sedge					S5	G5	–
Carex vulpinoidea	Fox Sedge					S5	G5	–
Caulophyllum thalictroides	Blue Cohosh					S5	G5	–
Cephalanthus occidentalis	**Eastern Buttonbush**					S5	G5	–
Circaea alpina	Small Enchanter's Nightshade					S5	G5	–
Circaea canadensis	Broad-leaved Enchanter's Nightshade		x			S5	G5	–
Cirsium vulgare	Bull Thistle		x			SNA	GNR	–
Cornus racemosa	**Gray Dogwood**					S5	G5	–
Cornus rugosa	Round-leaved Dogwood	x				S5	G5	–
Cornus sericea	Red-osier Dogwood					S5	G5	–
Cypripedium parviflorum	Yellow Lady's-slipper					S5	G5	–
Epipactis helleborine	Eastern Helleborine	x	x			SNA	GNR	–
Equisetum arvense	Field Horsetail					S5	G5	–
Erigeron hyssopifolius	Daisy Fleabane					S5	G5	–
Fagus grandifolia	American Beech		x			S4	G5	–
Fragaria virginiana	Wild Strawberry		x	x		S5	G5	–
Fraxinus americana	White Ash	x	x			S4	G5	–
Fraxinus nigra	Black Ash		x			S3	G5	END
Fraxinus pennsylvanica	Green Ash		x			S4	G5	–
Galium aparine	Cleavers					S5	G5	–
Galium mollugo	Smooth Bedstraw		x			SNA	GNR	–
Galium palustre	Marsh Bedstraw					S5	G5	–
Geranium robertianum	Herb-Robert		x			S5	G5	–
Geum aleppicum	Yellow Avens		x			S5	G5	–
Geum laciniatum	**Rough Avens**					S4	G5	–
Glyceria striata	Fowl Mannagrass					S5	G5	–

						Provincial Ranking		
Scientific Name	**Common Name**	**FOCM4**	**FODM5-10**	**THDM2-6**	**FODM7-2**	**[A]S_Rank**	**[B]G_Rank**	**[C]ESA**
Hesperis matronalis	Dame's Rocket					SNA	G4G5	–
Hydrophyllum virginianum	Virginia Waterleaf		x			S5	G5	–
Impatiens capensis	Spotted Jewelweed		x			S5	G5	–
Juglans cinerea	Butternut					S2?	G4	END
Juglans nigra	Black Walnut					S4?	G5	–
Lactuca biennis	Tall Blue Lettuce	x				S5	G5	–
Lemna minor	Lesser Duckweed					S5?	G5	–
Leucanthemum vulgare	Oxeye Daisy			x		SNA	GNR	–
Lythrum salicaria	Purple Loosestrife					SNA	G5	–
Maianthemum canadense	Wild Lily-of-the-valley					S5	G5	–
Matteuccia struthiopteris	Ostrich Fern		x			S5	G5	–
Myosotis sp.	Forget-me-not			x		null	null	–
Nepeta cataria	Catnip					SNA	GNR	–
Onoclea sensibilis	Sensitive Fern		x			S5	G5	–
Ostrya virginiana	Eastern Hop-hornbeam		x		x	S5	G5	–
Parthenocissus quinquefolia	Virginia Creeper		x			S4?	G5	–
Parthenocissus vitacea	Thicket Creeper		x			S5	G5	–
Phalaris arundinacea	Reed Canary Grass			x		S5	G5	–
Picea glauca	White Spruce	x				S5	G5	–
Pinus sylvestris	Scots Pine	x				SNA	GNR	–
Populus balsamifera	Balsam Poplar		x			S5	G5	–
Populus tremuloides	Trembling Aspen	x	x			S5	G5	–
Prunella vulgaris	Self-heal		x			S5	G5	–
Prunus virginiana	Choke Cherry					S5	G5	–
Pteridium aquilinum	Bracken Fern	x				S5	G5	–
Quercus rubra	Northern Red Oak	x	x			S5	G5	–
Ranunculus acris	Tall Buttercup		x	x		SNA	G5	–
Rhamnus cathartica	Common Buckthorn			x		SNA	GNR	–
Ribes americanum	Wild Black Currant					S5	G5	–
Ribes cynosbati	Prickly Gooseberry		x			S5	G5	–

						Provincial Ranking		
Scientific Name	**Common Name**	**FOCM4**	**FODM5-10**	**THDM2-6**	**FODM7-2**	**[A]S_Rank**	**[B]G_Rank**	**[C]ESA**
Rubus idaeus	Common Red Raspberry		x			S5	G5	–
Rubus pubescens	Dewberry		x			S5	G5	–
Rumex crispus	Curly Dock					SNA	GNR	–
Salix euxina	Crack Willow					SNA	GNA	–
Salix petiolaris	Meadow Willow					S5	G5	–
Scirpus atrovirens	Dark-green Bulrush					S5	G5	–
Sium suave	Hemlock Water-parsnip					S5	G5	–
Solanum dulcamara	Bittersweet Nightshade					SNA	GNR	–
Solidago altissima	Tall Goldenrod					S5	G5	–
Solidago flexicaulis	Zigzag Goldenrod		x			S5	G5	–
Solidago gigantea	Giant Goldenrod					S5	G5	–
Solidago patula	Round-leaved Goldenrod					S4	G5	–
Streptopus lanceolatus	Rose Twisted-stalk					S5	G5	–
Symphyotrichum cordifolium	Heart-leaved Aster					S5	G5	–
Symphyotrichum ericoides	White Heath Aster					S5	G5	–
Taraxacum officinale	Common Dandelion		x			SNA	G5	–
Thelypteris palustris	Marsh Fern					S5	G5	–
Thuja occidentalis	Eastern White Cedar	x				S5	G5	–
Tilia americana	American Basswood		x			S5	G5	–
Toxicodendron radicans	Poison Ivy	x	x	x		S5	G5	–
Typha angustifolia	Narrow-leaved Cattail					SNA	G5	–
Typha latifolia	Broad-leaved Cattail					S5	G5	–
Ulmus americana	American Elm					S5	G5	–
Verbascum thapsus	Common Mullein					SNA	GNR	–
Vitis riparia	Riverbank Grape	x	x			S5	G5	–
Dipsacus fullonum	Wild Teasel					SNA	GNR	–
Tussilago farfara	Colt's-foot					SNA	GNR	–
Daucus carota	Wild Carrot					SNA	GNR	–

		Vegetation Community									
Scientific Name	**Common Name**	**FODM8-1**	**SWDM3-2**	**SWDM2-2**	**MAMM1/SWDM2-2**	**SWTM5-1**	**FOMM4-3**	**MAMM1-2**	**[A]S_Rank**	**[B]G_Rank**	**[C]ESA**

Bold scientific name and common name denote species that is regional rare in South Grey County (Owen Sound Field Naturalists. 2023. *Vascular Plant List: Bruce and Grey County.* Owen Sound Publications Committee. 5th ed.)

Conservation Rank - from MECP, NHIC, SAR and SARO Lists:

[A]S-rank - S1 - Extremely Rare, S2 - Very Rare, S3 - Rare to Uncommon, S4 - Common, S5 - Very Common

[B]G-Rank - G1 - Critically Imperiled, G2 - Imperiled, G3 - Vulnerable, G4 - Apparently Secure, G5 - Secure

[C]ESA - EXP (Extirpated), END (Endangered), THR (Threatened), SC (Special Concern), NAR (Not At Risk)

APPENDIX G: SAR BAT HABITAT ASSESSMENT DATA

Concession 4 Part of Lot 15

Town of the Blue Mountains

DRAFT

Appendix G:
Bat Habitat Survey Results

- Property Limit
- Watercourse (LIO/Birks NHC)
- Drainage Feature (Birks NHC)
- 0 Composite Trees
- 1-2 Composite Trees
- 3-5 Composite Trees
- Snag Survey Plot
- Woodland - Temporarily Altered (0.74 ha)
- Woodland - Lost (1.05 ha)
- Wetland - Lost (0.20 ha)
- Wetland - Temporarily Altered (0.22 ha)
- Natural Heritage - Retained (8.3 ha)

MAP DRAWING INFORMATION:
DATA PROVIDED BY: ESRI CANADA

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

N W E S

0 30 60 120 180 240 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\HiddenLake

PROJECT: 04-044-2021 STATUS: DRAFT DATE: 25/09/2023

S4U07906
06/13/2022 - 06/23/2022
Sunset Time: 21:07
Sunrise Time: 5:36

TIMES	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
SPECIES																				
MYLU	0	6	178	75	92	127	81	166	182	201	245	240	146	197	239	236	344	288	0	3043
MYSE	0	0	2			1	2	1	1	1		2	1	1	2		1		0	15
MYOTIS	0	4	20	15	12	29	11	19	12	35	16	12	6	13	16	9	10	35	0	274
PESU	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EPFU	0	0	6	11	9	11	7	2	11	1	1	2	2	2	1	1	1	4	0	72
LANO	0	0	1	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	3
EPFULANO	0	0	22	12	31	6	5	6	6	2	2	5	7	7	2	2	4	0	0	119
LACI	0	0	0	0	2	1	2	0	0	0	1	0	0	0	0	0	0	0	0	6
LABO	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
LowF	0	0	3	5	6	3	1	0	2	2	1	1	2	0	0	1	0	0	0	27
HighF	0	0	11	13	3	5	1	0	2	6	3	1	1	2	4	12	11	6	0	81
Noise	0	6	136	60	54	74	89	75	52	37	50	69	67	69	78	132	239	48	0	1335
No ID	0	18	148	65	63	85	98	89	115	88	99	104	102	110	133	181	132	52	1	1683
TOTAL	0	34	527	256	272	343	298	358	383	373	418	436	334	402	475	574	742	433	1	6659
																			TOTAL SAR	3332

S4U07956
06/13/2022 - 06/23/2022
Sunset Time: 21:07
Sunrise Time: 5:36

TIMES	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
SPECIES		0																		
MYLU	0	0	205	271	126	119	131	96	138	62	54	45	41	108	69	89	126	8	0	1688
MYSE	0	0	0	2	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	4
MYOTIS**	0	0	36	26	7	7	1	1	7	1	1	1	3	3	1	6	6	0	0	107
PESU*	0	0	0	0	1	0	0	1	1	1	1					0	0	0	0	5
EPFU	0	0	34	42	97	45	26	13	7	13	5	6	16	21	5	1	4	0	0	335
LANO	1	0	21	41	43	11	10	11	10	13	13	32	26	14	11	8	1	0	0	266
EPFULANO	0	0	25	31	20	4	3	4	3	3	3	5	11	3	2	2	2	0	0	121
LACI	1	0	2	7	15	7	1	2	2	1	5	6	2	0	0	0	0	0	0	51
LABO	0	0	1	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	4
LowF	0	0	15	15	23	1	8	5	6	11	13	2	7	2	2	0	1	0	0	111
HighF	0	1	7	14	4	12	5	7	19	8	8	10	14	14	4	4	6	1	0	138
Noise	15	13	74	54	53	55	38	33	32	21	20	35	25	37	22	20	50	40	15	652
No ID	0	1	34	84	82	83	50	31	45	14	17	22	32	19	17	17	21	1	0	570
TOTAL	17	15	454	587	472	344	273	204	271	150	140	164	177	221	133	148	217	50	15	4052
																			TOTAL SAR	1804

S4U07500
06/13/2022 - 06/23/2022
Sunset Time: 21:07
Sunrise Time: 5:36

TIMES	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	12:30-1:00	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
SPECIES																				
MYLU	**0**	0	497	323	144	152	108	107	97	70	61	57	72	103	232	270	511	64	0	**2868**
MYSE	**0**	0	0	0	0	0	0	0	1	0	59	0	0	0	0	2	0	0	0	**62**
MYOTIS	**0**	0	18	15	3	2	1	3	0	2	0	3	2	2	2	2	9	1	0	**65**
PESU	**0**	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	**2**
EPFU	**0**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
LANO	**0**	0	0	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	**5**
EPFULANO	**0**	1	36	102	97	49	34	26	17	26	21	37	50	20	22	20	19	12	0	**589**
LACI	**0**	1	1	15	15	6	11	3	5	7	4	7	11	10	0	12	2	0	0	**110**
LABO	**0**	0	1	12	7	12	2	0	2	10	3	5	2	4	4	6	0	1	0	**71**
LowF	**0**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
HighF	**0**	0	1	9	6	6	3	5	2	8	1	2	5	2	1	2	4		0	**57**
Noise	**11**	0	22	18	80	3	13	14	6	12	10	8	12	13	12	7	17	6	10	**274**
No ID	**10**	0	61	63	0	46	39	45	40	40	21	41	37	28	37	49	37	4	2	**600**
TOTAL	10	2	615	539	272	275	198	194	164	163	170	152	179	169	298	363	582	82	2	**4703**
																			TOTAL SAR	**2997**

Part of Lot 25 Concession 4, Town of the Blue Mountains
Appendix G - Bat Call Acoustic Analysis Summary Table

Species ID

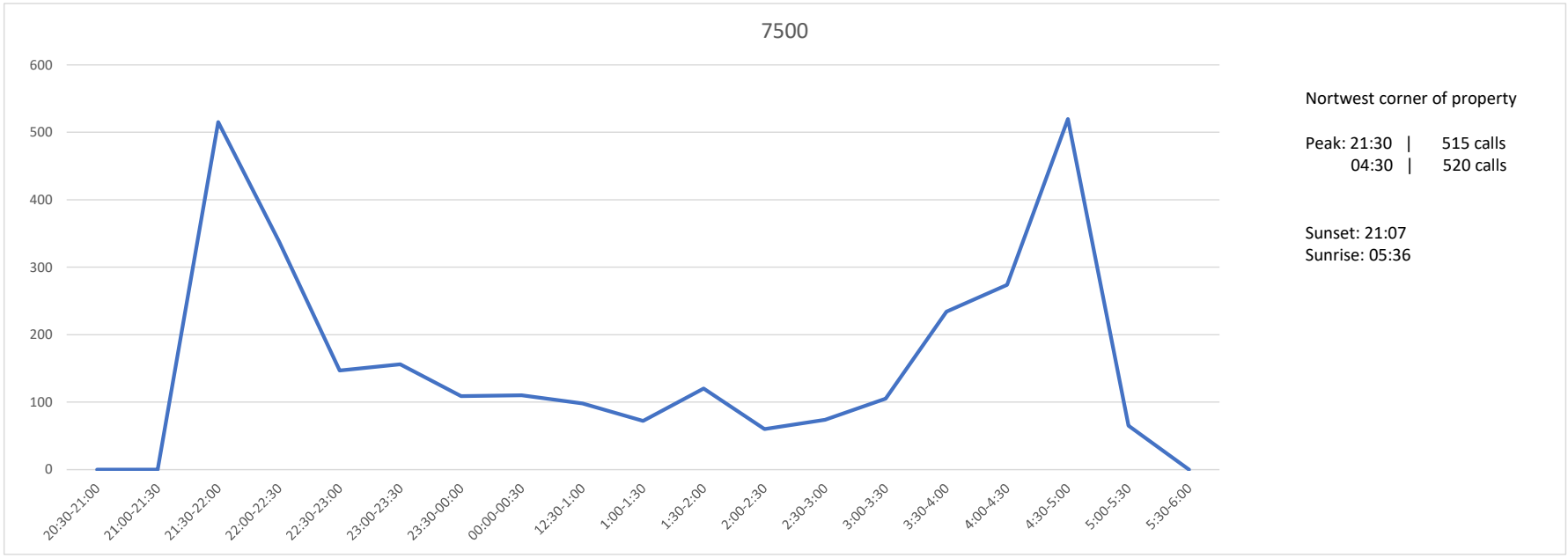
MYLU	Myotis lucifugus
MYSE	Myotis septentrionalis
PESU	Perimyotis subflavus
EPFU	Eptesicus fuscus
LANO	Lasionycteris noctivagans
LACI	Lasiurus cinereus
LABO	Lasiurus borealis
MYLE	Myotis leibii

Groupings

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

Minimum Frequency Range of Species

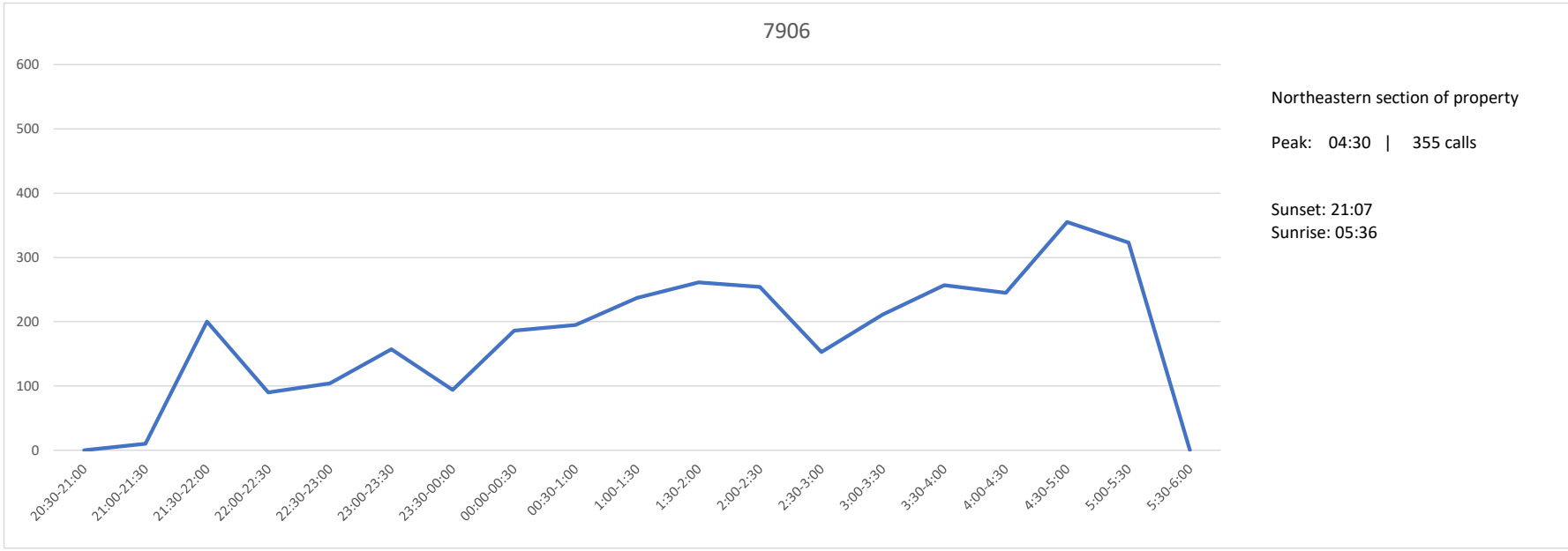
MYLU	40 - 45kHz
MYSE	40 - 45kHz
PESU	35 - 40kHz
EPFU	25 - 30kHz
LANO	25 - 30kHz
LACI	<25kHz
LABO	30 - 35kHz
MYLE	40 - 45kHz



Nortwest corner of property

Peak: 21:30 | 515 calls
04:30 | 520 calls

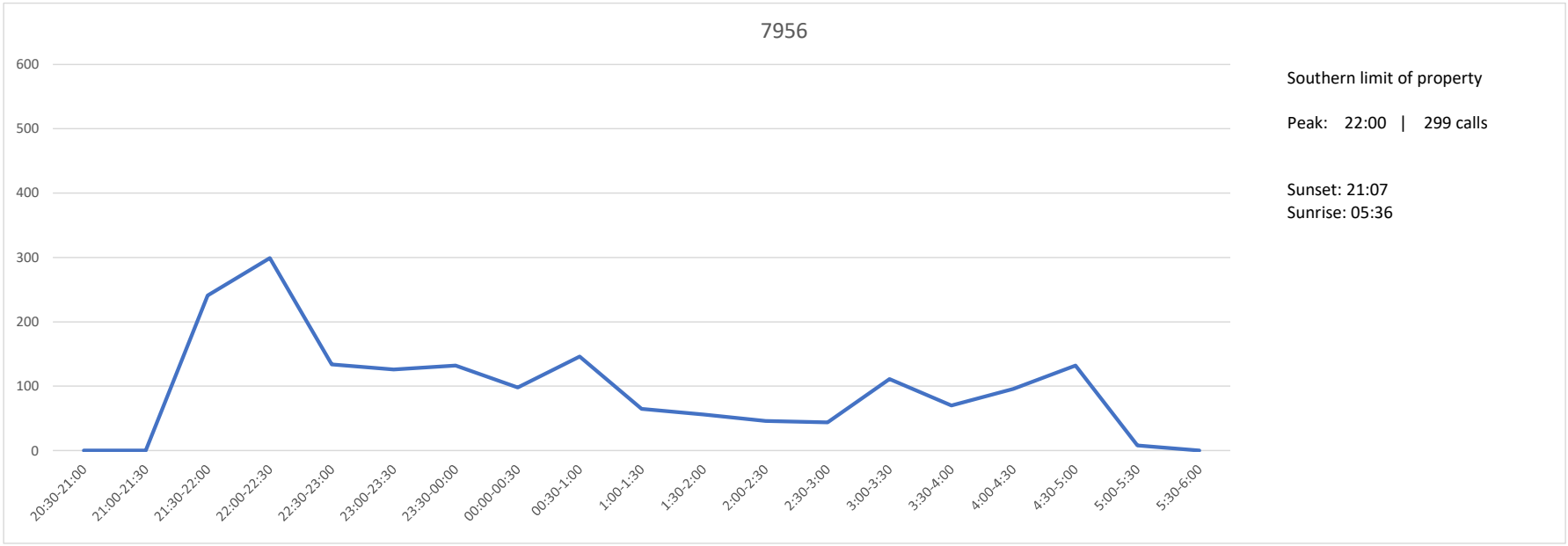
Sunset: 21:07
Sunrise: 05:36



Northeastern section of property

Peak: 04:30 | 355 calls

Sunset: 21:07
Sunrise: 05:36


7956
600
500
400
300
200
100
0
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
Southern limit of property
Peak: 22:00 | 299 calls
Sunset: 21:07
Sunrise: 05:36

APPENDIX H: OBBA SQUARE 17TNK53

BIRDS CANADA
OISEAUX CANADA

Square Summary (17TNK53) [change]

	#species				#hours		#pc done	
	poss	prob	conf	total	total	peak	road	offrd
Curr.	29	5	8	42	10.3	4.4	0	0
Prev.	42	29	23	94	47.8	—	14	

Region summary (#9: Grey, ON)

#squares	#sq with data	#species	#squares (pc)	
			target	compl.
36	36	154	36	3
36	35	169	0	28

Target number of point counts in this square: 25 in total: 25 road side, 0 off road.

SPECIES	Prev.	Code	%
Canada Goose	FY	NE	83
Mute Swan			19
Trumpeter Swan ‡			11
Wood Duck	H		47
Blue-winged Teal ‡	H		0
Northern Shoveler ‡			0
Gadwall ‡			0
American Wigeon ‡			0
Mallard	NE		66
American Black Duck ‡	NE		2
Northern Pintail ‡			0
Green-winged Teal ‡			0
Redhead †			0
Ring-necked Duck ‡			2

Lesser Scaup ‡			0
Hooded Merganser			30
Common Merganser	FY		16
Red-breasted Merganser ‡	D		5
Ruddy Duck ‡			0
Wild Turkey			63
Ruffed Grouse			61
Ring-necked Pheasant ‡			0
Pied-billed Grebe			13
Rock Pigeon (Feral Pigeon)	H		47
Mourning Dove	S	S	94
Yellow-billed Cuckoo			16
Black-billed Cuckoo	S	S	44
Common Nighthawk ‡	H		8
Eastern Whip-poor-will ‡			2
Chimney Swift §			11
Ruby-throated Hummingbird	H	T	58
Virginia Rail			19
Sora			13

SPECIES	**Prev.**	**Code**	**%**
Common Gallinule ‡			5
American Coot ‡			2
Yellow Rail †			0
Sandhill Crane			50
Piping Plover †			0
Killdeer §	T	T	75
Upland Sandpiper †			22
American Woodcock	S	S	44
Wilson's Snipe			61
Wilson's Phalarope †			0
Spotted Sandpiper	T		27
Ring-billed Gull §	NY		0
Herring Gull §	NY		13
Great Black-backed Gull †	NE		0
Black Tern †			0
Common Tern § ‡	NU		0

Common Loon	S		22
Double-crested Cormorant § ‡	NY		2
American Bittern			30
Least Bittern †			5
Great Blue Heron §	NY		27
Great Egret †	NY		0
Green Heron §		H	33
Black-crowned Night-Heron †	NY		0
Turkey Vulture			63
Osprey			22
Northern Harrier			30
Sharp-shinned Hawk			13
Cooper's Hawk	H		13
Northern Goshawk ‡			16
Bald Eagle ‡			16
Red-shouldered Hawk			5
Broad-winged Hawk			19

SPECIES	Prev.	Code	%
Red-tailed Hawk	H		61
Eastern Screech-Owl			41
Great Horned Owl	P		36
Barred Owl			22
Long-eared Owl ‡			2
Short-eared Owl †			0
Northern Saw-whet Owl ‡			2
Belted Kingfisher	H		63
Yellow-bellied Sapsucker	H		66
Red-headed Woodpecker †			11
Red-bellied Woodpecker	H	S	36
Downy Woodpecker	H	T	61
Hairy Woodpecker	S	H	77
Pileated Woodpecker			47
Northern Flicker	T	S	83
American Kestrel §	H		44
Merlin			30
Peregrine Falcon ‡			2

Olive-sided Flycatcher ‡			0
Eastern Wood-Pewee §	S	T	77
Yellow-bellied Flycatcher			0
Alder Flycatcher	T	S	52
Willow Flycatcher	S		22
Least Flycatcher	S		55
Eastern Phoebe	N	S	72
Great Crested Flycatcher	T	S	88
Eastern Kingbird	P	D	80
Yellow-throated Vireo			19
Blue-headed Vireo			36
Warbling Vireo	T	S	69
Red-eyed Vireo	T	S	97
Blue Jay	T	H	94
American Crow	CF	FY	91

SPECIES	Prev.	Code	%
Common Raven	H		75
Black-capped Chickadee	CF	S	94
Horned Lark §			5
Northern Rough-winged Swallow			22
Purple Martin ‡	AE		2
Tree Swallow	T	H	63
Bank Swallow §			16
Barn Swallow §	CF		58
Cliff Swallow §			22
Ruby-crowned Kinglet ‡			0
Golden-crowned Kinglet			16
Red-breasted Nuthatch	S	S	66
White-breasted Nuthatch	S		72
Brown Creeper			38
Blue-gray Gnatcatcher ‡			0
House Wren	T	FY	91
Winter Wren	S		61
Sedge Wren ‡			2
Marsh Wren			16
Carolina Wren ‡			2
European Starling	FS	H	86
Gray Catbird	T	S	86
Brown Thrasher	A		66
Northern Mockingbird ‡			0
Eastern Bluebird			66
Veery	S		52
Swainson's Thrush ‡			0
Hermit Thrush			19
Wood Thrush §	T		50
American Robin	NE	FY	97
Cedar Waxwing	S	H	75
House Sparrow			38
Evening Grosbeak ‡			0

SPECIES	Prev.	Code	%

House Finch	T		25
Purple Finch	S		44
Red Crossbill ‡			0
White-winged Crossbill ‡			0
Pine Siskin ‡			2
American Goldfinch	T	S	88
Grasshopper Sparrow §			30
Chipping Sparrow	T	CF	88
Clay-colored Sparrow			25
Field Sparrow §	S		66
Dark-eyed Junco ‡			0
White-throated Sparrow			69
Vesper Sparrow	S		22
Savannah Sparrow	T		77
Song Sparrow	NY	CF	94
Swamp Sparrow	T	S	63
Eastern Towhee §			63
Bobolink §	S		63
Western Meadowlark †			0
Eastern Meadowlark §	T	S	83
Orchard Oriole ‡			0
Baltimore Oriole	NY		86
Red-winged Blackbird	NY	NB	97
Brown-headed Cowbird	D		66
Common Grackle	NE	H	94
Ovenbird	T		66
Louisiana Waterthrush †			2
Northern Waterthrush	S		44
Golden-winged Warbler †			16
Blue-winged Warbler			25
Golden-winged/Blue-winged Warbler ‡	S		0
Black-and-white Warbler	S		63
Nashville Warbler	S		50

SPECIES	**Prev.**	**Code**	**%**
Mourning Warbler	S		41
Common Yellowthroat	T	S	86

Hooded Warbler ‡			0
American Redstart	T	S	86
Cerulean Warbler †			0
Northern Parula ‡			5
Magnolia Warbler			19
Blackburnian Warbler			19
Yellow Warbler	T	S	83
Chestnut-sided Warbler	T		38
Black-throated Blue Warbler	S		33
Pine Warbler	S	NB	55
Yellow-rumped Warbler	S	S	61
Black-throated Green Warbler	S		69
Canada Warbler §	S		25
Scarlet Tanager			61
Northern Cardinal	T	S	77
Rose-breasted Grosbeak	S		77
Indigo Bunting	S	S	83

This list includes all breeding species expected in the region #9 (Grey). Underlined species are those that you should try to add to this square (17TNK53). They have not yet been reported in this square, but have been reported in more than 50% of the squares in this region so far. "Prev." is the code for the highest breeding evidence for that species in square 17TNK53 in the previous atlas. "Code" is the code for the highest breeding evidence for that species in square 17TNK53 over the last 5 years. The % columns give the percentage of squares in that region where that species was reported (this gives an idea of the expected chance of finding that species in region #9). Rare/Colonial Species Report Forms should be completed for species marked: § (Species of interest), ‡ (regionally rare), † (provincially rare). An up-to-date version of this sheet is available from https://naturecounts.ca//nc//atlas/squaresummaryform.jsp?squareID=17TNK53&lang=EN Data current as of **7/05/2023 16:24**.

APPENDIX I: BREEDING BIRD SURVEY RESULTS TABLE

			Survey Stations[A,B]							Breeding Evidence[C]	Area Sensitive (Y/N)[H]	Conservation Rank[D]		
Family	Scientific Name	English Common Name	1	2	3	4	5	6	Incidental*			G-rank[E]	S-rank[F]	SARO Status[G]
Anatidae	*Anas platyrhynchos*	Mallard							H	Possible		G5	S5	–
Anatidae	*Branta canadensis*	Canada Goose					FO			Observed		G5	S5	–
Ardeidae	*Butorides virescens*	Green Heron			H					Possible		G5	S4B	–
Cardinalidae	*Cardinalis cardinalis*	Northern Cardinal			S	S				Possible		G5	S5	–
Certhiidae	*Certhia americana*	Brown Creeper							S	Possible	Y	G5	S5B	–
Columbidae	*Zenaida macroura*	Mourning Dove				S	S			Possible		G5	S5	–
Corvidae	*Corvus brachyrhynchos*	American Crow	C, FO		C		C			Possible		G5	S5B	–
Corvidae	*Corvus corax*	Common Raven						FO		Observed		G5	S5	–
Corvidae	*Cyanocitta cristata*	Blue Jay	C	C	C		C		X	Possible		G5	S5	–
Emberizidae	*Melospiza melodia*	Song Sparrow		S		T			X	Probable		G5	S5B	–
Fringillidae	*Carduelis tristis*	American Goldfinch						S	X	Possible		G5	S5B	–
Icteridae	*Agelaius phoeniceus*	Red-winged Blackbird		T	S	T	S		X	Probable		G5	S4	–
Icteridae	*Icterus galbula*	Baltimore Oriole		S				S		Possible		G5	S4B	–
Icteridae	*Quiscalus quiscula*	Common Grackle							X	Observed		G5	S5B	–
Paridae	*Poecile atricapillus*	Black-capped Chickadee	S	S		S	S		X	Possible		G5	S5	–
Parulidae	*Dendroica caerulescens*	Black-throated Blue Warbler			S				S	Possible	Y	G5	S5B	–
Parulidae	*Dendroica petechia*	Yellow Warbler			T					Probable		G5	S5B	–
Parulidae	*Geothlypis trichas*	Common Yellowthroat				S				Possible		G5	S5B	–
Parulidae	*Oporornis philadelphia*	Mourning Warbler						S		Possible		G5	S4B	–
Parulidae	*Seiurus aurocapilla*	Ovenbird					S			Possible	Y	G5	S4B	–
Parulidae	*Setophaga ruticilla*	American Redstart	T		T	S	S	S		Probable	Y	G5	S5B	–
Passeridae	*Passer domesticus*	House Sparrow					S			Possible		G5	SNA	–
Picidae	*Colaptes auratus*	Northern Flicker			S	S			X	Possible		G5	S4B	–
Picidae	*Dryocopus pileatus*	Pileated Woodpecker	S		S					Possible		G5	S5	–
Picidae	*Melanerpes carolinus*	Red-bellied Woodpecker	T						S	Probable		G5	S4	–
Picidae	*Picoides pubescens*	Downy Woodpecker							X	Observed		G5	S5	–
Picidae	*Picoides villosus*	Hairy Woodpecker					S		X	Possible	Y	G5	S5	–
Picidae	*Sphyrapicus varius*	Yellow-bellied Sapsucker	S					S	X	Possible		G5	S5B	–
Sittidae	*Sitta canadensis*	Red-breasted Nuthatch		S						Possible	Y	G5	S5	–
Sturnidae	*Sturnus vulgaris*	European Starling		S						Possible		G5	SNA	–
Troglodytidae	*Troglodytes aedon*	House Wren		S			S			Possible		G5	S5B	–
Turdidae	*Catharus fuscescens*	Veery							X	Observed	Y	G5	S4B	–

Family	Scientific Name	English Common Name	Survey Stations[A,B]							Breeding Evidence[C]	Area Sensitive (Y/N)[H]	Conservation Rank[D]		
			1	2	3	4	5	6	Incidental*			G-rank[E]	S-rank[F]	SARO Status[G]
Turdidae	*Hylocichla mustelina*	Wood Thrush							X	Observed		G5	S4B	SC
Turdidae	*Turdus migratorius*	American Robin	S					T		Possible		G5	S5B	–
Tyrannidae	*Contopus virens*	Eastern Wood-pewee		T	T			S		Probable		G5	S4B	SC
Tyrannidae	*Myiarchus crinitus*	Great Crested Flycatcher	S	S		S				Possible		G5	S4B	–
Vireonidae	*Vireo olivaceus*	Red-eyed Vireo	T	T	S	T	T	T		Probable		G5	S5B	–

Surveys Conditions:

[A]June 2, 2022; Start Time 0546hr/ End Time 0714hr; Temperature +9°C; Wind B1; Cloud Cover 0%; Precipitation Nil; Observer: M. Fuller

[B]June 20, 2022; Start Time 00545hr/ End Time 0725hr; Temperature +14°C; Wind B1; Cloud Cover 100%; Precipitation Nil; Observer: M. Fuller

[C]OBBA Breeding Evidence Codes:

H - Species observed in its breeding season in suitable nesting habitat
F/O - Flyover
C - Call heard (male or female), in suitable nesting habitat in nesting season.
S - Singing male Present, or breeding calls heard, in suitable nesting habitat in nesting season.
N - Nest Building or excavation of nest hole
NE - Nest containing eggs
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
P - Pair observed in suitable nesting habitat in nesting season

[D]Conservation Rank - from MECP, NHIC, SAR and SARO Lists

[F]S-rank - S1 - Extremely Rare, S2 - Very Rare, S3 - Rare to Uncommon, S4 - Common, S5 - Very Common

[E]G-Rank - G1 - Critically Imperiled, G2 - Imperiled, G3 - Vulnerable, G4 - Apparently Secure, G5 - Secure

[G]SARO - EXP (Extirpated), END (Endangered), THR (Threatened), SC (Special Concern), NAR (Not At Risk)

[H]Ontario Ministry of Natural Resources. Significant Wildlife Habitat Guide. October 2000

APPENDIX J:

SIGNIFICANT WOODLAND MAPPING

SIGNIFICANT WILDLIFE HABITAT ASSESSMENT TABLE

BIRKS

NATURAL HERITAGE CONSULTANTS

BIRKS NHC 04-044-2021

Concession 4 Part of Lot 15

Town of the Blue Mountains

Appendix J:
Significant Woodland Mapping

- Property Limit
- Watercourse (LIO/Birks NHC)
- Significant Woodland Mapping (Grey County Official Plan, 2018)
- 100m Woodland Interior Habitat

MAP DRAWING INFORMATION:
DATA PROVIDED BY: ESRI CANADA

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

N W E S

0 275 550 1,100 1,650 2,200 Meters

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PROJECT: 04-044-2021 STATUS: DRAFT DATE: 10/10/2023

Tables 5.1-5.6. Significant Wildlife Habitat Criteria Schedule for Ecoregion 6E

5.1 - 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 meet criteria related to ELC Ecosite Codes. Spring flooded fields were not documented in 2020 and the listed wildlife species were not documented during field investigations.
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.	Wetland habitat where open water was observed is small and is not of suitable size to support such aggregation. The listed wildlife species were not documented in sufficient numbers within the wetland habitats during field investigations to be considered significant.

Wildlife Habitat	Wildlife Species	Candidate SWH		Confirmed SWH	Assessment
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	
Shorebird Migratory Stopover Area **Rationale:** 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. Information Sources • Western hemisphere shorebird reserve network. • Canadian Wildlife Service (CWS) Ontario Shorebird Survey. • Bird Studies Canada • Ontario Nature • Local birders and naturalist clubs • Natural Heritage Information Center (NHIC) Shorebird Migratory Concentration Area	Studies confirming: • Presence of 3 or more of listed species and > 1000 shorebird use days during spring or fall migration period (shorebird use days are the accumulated number of shorebirds counted per day over the course of the fall or spring migration period) • Whimbrel stop briefly (<24hrs) during spring migration, any site with >100 Whimbrel used for 3 years or more is significant. • The area of significant shorebird habitat includes the mapped ELC shoreline ecosites plus a 100m radius area • 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.	Wetland habitats that meet ELC code criteria are small and contain few habitat features consistent with other habitat criteria. Georgian Bay shoreline is located approximately 100 m north of Property but is separated by Highway 26 and residential dwellings. Additionally, the listed wildlife species were not documented within the wetland habitats during field investigations.
Raptor Wintering Area **Rationale:** 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 **Special Concern:** Short-eared Owl Bald Eagle	Hawks/Owls: Combination of ELC Community Series; need to have present one Community Series from each land class; Forest: FOD, FOM, FOC. Upland: CUM; CUT; CUS; CUW. Bald Eagle: 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 Information Sources: • 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 does not contain a combination of field and woodlands. No other habitats are present within the study area that could served this habitat function.

Wildlife Habitat	Wildlife Species	Candidate SWH		Confirmed SWH	Assessment
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	
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) • University Biology Departments with bat experts.	• 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, karst or underground foundations have been identified within the study area.
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[E] • >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.	**The woodland present within the study area may provide this function to the listed bat species. Big Brown Bat was identified on the Property during field investigations.**
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.	**Wetland present on the Property may provide suitable wintering habitat for Midland Painted Turtle and Snapping Turtle. However, no turtle species were documented during field investigations.**

Wildlife Habitat	Wildlife Species	Candidate SWH		Confirmed SWH	Assessment
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	
Reptile Hibernaculum **Rationale;** Generally sites are the only known sites in the area. Sites with the highest number of individuals are most significant.	**Snakes:** Eastern Gartersnake Northern Watersnake Northern Red-bellied Snake Northern Brownsnake Smooth Green Snake Northern Ring-necked Snake Milksnake **Special Concern:** Eastern Ribbonsnake **Lizard:** **Special Concern** (Southern Shield population)**:** Five-lined Skink	For all snakes, habitat may be found in any ecosite other than very wet ones. Talus, Rock Barren, Crevice, 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 Five-lined Skink, ELC Community Series of FOD and FOM and Ecosites: FOC1 FOC3	• For snakes, hibernation takes place in sites located below frost lines in burrows, rock crevices and other natural 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 . <u>Information Sources</u> • 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	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 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.	**Features associated with this function, such as rock crevices, exposed tree roots, rocky slopes, and present in the southern extent of the Property. Therefore, it may provide this habitat function.** **No congregations of snakes or skink individuals were observed on the Property during site investigations. Five-lined Skinks are not known to be present in the vicinity of the Property.**
Colonially -Nesting Bird Breeding Habitat (Bank and Cliff) **<u>Rationale:</u>** Historical use and number of nests in a colony make this habitat significant. An identified colony can be very important to local populations. All swallow populations are declining in Ontario.	Cliff Swallow Northern Rough-winged Swallow (this species is not colonial but can be found in Cliff Swallow colonies)	Eroding banks, sandy hills, borrow pits, steep slopes, and sand piles. Cliff faces, bridge abutments, silos, barns. Habitat found in the following ecosites: CUM1 CUT1 CUS1 BLO1 BLS1 BLT1 CLO1 CLS1 CLT1	• Any site or areas with exposed soil banks, undisturbed or naturally eroding that is not a licensed/permitted aggregate area. • Does not include man-made structures (bridges or buildings) or recently (2 years) disturbed soil areas, such as berms, embankments, soil or aggregate stockpiles. • Does not include a licensed/permitted Mineral Aggregate Operation. <u>Information Sources</u> • Reports and other information available from 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	Habitat in the study area does not meet key criteria to be considered significant – cliffs or banks were not observed within 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 (Tree/Shrubs) **<u>Rationale</u>:** 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. <u>Information Sources</u> • 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.	The property contains appropriate ELC communities however it does not meet size requirements. One Green Heron was observed during surveys. However, no evidence of nests within ELC communities was observed.
Colonially -Nesting Bird Breeding Habitat (Ground) **<u>Rationale;</u>** 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 does not meet key criteria to be considered significant – no rocky islands or peninsulas were documented.

Wildlife Habitat	Wildlife Species	Candidate SWH		Confirmed SWH	Assessment
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	
Migratory Butterfly Stopover Areas **<u>Rationale:</u>** 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 5km of Lake Ontario and thus this habitat function is not applicable.
Landbird Migratory Stopover Areas **<u>Rationale:</u>** 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 • Ontario Important Bird Areas (IBA) Program	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 5km 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	
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 portions of the study area are mapped as Stratum II by the MNRF (source: LIO).
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.	Study area is located in the northern part of Ecoregion 6E in an area that receives >20cm of snow accumulation per year. Thus, this criterion is not applicable.

5.2 - 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.
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.
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.

Rare Vegetation Community	Candidate SWH			Confirmed SWH	Assessment
	ELC Ecosite Code	Habitat Description	Detailed Information and Sources	Defining Criteria	
Old Growth Forest **Rationale:** Due to historic logging practices, extensive old growth forest is rare in the Ecoregion. Interior habitat provided by old growth forests is required by many wildlife species.	Forest Community Series: FOD FOC FOM SWD SWC SWM	Old Growth forests are characterized by heavy mortality or turnover of over-storey trees resulting in a mosaic of gaps that encourage development of a multi-layered canopy and an abundance of snags and downed woody debris.	Woodland 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 • OMNRF Districts. • Field Naturalist clubs • Conservation Authorities • Sustainable Forestry Licence (SFL) companies will possibly know locations through field operations. • Municipal forestry departments	Field Studies will determine: • If dominant trees species of the are >140 years old, then the area containing these trees is SWH • 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.	Forest communities in study area do not meet key criteria related to Woodland areas. Woodland habitat is not considered to be old growth forest.
Savannah **Rationale:** Savannahs are extremely rare habitats in Ontario.	TPS1 TPS2 TPW1 TPW2 CUS2	A Savannah is a tallgrass prairie habitat that has tree cover between 25 – 60%.	No minimum size to site. Site must be restored or a natural site. Remnant sites such as railway right of ways are not considered to be SWH. Information Sources • Natural Heritage Information Center (NHIC) has location information 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.
Tallgrass Prairie **Rationale:** 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. Information Sources • 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.
Other Rare Vegetation Communities **Rationale:** 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. Information Sources • 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 have been documented within the study area.

5.3 - 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.	The listed species were not documented in sufficient numbers within 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 listed species were not documented within 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 does that contains habitat features that meet the criteria for this habitat function. No stick nests were documented during field investigations.
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.	**The Property contains suitable ELC ecosites that are located next to exposed gravel/sandy soils. Therefore, these features may provide this habitat function.**

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	Groundwater seepage was not observed within the study area during field investigations.
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.	**Surveys completed on the Property identified three frog species and American Toad with call level codes of 3. Thus, the wetland habitat does provide this habitat function for both woodlands.**
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.	**Surveys completed on the Property identified three frog species and American Toad with call level codes of 3. Thus, the wetland habitat does provide this habitat function for both wetlands.**

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.	**F**orest and woodland habitat present on the Property do not meet interior forest size criteria. Five interior species were noted on the property (Yellow-Bellied Sapsucker, Black-throated Blue Warbler, Ovenbird, Red-breasted Nuthatch and Veery), however none were confirmed to be breeding on the property. Thus, this significant wildlife habitat function is not associated with the property.

5.4 - 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	Suitable wetland habitat is present on the Property and Green Heron was observed during field investigations. However, species were not observed in sufficient numbers to warrant identification of significance.
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	Suitable ELC communities are not present within the study area. Listed species were not documented during field investigations.
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.	Suitable ELC communities are not present within the study area. None of the listed species were documented during field investigations.

Wildlife Habitat	Wildlife Species	Candidate SHW		Confirmed SWH	Assessment
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	
Terrestrial Crayfish **Rationale:** 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. Information Sources • 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.	Chimneys were not documented within the wetland communities.
Special Concern and Rare Wildlife Species **Rationale:** 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 Information Sources • 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.	**Eastern Wood Pewee was heard calling throughout the property during both breeding bird surveys, with 'probable' breeding evidence. Additionally, suitable habitat is present within adjacent lands for Snapping Turtle.**

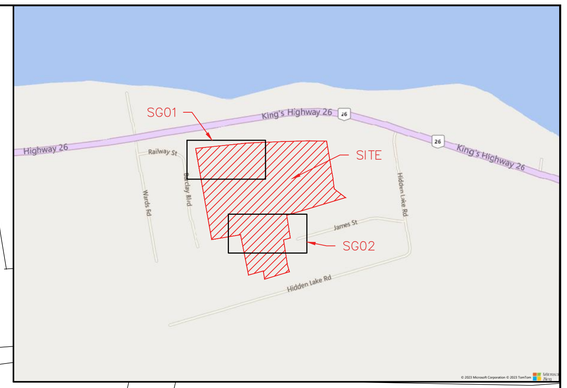
5.5 - Animal Movement Corridors

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)** <u>Information Sources</u> • 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 breeding habitat SWH was confirmed on the Property during field investigations. However, given the isolated nature of the property, and the presence of barriers to migration surrounding the feature (residences, Georgian Trail, high relief areas, Highway 26), we do not consider the amphibian corridor function to be present.
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). <u>Information Sources</u> • 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	No deer wintering habitat present.

5.6 - 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 K: SITE PLANS



KEY PLAN

RAILWAY STREET

BARCLAY BOULEVARD

1027
182.70
TBM-2

TBM1 - ELEVATION 182.62m
CUT CROSS IN SE CORNER OF CONCRETE PAD FOR CANADA POST MAILBOXES ON RAILWAY STREET

TBM2 - ELEVATION 182.70m
NAIL SPIKE IN HYDRO POLE ON EAST SIDE OF BEND IN RAILWAY STREET

TBM3 - ELEVATION 184.48m
NAIL SPIKE IN HYDRO POLE ON SOUTH SIDE OF JAMES STREET AT DEAD END

MATCH TO EXISTING GRADE AT PROPERTY LINE

BH #1
HIGHEST MEASURED GROUNDWATER ELEV.: 181.31

BH #2
HIGHEST MEASURED GROUNDWATER ELEV.: 181.55

TOP OF BANK

BOTTOM OF BANK

3:1 MAX

HEAVY DUTY SILT FENCE
1.0m INSIDE THE H-E LIMIT

CROSS HATCHED CUT AREA TO DRAIN TOWARDS WETLAND

CROSS HATCHED AREA TO BE CUT TO COMPENSATE FOR FLOODPLAIN STORAGE

IN EVENT OF CULVERT BLOCKAGE, MAJOR OVERLAND SPILL OVER GEORGIAN TRAIL AT ELEV.: 182.50

FIRST FLOOR ELEVATION OR LOWEST BUILDING OPENING TO BE MINIMUM 183.00m.

MINIMUM BASEMENT FLOOR ELEVATION TO BE LOCATED A MINIMUM OF 1.0m ABOVE SEASONAL HIGH GROUNDWATER ELEVATION.

MINIMUM UNDERSIDE OF SEPTIC FILTER MEDIUM TO BE LOCATED A MINIMUM OF 0.9m ABOVE SEASONAL HIGH GROUNDWATER ELEVATION.

30m WETLAND SETBACK

15m WETLAND SETBACK

WETLAND BOUNDARY

PR. SPOT ELEVATION 181.34

EX. SPOT ELEVATION 181.34

DRAINAGE DIRECTIONAL ARROW

PROPOSED ZONING:

- WETLAND (WL)
- HAZARD (H)
- HAZARD EXCEPTION (H-E)
- RESIDENTIAL (R1-1 OR R1-2)

HAZARD LAND EXCEPTION TO ALLOW FOR TREE CLEARING, GRADING TO ACHIEVE REQUIRED FLOOD STORAGE VOLUMES AND REPLANTING/NATURALIZATION

BENCHMARKS

TBM1 - ELEVATION 182.62m
CUT CROSS IN SE CORNER OF CONCRETE PAD FOR CANADA POST MAILBOXES ON RAILWAY STREET

TBM2 - ELEVATION 182.70m
NAIL SPIKE IN HYDRO POLE ON EAST SIDE OF BEND IN RAILWAY STREET

TBM3 - ELEVATION 184.48m
NAIL SPIKE IN HYDRO POLE ON SOUTH SIDE OF JAMES STREET AT DEAD END

NOTES

LEGAL SURVEY INFORMATION AND LOT DIMENSIONS SHOWN ON THIS PLAN ARE TAKEN FROM A SURVEY PLAN PREPARED BY J.D. BARNES LIMITED, DATED MAY 19, 2023 WHICH MAY NOT BE FINAL AND ARE NOT GUARANTEED. THE FINAL REGISTERED PLAN OF SUBDIVISION SHALL BE REFERRED TO FOR CONFIRMATION OF THE DATA.

TOPOGRAPHIC INFORMATION SHOWN ON THIS PLAN FROM SURVEY PREPARED BY TATHAM ENGINEERING DATED APR 21, 2022.

No.	REVISION DESCRIPTION	DATE
1.	FOR APPROVAL	SEPT 2023

ENGINEER STAMP

PRELIMINARY

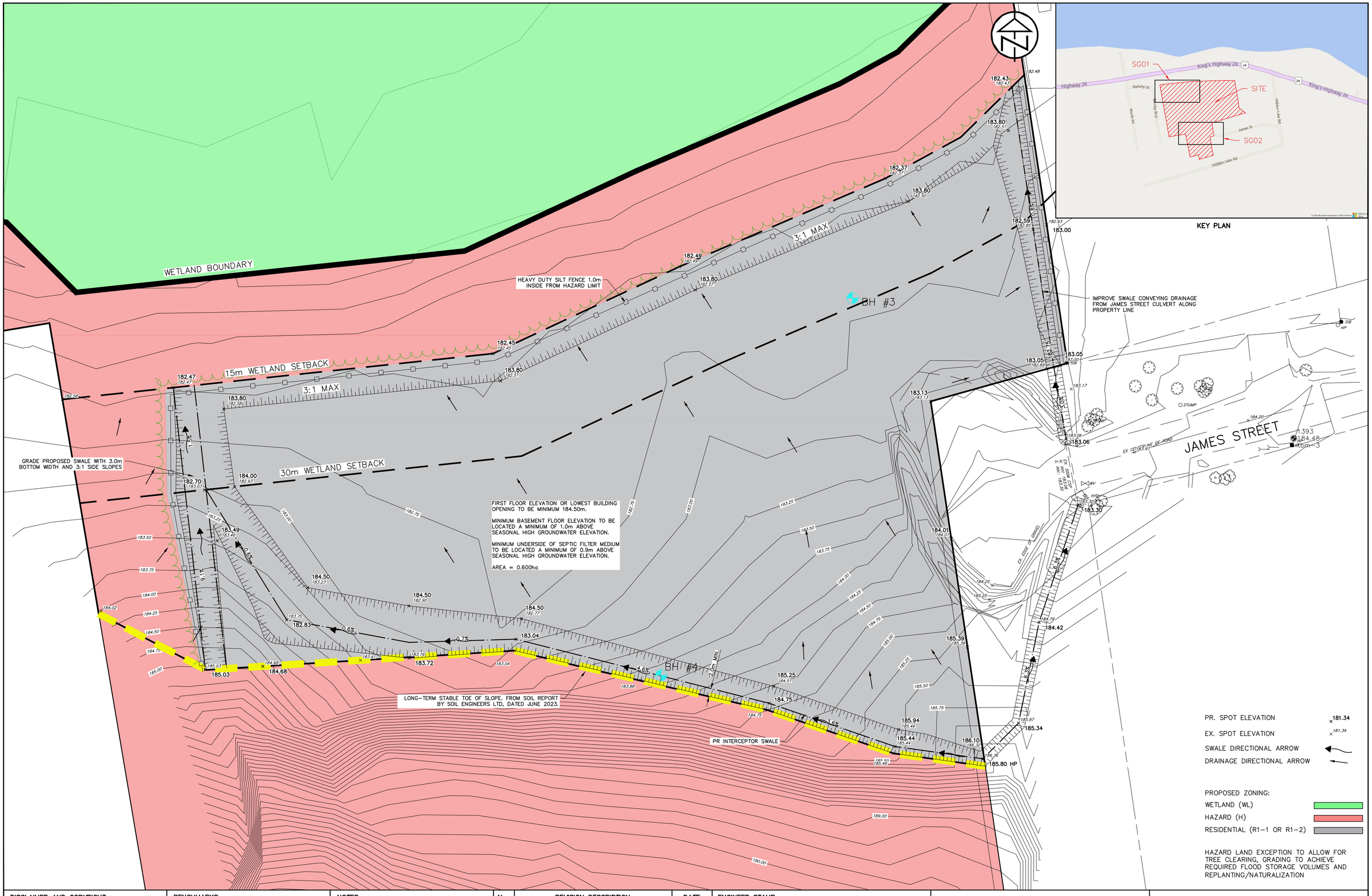
PART LOT 25, CONSESSION 4
TOWN OF THE BLUE MOUNTAINS

SITE GRADING PLAN
NORTH

TATHAM ENGINEERING

DESIGN: JM	FILE: 121295	DWG: SG01
DRAWN: KH	DATE: APR 2022	
CHECK: JPA	SCALE: 1:400	

Drawing Name: 121295-Earthworks Analysis.dwg, Plotted: Sep 28, 2023



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No.	REVISION DESCRIPTION	DATE
1.	FOR APPROVAL	SEPT 2023

ENGINEER STAMP

PRELIMINARY

PART LOT 25, CONSESSION 4
TOWN OF THE BLUE MOUNTAINS

SITE GRADING PLAN SOUTH

TATHAM ENGINEERING

DESIGN: JM	FILE: 121295	DWG: SG02
DRAWN: KH	DATE: APR 2022	
CHECK: JPA	SCALE: 1:250	

Drawing Name: 121295-Earthworks Analysis.dwg, Plotted: Sep 28, 2023