

Appendix C
Environmental Impact Study



Environmental Impact Study
Hasty Tract
Township of Springwater

Prepared for:
Township of Springwater

Prepared by:
Azimuth Environmental
Consulting, Inc.

October 2018

AEC 18-107



Environmental Assessments & Approvals

October 25, 2018

AEC 18-107

Township of Springwater
2231 Nursery Road
Minesing, ON
L9X 1A8

Attention: Robert Brindley
Chief Administrative Officer

Re: **Environmental Impact Study – Hasty Tract Class Environmental Assessment**

Dear Mr. Brindley:

Azimuth Environmental Consulting, Inc. is pleased to provide the Environmental Impact Study for the property described above. It is our understanding that an Environmental Impact Study is required to satisfy the requirements of a Ministry of Natural Resources and Forestry Class Environmental Assessment for the disposition of Ministry of Natural Resources and Forestry land to the Township of Springwater.

The report summarizes investigations undertaken in 2018 to characterize the natural environmental features within the property and surrounding lands. The assessment was designed to evaluate the features with potential to be considered Significant Natural Heritage Features based on applicable policy and/or legislation.

Mitigation measures have been recommended to avoid any potential impacts to the identified candidate Significant Natural Heritage Features. Assuming appropriate mitigation measures are taken, the proposed development is not expected to impact any identified features negatively. Thus, the proposed development would be considered consistent with the policies set out within the 2014 Provincial Policy Statement, and the regulations set out within Ontario's *Endangered Species Act, 2007*

Should you have any questions or wish to discuss our findings and recommendations in greater detail, please do not hesitate to contact us directly.



Yours truly,

AZIMUTH ENVIRONMENTAL CONSULTING, INC.

A handwritten signature in black ink that reads "Scasutt".

Stephanie Casutt, HBES
Terrestrial Ecologist

cc: Victoria Giangrande, Ainley Group

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1.0 INTRODUCTION

Azimuth Environmental Consulting, Inc. (Azimuth) was retained by the Township of Springwater (Township) to undertake an Environmental Impact Study (EIS) for consideration in a Ministry of Natural Resources and Forestry (MNRF) Resource Stewardship and Facility Developments Project Class Environmental Assessment (Category 'B' project) of the Hasty Track (Figure 1).

The objective of the EIS is to identify and assess the potential for impacts to candidate Significant Natural Heritage Features (SNHF) including potential Species at Risk (SAR) habitat within the property and adjacent lands. Information collected by the Azimuth ecologists during the 2018 field season and background information from the MNRF, Township, County of Simcoe (County), and the Nottawasaga Valley Conservation Authority (NVCA) was used to address the potential for impacts associated with the proposed development on the candidate SNHF in the area.

2.0 PLANNING CONTEXT

In the following sections we summarize the range of planning policies and regulations related to natural heritage that apply to the proposed development for the purpose of the EIS.

2.1 Provincial Planning Policy

Ontario's *Planning Act* (1990) requires that planning decisions shall be consistent with the Provincial Policy Statement, 2014 (PPS). Section 2.1 of the PPS specifies policy related to protection of natural heritage features and functions. According to 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 wetlands in the Canadian Shield north of Ecoregions 5E, 6E; and 7E;*
- b) *Significant woodlands in Ecoregions 6E; and 7E;*
- c) *Significant Valleylands in Ecoregions 6E; and 7E;*
- d) *Significant wildlife habitat;*
- e) *Significant areas of natural and scientific interest; and*



- f) *Coastal wetlands in Ecoregions 5E, 6E; and 7E that are not subject to policy 2.1.4(b)*

Sections 2.1.6 and 2.1.7 of the PPS also states 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.

As outlined in Section 2.1.8 of the PPS, no development or site alteration will be permitted on lands adjacent to the areas to the natural heritage features and areas identified in policies 2.1.4, 2.1.5 and 2.1.6 of the PPS unless the ecological function of the adjacent lands has been evaluated and it has been demonstrated there will be no negative impacts on the natural features and ecological functions.

Development, as defined in the PPS includes the creation of a new lot, a change in land use or the construction of buildings and structures, requiring approval under the *Planning Act*.

2.2 Endangered Species Act

Ontario's *Endangered Species Act, 2007* (ESA) provides regulatory protection to Endangered and Threatened species, prohibiting harassment, harm and/or killing of individuals and destruction of their habitats. Habitat is broadly characterized within the ESA as the area prescribed by a regulation as the habitat of the species or an area on which the species depends, directly or indirectly, to carry on its life processes including reproduction, rearing of young, hibernation, migration or feeding.

The various schedules of the ESA identify SAR in Ontario. These include species listed as Extirpated, Endangered, Threatened, and Special Concern. As noted above, only species listed as Endangered and Threatened receive protection through the ESA from harm and destruction to habitat on which they depend. Species designated as Special Concern may receive protection under the Significant Wildlife Habitat (SWH) provisions of the PPS.

2.3 Growth Plan for the Greater Golden Horseshoe

The Growth Plan for the Greater Golden Horseshoe (2017; Growth Plan) was implemented to promote intensification of development within areas of settlement within the Greater Golden Horseshoe area. The Growth Plan was recently updated to include Simcoe County within the plan area. Therefore, the property and proposed development must conform to the policies of the Growth Plan.



The property is within a defined settlement area and therefore, policies pertaining to the Natural Heritage System (Sections 4.2.3, and 4.2.4) do not apply to future development and/or land use change, with one exception:

4.2.2 Natural Heritage System

6. Beyond the Natural Heritage System, including within settlement areas, the municipality:

- a) will continue to protect any other natural heritage features in a manner consistent with the PPS; and*
- b) may continue to protect any other natural heritage system or identify new systems in a manner that is consistent with the PPS.*

Therefore, it is our interpretation that the proposed development will be in conformity with the Growth Plan provided that the various policies of the PPS are addressed.

2.4 Nottawasaga Valley Conservation Authority

The property falls within the jurisdiction of the NVCA. No portions of the property are mapped as regulated under Ontario Regulation (O. Reg.) 172/06 “Development, Interference with Wetlands and Alterations to Shorelines and Watercourses Regulation” (Appendix A). Therefore, a permit under O. Reg. 172/06 should not be required for future development and/or land use change.

2.5 County of Simcoe

The County of Simcoe Official Plan (OP) identifies the property as being within a ‘Settlement’ area and therefore only the lower tier policies would apply.

2.6 Township of Springwater

The property is depicted within the Township’s OP Schedule A-8 as ‘Environmental Protection II’ with ‘Environmental Connections/Potential Trails’ traversing the property in a north-south direction (Appendix B). Schedule B of the OP does not identify the property as ‘Natural Heritage (Environmental Protection) Category 2 lands (Appendix B). It is our interpretation, however, that the mapping shown in Schedule A-8 indicates that future development and land use change would be subject to Section 16 of the Township OP policies as follows:

Section 16 – Natural Heritage (Environmental Protection policies)

It is intended that Natural Heritage features and areas are to be protected, maintained, and enhanced and not subject to the impact of incompatible and inappropriate land uses



and development. In order to provide adequate protection to especially sensitive and significant environmental features two categories of natural heritage features and areas have been established; areas where “development will not be permitted” (Category 1); and areas where “development may be permitted if it can be demonstrated that it will not negatively impact” the natural features or functions of areas (Category 2). The categorization of environmental significance and sensitivity is determined to various degrees by provincial guide lines, the nature and detail of existing information, municipal criteria, and other agency approaches. It is acknowledged that the majority of the Natural Heritage System designation lines, shown on the various map schedules of this Plan, have been established through air photograph interpretation and as such may be subject to further interpretation through site specific field testing. [Mod. #43 - Jan.28/98] [OMB Order #2575] It is anticipated that the delineation of the Natural Heritage System will be periodically revised and updated from time to time over the duration of the planning period to take into account new information, provincial guidelines, and agency and municipal approaches.

16.2.1.1 Definitions

Natural Heritage (Environmental Protection) - Category 2 Lands may be characterized as areas of lesser environmental significance and/or sensitivity, although areas of high environmental quality may also be present. Category 2 Lands also presently contain lands/or waters previously altered or impacted (i.e. former agricultural or aggregate extractive areas) and developed areas which exhibit a variety and mix of existing uses.

(ii) Natural Heritage (Environmental Protection) – Category 2 Lands

Lands delineated as Natural Heritage (Environmental Protection) - Category 2 Lands on schedule “B” include, but are not limited to, those environmentally significant lands and/or waters of ecological sensitivity, such as those areas containing the following natural features:

- *Lands situated adjacent to provincially and locally significant wetlands and other Natural Heritage (Environmental Protection) - Category I Lands;*
- *Unique and significant biologically sensitive wildlife habitat; Forests and Wood lots;*
- *Natural connections through valley corridors or other linkages between core areas of the Natural Heritage System;*
- *Groundwater recharge and discharge, aquifer, and shoreline areas; and*
- *Natural Fish Habitat.*

The above noted components of the Natural Heritage System are for the most part shown in the areas delineated as Natural Heritage (Environmental Protection) Category 2



Lands on Schedule “B”. Policies contained within this section apply specifically to these areas, however, additional policies are contained in this section which pertain to areas such as aquifer recharge/discharge and headwater areas which have yet to be delineated.

3.0 STUDY APPROACH

A Terms of Reference for the EIS was established in consultation with the NVCA and MNRF (Appendix C). Azimuth undertook the following activities to complete this study:

- Obtained background information from the County of Simcoe, NVCA, MNRF, and Township related to the natural heritage features and wildlife species identified in the area including SAR in the nearby area;
- Evaluated vegetation communities using Ecological Land Classification (ELC) for Southern Ontario (Lee *et al.*, 1998) to vegetation type;
- Completed a habitat assessment for SAR which included:
 - Identification of prospective habitat for the Threatened or Endangered species with potential to occur in the area;
 - Identification of potential habitat for species of Special Concern with potential to occur in the area which could be considered significant wildlife habitat under the PPS;
- Completed the following field surveys:
 - Conducted one amphibian call survey and a general habitat functional assessment of the property and adjacent lands (May 1, 2018);
 - Conducted two vascular plant surveys (June 6 & September 5, 2018);
 - Conducted two dawn breeding bird surveys (June 6 & June 22, 2018);
 - Completed three nocturnal bird surveys (May 28, June 26, & June 27, 2018);
 - Completed Steps 1 & 2 of the MNRF *Technical Note on Species at Risk (SAR) Bats* (April 10, 2018);
- Recorded observations of wildlife occurrence and assessed wildlife habitat function of the property as outlined in the MNRF’s Ecoregion 6E Criterion Schedule (MNRF, 2015);
- Identified potential development constraints based on environmental features;
- Assessed the potential direct and indirect impacts of the proposed development on the identified candidate SNHF and functions located on and adjacent to the property; and
- Developed an avoidance/mitigation/restoration strategy to address potential negative environmental impacts.



3.1 Data Sources

A review of the following background data provided information on property characteristics, habitat, wildlife, rare species and communities of the property and adjacent lands:

- Aerial images (Google, VuMap);
- Atlas of the Breeding Birds of Ontario [website - <http://www.birdsontario.org/atlas/index.jsp>] (Bird Studies Canada, 2006);
- Township of Springwater Official Plan (2015) and maps;
- Simcoe County Interactive Map [website - <https://maps.simcoe.ca/PartnerWebApps/Clearview/?mode=advanced>);
- MNRF Natural Heritage Information Center [NHIC; website - <https://www.ontario.ca/page/make-natural-heritage-area-map>] (MNRF, 2016);
- MNRF's SARO list [website - <http://www.mnr.gov.on.ca/en/Business/Species/2ColumnSubPage/246809.html>];
- MNRF's Land Information Ontario [website - <https://www.ontario.ca/page/land-information-ontario>]; and
- Ontario Nature – Ontario Reptile and Amphibian Atlas [website - https://www.ontarionature.org/protect/species/reptiles_and_amphibians/index.php] (Ontario Nature, 2016).

3.2 Vegetation Community Mapping and Surveys

The ELC for Southern Ontario (Lee *et al.*, 1998) was used to classify vegetation community types.

3.3 Wildlife Surveys

3.3.1 General

During the course of the field surveys, lists of mammals potentially utilizing the property were compiled from direct observations and interpretations of signs (*i.e.*, tracks, scats, evidence of feeding). Candidate SWH functions were evaluated according to provincial criteria outlined in the Ecoregion 6E Criterion Schedule (MNRF, 2015) - discussed in further detail in Section 5.

3.3.2 Birds

Dawn breeding bird surveys (BBS) were conducted on June 6 and June 22, 2018, at the points outlined in Figure 2a based on a modified version of the Point Count methodology outlined in Appendix D of the Ontario Breeding Bird Atlas Guide for Participants (OBBA, 2001). Point counts (10 minute duration) were undertaken at set locations within the property and all bird species detected (seen, heard) were recorded at each point station. Breeding evidence was assessed based on the criteria of the OBBA (2001).



Nocturnal Birds

Based on the preliminary identification of potential habitat, species specific surveys for Eastern Whip-poor-will (Threatened) were carried out in June 2018 to determine if Eastern Whip-poor-will occurred within the property and/or adjacent lands. A modified version of Bird Studies Canada survey protocol for Eastern Whip-poor-will (Bird Studies Canada, 2014) was used for the purpose of this assessment. The survey protocol typically requires the surveyor to attend the property on a single night. This was modified to three nights to ensure compatibility with MNRF protocols currently in development. Surveys in 2018 were focused to a period within 5 days of the full moons on May 28, June 26, and June 27, 2018 at the points outlined in Figure 2a. Surveys began 30 minutes after sunset and the surveyor was required to survey each location for a total of 10 minutes.

On all surveyed nights, a known calling location was used as a control site in the area to establish if the species was actively calling locally under the weather conditions on the evenings surveyed.

3.3.3 Amphibians

A single site visit was conducted on May 1, 2018 to assess for the potential presence of suitable amphibian breeding habitat. No water features, wetland areas, vernal pools or other surface water was observed within the property throughout the various field surveys. Adjacent lands to the north of the property where mapped MNRF un-evaluated wetlands are present were observed as much as possible from the north property boundary. No indications of adjacent or connected wetlands were observed. A subsequent amphibian calling survey was completed on May 1, 2018 and no amphibians were heard or seen within the property and adjacent lands to the north. Given the lack of suitable features and calling amphibians within the property, additional surveys were not completed.

3.3.4 Bats

Preliminary assessment of the property indicated potential habitat for Endangered bat species due to the presence of mature forest conditions. Bat roosting data was collected for the entire property by Azimuth staff on April 10, 2018 following the methods set out in the *Technical Note on Bat Species at Risk* (MNRF, 2015) for identifying candidate bat maternity roosting habitat as follows. Data was subsequently analyzed as per the MNRF guidelines:



- Step 1 – Use ELC to determine the presence of:
 - Deciduous Forest (FOD)
 - Mixedwood Forest (FOM)
 - Coniferous Forest (FOC)
 - Deciduous Swamp (SWD)
 - Mixedwood Swamp (SWM)
 - Coniferous Swamp (SWC)
- Step 2 – Within the above noted appropriate vegetation communities, determine the density of snag (*e.g.* cavity, loose bark) trees ≥ 25 cm diameter breast height (DBH) within the forest site;
 - Select random plots across the represented area of the ELC unit;
 - Survey fixed area 12.6 m radius plots (equates to 0.05ha)
 - Measure the number of snag trees ≥ 25 cm DBH in each plot;
 - Use the formula πr^2 to determine the number of snag trees per hectare;
 - Survey a minimum of 10 plots for sites ≤ 10 ha and add another plot for each extra hectare up to a maximum of 35 plots;
 - Surveys should be conducted during the leaf-off period so view of snags is not obscured by foliage.
- If the snag tree density is ≥ 10 snag trees per hectare of trees ≥ 25 cm DBH, then the site is a candidate for maternity colony roosts.

3.4 Species at Risk

Azimuth conducted a SAR assessment for the property, where species with potential to occur in the overall planning area were assessed for their potential to occur within the property. This assessment focused on potential habitat features present on the property, based primarily on property and landscape-level patterns of vegetation communities, soil conditions, and hydrologic features. Some background information was obtained through the NHIC database, which records historic and/or recent documented occurrences of SAR to the accuracy of 1 km². In addition, Azimuth attended a meeting with the MNRF and the project team to request background information regarding SAR records relevant to the property.

Habitat requirements and designations (*i.e.*, Endangered, Threatened, or Special Concern) for all species with potential to occur in the area are reported in Table 1.



4.0 EXISTING CONDITIONS

4.1 Land Use

4.1.1 On-Site Land Use

The property, measured at approximately 19 ha, is located at the northwest corner of the junction of Bayfield Street North/Highway 26 and Snow Valley Road. The property is covered primarily by conifer plantation, which based on historical imagery was established prior to 1954 (Simcoe County Interactive Maps).

Various walking trails that are used by local residents are present throughout the property however mainly follow the rows of the plantation in a north south pattern. These trails are likely utilized by motorized vehicles (*i.e.*, ATV, snow machine).

4.1.2 Adjacent Land Use

Adjacent land use is varied and contains residential, commercial, industrial, and forested areas. Springwater Provincial Park is present to the north of the property and is part of a larger forest complex which contains the property. This area also appears to have been partly planted prior to 1954. Prior to 1954, this area was part of the Canadian Pacific (CP) Rail Station which extended to the south of the park and west of the property. Prior to the County of Simcoe acquiring this property in 1999 it was owned by CP Rail and formerly used for the extraction of sand and gravel to build rail beds. The existing condition is dry and degraded, consisting primarily of scattered non-native trees and shrubs (<https://www.simcoe.ca/restorationproject>). This property is currently referred to as the Museum Tract where forest and habitat rehabilitation efforts are being undertaken by the County.

4.2 Vegetation Communities

Dominant plant species associated with the vegetation communities are included in with the ELC descriptions below and illustrated in Figure 2a. None of the species is designated as provincially rare (*i.e.*, S Rank not 1, 2, 3 or SH) or as a SAR. A complete list of all vascular plants identified within each vegetation community is presented in Table 2. ELC communities include a variety of coniferous plantation sub-types undergoing ecological succession to deciduous forest:

1. CUP3-1 – Red Pine Coniferous Plantation

This community is composed of evenly-spaced planted mature Red Pines (*Pinus resinosa*) which form a continuous moderate- to high-density canopy. It is represented at the north and south ends of the study area. At the north end (CUP3-1a), a generally sparse but rich subcanopy of native deciduous trees is regenerating beneath the pines, including Red Oak (*Quercus rubra*), Red Maple



(*Acer rubrum*), Sugar Maple (*Acer saccharum*), American Beech (*Fagus grandifolia*), Large-toothed Aspen (*Populus grandidentata*) and Black Cherry (*Prunus serotina*), amid some scattered non-native Scotch Pine (*Pinus sylvestris*). A generally dense understory of Bracken Fern (*Pteridium aquilinum*), Wild Red Raspberry (*Rubus idaeus* ssp. *strigosus*) and Allegheny Blackberry (*Rubus allegheniensis*) is present, with a variable ground layer including species such as Wild Lily-of-the-Valley (*Maianthemum canadense*), Purple False Melic (grass) (*Schizachne purpurascens* ssp. *purpurascens*), Wall lettuce (*Mycelis muralis*), Western Poison Ivy (*Toxicodendron radicans* var. *rydbergii*), Wild Red Raspberry. At the south end (CUP3-1b), a generally denser canopy and subcanopy are present, with increased representation of Sugar Maple and Eastern White Pine (*Pinus strobus*) in the subcanopy. The understory is sparse, composed mainly of scattered Black Cherry, Choke Cherry (*Prunus virginiana*) and Sugar Maple, with a low- to moderate-density ground layer composed primarily of Western Poison Ivy, Wild Lily-of-the-valley, Wall Lettuce and Common Speedwell (*Veronica officinalis*). Edge habitat of the plantation contains a higher component of non-native invasive species, some of which are garden remnants indicative of previous homesteads/gardens.

2. CUP3-1/CUP3-6 – Red Pine Coniferous Plantation / European Larch Coniferous Plantation Complex

This community is composed of a dense canopy of evenly-spaced planted mature European Larch (*Larix decidua*), regularly interspersed with occasional Red Pines. The subcanopy is composed of a variety of regenerating native deciduous tree species including White Ash (*Fraxinus americana*), Red Maple, Sugar Maple, American Beech, Red Oak and Black Cherry, with some non-native Norway Spruce (*Picea abies*) interspersed. A moderately dense understory of White Ash, Bracken Fern, Black Cherry, Choke Cherry and Raspberries (*Rubus* spp.) is present, with a generally dense ground layer including Western Poison Ivy, Wild Lily-of-the-valley, Sedges (*Carex* spp.), Cherries (*Prunus* spp.) and scattered Wild Sarsaparilla (*Aralia nudicaulis*).

3. FOCM6-2 – Dry-Fresh Red Pine Naturalized Coniferous Plantation

This community is composed of a sparse, declining canopy of planted Red Pines with a few scattered Poplars (*Populus* spp.) and Spruces (*Picea* spp.) also reaching the canopy, being replaced by a dense, rich subcanopy of native deciduous trees. The subcanopy is composed primarily of Red Maple, Red Oak and Black Cherry, as well as some White Ash and Trembling Aspen (*Populus tremuloides*). A generally dense understory of Bracken Fern, Wild Red Raspberry and Allegheny Blackberry covers the site, underlain by a generally dense ground



layer including Wild Lily-of-the-valley, Wild Strawberry (*Fragaria virginiana*), Western Poison Ivy, Purple False Melic, Common Speedwell and many other species.

4. CUP3-1/CUP3-E – Red Pine Coniferous Plantation / Norway Spruce Coniferous Plantation Complex

This community is composed of a generally dense canopy of planted, tall, mature Norway Spruce intermixed with Red Pine. The subcanopy is generally sparse, composed of scattered Black Cherry, Spruces (*Picea* spp.), Red Oak, Red Maple and American Beech. A moderately sparse but variable understory is composed of Bracken Fern, Wild Red Raspberry and Choke Cherry, and the generally dense ground layer includes species such as Western Poison Ivy, Purple False Melic, Wild Lily-of-the-valley and Wall Lettuce.

5. FOCM6-3 – Dry-Fresh Scotch Pine Naturalized Coniferous Plantation

This community is composed of a sparse, declining canopy of planted Scotch Pines, with a few scattered Norway Spruce present. A dense, rich subcanopy of native trees is replacing the plantation pines, including species such as Red Maple, Red Oak, American Beech and Eastern White Pine. A moderately sparse but variable understory of Ash (*Fraxinus* spp.), Cherries (*Prunus* spp.), American Beech and Maple-leaved Viburnum (*Viburnum acerifolium*) is present, underlain by a moderately dense ground layer composed of Western Poison Ivy, Wild Lily-of-the-valley, Bracken Fern and a variety of other species.

6. FOCM6 / FOMM2-3 – Naturalized Coniferous Plantation / Dry-Fresh White Pine – Hardwood Mixed Forest

This community contains only a few, very sparse remnants of the original planted coniferous plantation in its canopy, which was composed of Jack Pine (*Pinus banksiana*), many of which have now fallen. A dense subcanopy/new canopy of primarily native tree species has regenerated underneath, including numerous young pines of a distinctly different age class from those planted nearby. This community is on the verge of forest classification, with the new canopy composed of Red Maple, American Beech, Red Oak and Eastern White Pine, with a few scattered Spruces (*Picea* spp.) present. A sparse understory of Cherries (*Prunus* spp.), Maples (*Acer* spp.) and American Beech is present, with a dense ground layer composed of Western Poison Ivy, Wild Lily-of-the-valley, Bracken Fern, Wall Lettuce and a variety of other species.



7. CUP3-2 – White Pine Coniferous Plantation

This community is composed of a canopy of dense, evenly spaced, planted mature Eastern White Pine. A generally dense subcanopy of native deciduous trees is present under the coniferous canopy, composed largely of Red Maple, American Beech and Red Oak, as well as some White Ash and Eastern White Pine. A generally sparse understory of American Beech, Eastern White Pine, Maples (*Acer* spp.) and Maple-leaved Viburnum is present, underlain by a moderately dense ground layer composed largely of Western Poison Ivy, interspersed with Canada Fly Honeysuckle, Bracken Fern, Wall Lettuce.

4.3 Plants

Table 2 provides a list of vascular plants by vegetation community. None of the plant species are SAR or designated provincially rare. None of the provincially rare plant species reported for the general area within NHIC Grid Square 17PK0021 that encompasses the property were observed: *i.e.*, no observation of Houghton's Flatsedge (*Cyperus houghtonii*) S3 (Appendix D).

No Butternut (*Juglans cinerea*) trees were observed on or adjacent (*i.e.*, within 50 metres) to the property.

4.4 Wildlife

4.4.1 Birds

A total of 16 bird species were detected during the course of the dawn BBS, all of which have shown possible or probable breeding evidence within the property (Table 3). Four additional species (Chipping Sparrow, Blackburnian Warbler, Ruffed Grouse and Hermit Thrush) were observed incidentally throughout the course of other field work, with one species (Ruffed Grouse) demonstrating confirmed breeding evidence. One species identified within the property is considered a SAR – Eastern Wood-pewee (Special Concern) observed at the survey points 5 and 6 as illustrated in Figure 2a. Approximate territory location of this individual is illustrated in Figure 2b.

Nocturnal Birds

Nocturnal bird surveys indicated the presence of Eastern Whip-poor-will within adjacent lands to the west of the property. Two calling males were detected during the surveys. The approximate centre of territories inferred for these individuals, as well as the corresponding habitat categorization as the MNRF General Habitat Description for Eastern Whip-poor-will is illustrated on Figure 2b. Common Nighthawk (Special Concern) was not observed within the property and/or adjacent lands.



5.0 CANDIDATE SIGNIFICANT NATURAL HERITAGE FEATURES

In the following sections we summarize the range of SNHF attributable to the property based on existing designations/delineations by agencies and as revealed through the application of provincial guidelines for identification of significant natural heritage features and functions – including SAR (*i.e.*, Natural Heritage Reference Manual [NHRM], Significant Wildlife Habitat Ecoregion 6E Criterion Schedule).

5.1 Candidate Significant Woodland

The property is part of a contiguous woodland feature which extends beyond the property limits. This contiguous woodland has been measured at approximately 102 ha (Appendix E).

The significance of the contiguous woodland was assessed according to criteria defined by the NHRM (MNR, 2010). The woodland assessment is included in Table 4 of this report. As there is approximately 40.7% forest cover within the Willow Creek Subwatershed in which the property is located (NVCA, 2013), a woodland must be at least 50 ha in size to be considered significant. For the purposes of this assessment, the woodland located within the property, as it is continuous with approximately 102 ha of woodland cover will be considered to be candidate Significant Woodland on the basis of overall size, amount of woodland interior habitat and other factors (Table 4).

5.2 Potential and Confirmed Habitat of Endangered and Threatened Species

Potential and confirmed habitat for species listed as Threatened or Endangered (ESA, 2007) was identified within and adjacent to the property based on our field studies as follows:

- Confirmed Nesting Habitat (adjacent lands only) – Eastern Whip-poor-will
- Potential Summer Roosting Habitat – Endangered Bat Species

5.2.1 Eastern Whip-poor-will

Eastern Whip-poor-will is a bird species which is typically associated with areas of mixed open forest. Potential habitat areas for Eastern Whip-poor-will including nesting and foraging were identified within the property and adjacent lands.

Two individuals were recorded within adjacent lands as depicted in Figure 2b.

The General Habitat Description Guidance document produced by the MNRF for the Eastern Whip-poor-will describes habitat as follows:



- Category 1 habitat is considered to be a confirmed nesting area and an area within 20 meters of that site.
- Category 2 habitat is the area between 20m and 170m from the nest or the centre of an approximated defended territory.
- Category 3 habitat is considered to be suitable habitat between 170m and 500 m of the nest or the centre of an approximated defended territory.

5.2.2 Endangered Bat Species

Little Brown Myotis, Northern Myotis, and Tri-colored bat use a wide variety of habitats for summer roosting including rock crevices, buildings, bridges, caves, mines, and large snag trees (>25 cm diameter at breast height) in the early stages of decay (MNRF 2015, COSEWIC 2013). The property is generally characterized by a mature conifer plantation containing large trees which may provide suitable roosting habitat for these species.

5.3 Candidate Significant Wildlife Habitat

There appear to be no designated SWH functions associated with the property and adjacent lands. Candidate SWH was investigated where applicable as outlined within the Significant Wildlife Habitat Technical Guide (MNRF, 2000), Ecoregion 6E Criterion Schedules (MNRF 2015) and summarized in Tables 5.1 – 5.6. The following presents a summary of the Candidate SWH associated with the property.

5.3.1 Habitat for Special Concern or Rare Species

Habitat for Special Concern species is attributable to the property and adjacent lands as candidate SWH in regard to Eastern Wood-pewee, a forest breeding bird designated Special Concern.

Eastern Wood-pewee

This species was identified during the course of the dawn breeding bird surveys, within the CUP3-1 forest community (survey points 5 and 6). Probable breeding of this species was determined based on the criteria of the OBBA (2001).

5.4 Candidate Significant Natural Heritage Features Summary

Based on the above evaluation, the following confirmed and/or candidate SNHF occur on the property and/or adjacent lands, and thus, are considered within the Impact Assessment of this report:

- Candidate Significant Woodland
- Potential and Confirmed Habitat of Endangered and Threatened Species
 - Eastern Whip-poor-will
 - Endangered Bat Species



- Candidate Significant Wildlife Habitat
 - Special Concern and Rare Wildlife Species – Eastern Wood-pewee

6.0 PROPOSED DEVELOPMENT

Currently, only a conceptual site plan is available however it is anticipated that the entire property will be developed in a phased approach. Municipal facilities including a fire hall and a recreational centre and park are proposed as part of this land acquisition (Appendix F). It is our understanding that the development would be completed in phases with the southern portion of the property development as part of Phase 1. Development within the northwest portion of the property has not been determined however it is anticipated that development will occur within this area as part of Phase 2.

7.0 IMPACT ASSESSMENT

In the following sections we assess the potential for negative ecological impact to the identified candidate SNHF. In Section 8.0 we provide recommendations for mitigating impacts to these features/functions and environmental features.

7.1 Candidate Significant Woodland

For the purpose of this assessment, impacts to this feature will be evaluated based on the Provincial criteria for evaluating Significant Woodlands outlined within the NHRM (MNR, 2010).

Development and site alteration is not permitted within Significant Woodland and adjacent lands unless the ecological function of the features has been evaluated and it has been demonstrated that there will be no negative impacts on the natural features or on their ecological functions. No negative impact is defined as “degradation that threatens the health and integrity of the natural features or ecological functions for which the area is identified due to single, multiple or successive development or site alteration activities”. The NHRM (MNR, 2010) defines ecological integrity as “the condition of an ecosystem in which (a) the structure, composition and function are unimpaired by stresses from human activity, (b) natural ecological processes are intact and self-sustaining, and (c) ecosystem evolution is occurring naturally and that ecological integrity includes hydrological integrity.

Impacts are considered to those functions for which the woodland met the criteria outlined within the NHRM (MNR, 2010).



7.1.1 Woodland Size

The woodland habitat within the property represents approximately 19 ha out of approximately 102 ha of contiguous forest habitat present within the broader landscape (Appendix E). The property therefore corresponds to 18% of the contiguous feature.

The proposed development will remove the entire 19 ha woodland which would reduce the contiguous woodland feature to approximately 83 ha. The retained woodland feature will maintain a size which will still be considered to be significant as per the size criteria provided within the NHRM (*i.e.*, 50 ha or more).

Impacts related to the removal of the woodland habitat within the property would be negligible as the contiguous woodland feature will continue to provide the ecological functions associated with the feature, including provision of wildlife habitat and interior habitat. Therefore, the ecological function of the Significant Woodland habitat associated with the size is expected to remain intact should future development propose entire removal.

No negative ecological impacts to the Significant Woodland as it relates to this function are expected to result from the proposed development.

7.1.2 Woodland Interior

Currently, the contiguous woodland feature contains approximately 54 ha of interior habitat including 10.3 ha within the property. The loss of 19 ha of woodland as a result of the proposed development would reduce the amount of interior habitat to approximately 39 ha (*i.e.*, 28% loss of interior habitat). Approximately 72% of the current interior habitat will remain post-development which will continue to provide function attributable to interior forest habitat such as specialized wildlife habitat.

Therefore, the ecological function of the Significant Woodland habitat associated with interior habitat is expected to remain within adjacent lands should future development propose entire removal.

7.2 Potential and Confirmed Habitat of Endangered and Threatened Species

7.2.1 Eastern Whip-poor-will

Two calling males were documented within adjacent lands as depicted in Figure 2a. Habitat categorization as per the General Habitat Description Guidance document produced by the MNRF indicates that Category 3 habitat is present within the property limits.



Category 3 habitat is considered to have a high level of tolerance to alteration and primarily provides foraging habitat for the nesting individual. Furthermore, Category 3 habitat may incorporate larger forest tracts that support additional foraging opportunities. Although Eastern Whip-poor-will is seldom found greater than 500 metres from a nest, it can be expected that these two individuals may use the contiguous woodland feature which includes the property. The property represents 3% of the overall Category 3 habitat for the individual present closest to the property (Figure 2b).

Given the overall size of the contiguous woodland feature and the limited amount of Category 3 habitat within the property limits, there is no expectation that the loss of that area will be considered contravention of Section 10 (habitat) of the ESA. Post-development, this species will continue to utilize the retained lands adjacent to the property. Given that no individuals were observed within the property, there is no expectation that the proposed works will result in contravention of Section 9 (kill, harm, harass) of the ESA.

7.2.2 Endangered Bat Species

As previously discussed, the property is covered for the most part by conifer plantation containing large trees which may provide suitable roosting habitat for Endangered bat species.

Generally, suitable habitat for maternity roosting habitat is characterized by mature hardwood forest communities as these have a higher potential to contain a diversity of suitable features such as cracks, cavities, and peeling bark. This type of habitat is present in abundance within the overall planning area (*i.e.*, Township of Springwater). Conifer vegetation communities, particularly plantations are not expected to contain an abundance of suitable features which would support an Endangered bat species maternity colony.

There is no expectation that the removal of the forest cover within the property would have a negative effect upon Endangered bat species and their habitat based on the overall availability of suitable habitat present within adjacent lands and the lack of appropriate features within the property. Assuming recommended mitigation measures are followed as discussed in Section 8.0 below, there is no expectation that contraventions of the ESA will result from the proposed development.

7.3 Candidate Significant Wildlife Habitat

7.3.1 Special Concern and Rare Wildlife Species – Eastern Wood-pewee

Sections 2.1.5 d and 2.1.8 of the PPS specify that development and site alteration may be permitted within or adjacent to SWH if it is demonstrated that the SWH function(s) of



concern is/are not negatively impacted (*i.e.*, ecological functions for which the area is identified are not degraded by stress factors arising from human activity to the point that the health and integrity of the ecological functions are threatened due to single, multiple or successive development or site alteration activities). Therefore, the development proposed for the property would constitute a negative impact if there is an expectation that Eastern Wood-pewee would abandon the adjacent lands as breeding habitat or be reduced to significantly lower levels of abundance (*i.e.*, beyond fluctuations deemed part of natural ecosystem dynamics).

The results of field studies indicated that the CUP3-1 forest community within the property (Figure 2a) functions as Habitat for Special Concern Wildlife in regard to Eastern Wood-pewee. The Conceptual Site Plan shows entire removals of this community within the property limits.

Based on the field data, it appears that only a single probable breeding pair occurred on the property within community CUP3-1. As per the COSEWIC Assessment and Status Report on the Eastern Wood-pewee (COSEWIC, 2012), territory size of the species averages 1.76 ± 0.24 ha.

The CUP3-1 community extends beyond the property limits to the west, north, and south. Based on the average territory size of the species, it is reasonable to expect that the lands retained adjacent to the property will continue to provide suitable habitat for this species to carry out various life processes including breeding. Although the breeding habitat for Eastern Wood-pewee will be lost within the property, the proposed development will not result in the species abandoning adjacent lands as breeding habitat or be reduced to significantly lower levels of abundance. This species is generally common throughout the planning landscape (*i.e.*, Simcoe County) and will continue to utilize the natural areas surrounding the property post-development.

Proposed works are expected to have no negative effect upon habitat for Eastern Wood-pewee provided that conformance is demonstrated for environmental considerations and mitigation described in Section 8 below.

8.0 ENVIRONMENTAL CONSIDERATION AND MITIGATION

8.1 Species at Risk

It should be noted that the absence of a protected species within the property does not indicate that they will never occur within the area. Given the dynamic character of the natural environment, there is a constant variation in habitat use. Care should be taken in the interpretation of presence of species of concern including those listed under the ESA.



Changes to policy, or the natural environment, could result in shifts, removal, or addition of new areas to the list of areas currently considered candidate SNHF. This report is intended as a point in time assessment of the potential to impact SAR; not to provide long term ‘clearance’ for SAR. While there is no expectation that the assessment should change significantly, it is the responsibility of the proponent to ensure that they are not in contravention of the ESA at the time that site works are undertaken. A review of the assessment provided in this report by a qualified person should be sufficient to provide appropriate advice at the time of the onset of future site works.

If SAR are identified during on-site work, all works should cease and MNRF Midhurst District (Phone # (705) 725-7500) should be contacted for guidance.

8.1.1 Endangered Bat Species

Future construction activities involving the removal of trees (particularly large trees >25 cm diameter at breast height in the early stages of decay) should be restricted from occurring between the beginning of April to the end of October to avoid impacting potential bat roosting habitat

8.2 Isolation of Work Area

In advance of any vegetation clearing or earth works (*i.e.*, clearing or grubbing) the development limits approved in the proposed Draft Site Plan should be established in proximity to natural heritage features to be protected (*i.e.*, adjacent lands). A temporary fence (*i.e.*, snow fence, or sediment fence) should be erected along the surveyed limits to prevent inadvertent encroachment into these areas to be protected. This fence should be kept intact throughout the entire construction.

8.3 Retained Vegetation

Tree protection measures should be implemented prior to commencement of construction activity to ensure tree resources designated for retention within adjacent lands are not impacted by the development. Retainable trees should be protected through the installation of fencing or a comparable barrier along the drip line of the retainable trees. No development activities (material and equipment storage, grading, equipment activity, *etc.*) are permitted outside of the identified development limit. Installation and maintenance of silt fencing around the perimeter of the development limits is required and should be monitored for the duration of construction activities to ensure that there is no sediment migration off-site.



8.4 Migratory Birds

Construction activities involving the removal of vegetation should be restricted from occurring during the bird breeding season. Migratory birds, nests, and eggs are protected by the *Migratory Birds Convention Act*, 1994 and the *Fish and Wildlife Conservation Act*, 1997. Environment Canada outlines dates when activities in any region have potential to impact nests at the Environment Canada Website (http://www.ec.gc.ca/paom-itmb/default.asp?lang=En&n=4F39A78F-1#_03)

In zones C2 and C3, where the property is located, vegetation clearing should be avoided between April 1st and August 30th of any given year.

9.0 CONCLUSIONS

Ultimately, considering the site conditions and our understanding of the proposed development, the potential impacts to candidate SNHF associated with this project are minimal and mitigable. Provided the mitigation measures recommended in this report are undertaken accordingly, the proposed development will result in a development which is consistent with the policies set out within the Provincial Policy Statement, 2014 and the Township of Springwater Official Plan. Further, it will be compliant with the regulations set out within Ontario's ESA provided the recommendations are adhered to.

10.0 REFERENCES

Cadman, M., D. Sutherland, G. Beck, D. Lepage and A. Couturier. 2007. Atlas of the Breeding Birds of Ontario 2001-2005. Bird Studies Canada, Environment Canada, Ontario Field Ornithologists, Ontario Ministry of Natural Resources, and Ontario Nature. Toronto. 706 pp. Available: <http://www.birdsontario.org/atlas/index.jsp>

COSEWIC. 2012. COSEWIC assessment and status report on the Eastern Wood-pewee *Contopus virens* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. x + 39 pp.

COSEWIC. 2013. COSEWIC assessment and update status report on the Little Brown Myotis *Myotis lucifugus*, Northern Myotis *Myotis septentrionalis* and Tri-colored Bat *Perimyotis subflavus* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. xxiv + 93 pp.

Dobbyn, J. 1994. Atlas of the Mammals of Ontario.

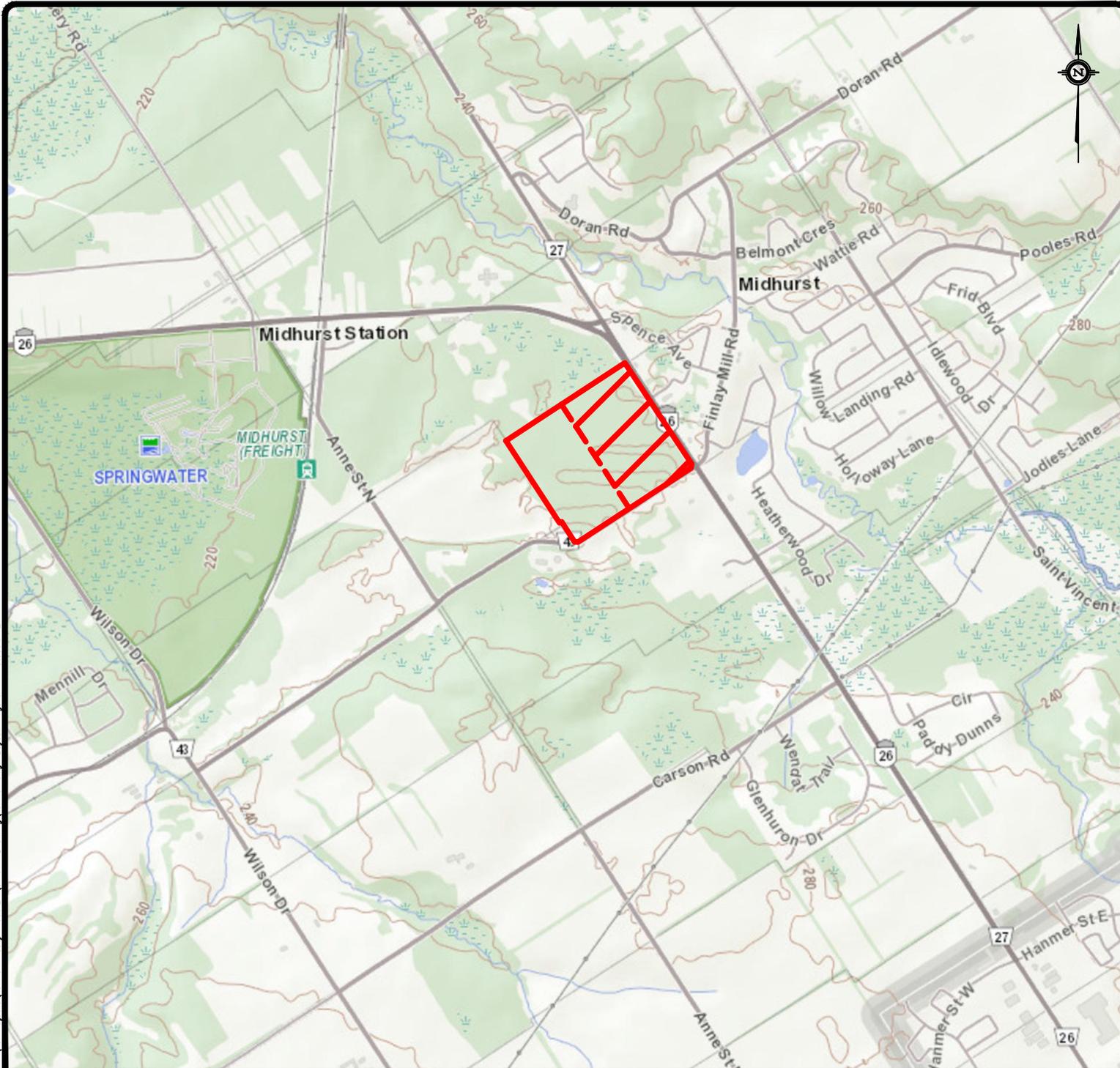


- Endangered Species Act. 2007. Available: http://www.elaws.gov.on.ca/html/statutes/english/elaws_statutes_07e06_e.htm
- Government of Canada. 2009. Species at Risk List. Available at: http://www.registrelep-sararegistry.gc.ca/sar/index/default_e.cfm
- Lee, H.T., W.D. Bakowsky, J. Riley, J. Bowles, M. Puddister, P. Uhlig and S. McMurray. 1998. Ecological Land Classification for Southern Ontario. First Approximation and its Application. Ontario Ministry of Natural Resources. Southcentral Science Section, Science Development and Transfer Branch. SCSS Field Guide FG-02.
- Migratory Birds Convention Act. 1994. Available: <http://laws-lois.justice.gc.ca/eng/acts/m-7.01/>
- Ministry of Municipal Affairs and Housing (MMAH). 2014. Provincial Policy Statement. 56pp. Available: <http://www.mah.gov.on.ca/Page215.aspx>
- Ministry of Natural Resources and Forestry (MNRF). 2015. Technical Note Species at Risk Bats. Regional operations Division.
- Ministry of Natural Resources (MNR). 2010. Natural Heritage Reference Manual for the Natural Heritage Policies of the Provincial Policy Statement, 2005. Available: <https://www.ontario.ca/document/natural-heritage-reference-manual>
- Ministry of Natural Resources (MNR). 2000. Significant Wildlife Habitat Technical Guide. Available: <https://www.ontario.ca/document/guide-significant-wildlife-habitat>
- Ministry of Natural Resources and Forestry (MNRF). 2015. Significant Wildlife Habitat Criteria Schedules For Ecoregion 6E. <https://dr6j45jk9xcmk.cloudfront.net/documents/4775/schedule-6e-jan-2015-access-ver-final-s.pdf>
- Ministry of Natural Resources and Forestry (MNRF). 2018. Natural Heritage Information Centre (NHIC) Make-A-Map: Natural Heritage Areas application: <https://www.ontario.ca/page/make-natural-heritage-area-map>
- Nottawasaga Valley Conservation Authority. 2013. Willow Creek 2013 Subwatershed Health Check. Available:



<https://www.nvca.on.ca/Shared%20Documents/2013%20Willow%20Creek%20S%20WHC.pdf>

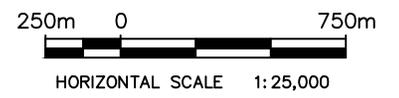
Township of Springwater. 2015. Official Plan



LEGEND:
 ———— Approx. Property Boundary
 ▨▨▨▨ Proposed Area for Development



REG MAP

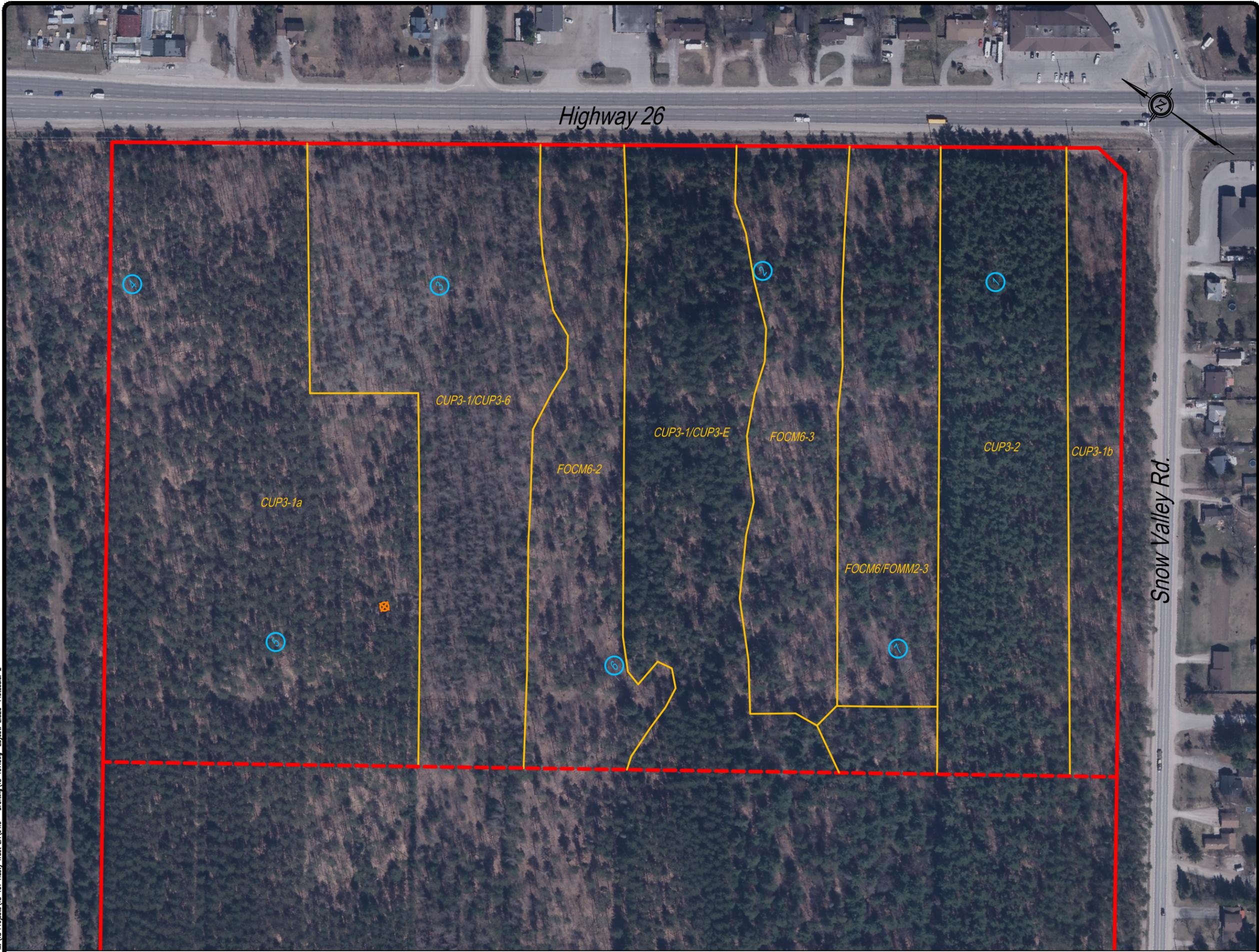


Study Area Location

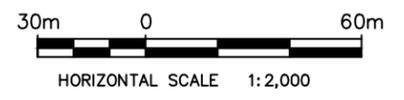
Hasty Tract EA,
 Midhurst, ON

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| DATE ISSUED: April 2018 | Figure No. |
| CREATED BY: JLM | |
| PROJECT NO.: 18-107 | 1 |
| REFERENCE: MNR | |

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- LEGEND:**
- Approx. Property Boundary
 - - - Limit of Study Area
 - ◆ Approx. Eastern Wood Pewee Territory (deciduous elements)
 - ⊕ Bird Point Count Station
 - Vegetation Communities
- CUP3-1 Red Pine Coniferous Plantation
 - CUP3-1 Red Pine Coniferous Plantation/European
 - CUP3-2 White Pine Coniferous Plantation
 - CUP3-6 Larch Coniferous Plantation Complex
 - CUP3-E Norway Spruce Plantation Complex
 - FOCM6 Naturalized Coniferous Plantation
 - FOCM6-2 Dry-Fresh Red Pine Naturalized Coniferous Plantation
 - FOCM6-3 Dry-Fresh Scotch Pine Naturalized Coniferous Plantation
 - FOMM2-3 Dry-Fresh White Pine-Hardwood Mixed Forest

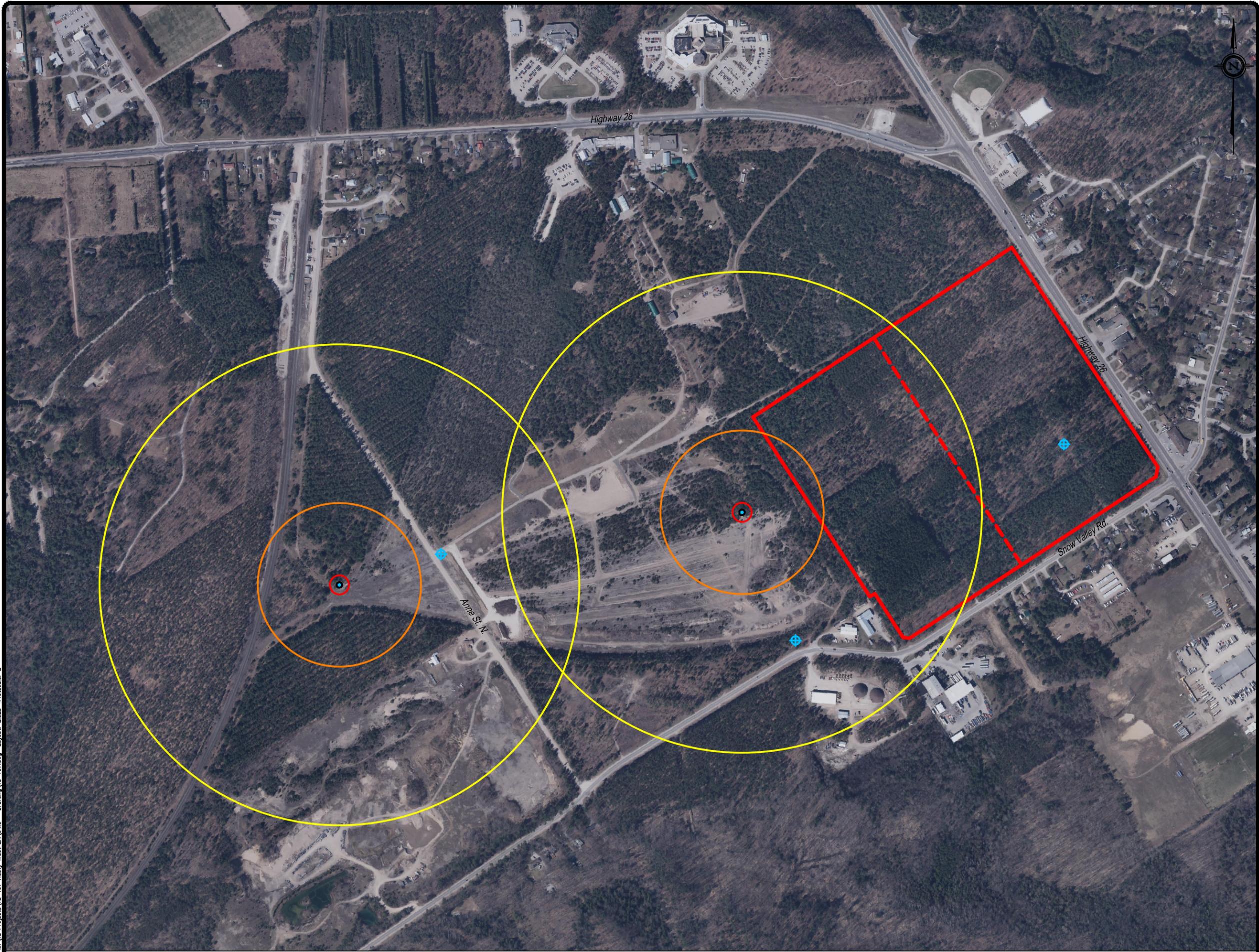


Environmental Features

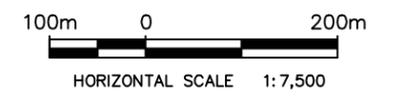
Hasty Tract EA,
Midhurst, ON

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| DATE ISSUED: | April 2018 | Figure No. |
| CREATED BY: | JLM | 2a |
| PROJECT NO.: | 18-107 | |
| REFERENCE: | Simcoe County Maps | |

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- LEGEND:**
- Approx. Property Boundary
 - - - Limit of Study Area
 - ◆ Survey Locations
 - Habitat for Eastern Whip-poor-will
 - Approx. Centre of Territory for Eastern Whip-poor-will
 - Category 1 Habitat
 - Category 2 Habitat
 - Category 3 Habitat



Eastern Whip-poor-will Habitat

Hasty Tract EA,
Midhurst, ON

| | | |
|--------------|--------------------|------------|
| DATE ISSUED: | April 2018 | Figure No. |
| CREATED BY: | JLM | 2b |
| PROJECT NO.: | 18-107 | |
| REFERENCE: | Simcoe County Maps | |

Plotted by: MCCARTNEY on August 14, 2018 at 1:22pm
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Table 1: Species at Risk Habitat Assessment

AEC18-107 hasty Tract EIS

| Common Name | Species Name | ESA | SARA | Key Habitats Used By Species ¹ | Assessment |
|-------------------|---------------------------------|-----|-----------|---|--|
| American Ginseng | <i>Panax quinquefolius</i> | END | END | Broadly speaking, this species is associated with hardwood deciduous vegetation units ESA Protection: Species and regulated habitat protection | Forested areas of the property represent low-quality potential habitat for this species. Surveys did not document any evidence for this species on the property. |
| Bald Eagle | <i>Haliaeetus leucocephalus</i> | SC | No status | Nests are typically found near the shoreline of lakes or large rivers, often on forested islands (Cadman <i>et al.</i> , 2007). ESA Protection: N/A | Vegetation communities or other natural features of the property are not representative of key habitat features required by this species. |
| Bank Swallow | <i>Riparia riparia</i> | THR | No status | Nests in burrows excavated in natural and human-made settings with vertical sand and silt faces. Commonly found in sand or gravel pits, road cuts, lakeshore bluffs, and along riverbanks (COSEWIC, 2013). ESA Protection: Species and general habitat protection | Vegetation communities or other natural features of the property are not representative of key habitat features required by this species. Surveys did not document any evidence of this species on the property. |
| Barn Swallow | <i>Hirundo rustica</i> | THR | No status | Ledges and walls of man-made structures such as buildings, barns, boathouses, garages, culverts and bridges. Also nest in caves, holes, crevices and cliff ledges (COSEWIC, 2011). ESA Protection: Species and general habitat protection | Areas of the property are not representative of key habitat for this species. Breeding bird surveys and non-targeted site visits have not documented the presence of this species on the property. |
| Black Tern | <i>Chlidonias niger</i> | SC | No status | Colonial nesters typically found within marshes. Its preferred nesting habitat is a hemi-marsh (<i>i.e.</i> a wetland with 50:50 open water and emergent vegetation). Nests are usually built on an upturned cattail root, floating vegetation mat or patch of mud (Cadman <i>et al.</i> , 2007). ESA Protection: N/A | Vegetation communities or other natural features of the property are not representative of key habitat features required by this species. |
| Blanding's Turtle | <i>Emydoidea blandingii</i> | THR | THR | Blanding's Turtles are a primarily aquatic species that prefer wetland habitats, lakes, ponds, slow-moving streams, etc., however they may utilize upland areas to search for suitable basking and nesting sites. In general, preferred wetland sites are eutrophic and characterized by clear, shallow water, with organic substrates and high density of aquatic vegetation (COSEWIC, 2005). ESA Protection: Species and general habitat protection | Vegetation communities or other natural features of the property are not representative of key habitat features required by this species. |
| Bobolink | <i>Dolichonyx oryzivorus</i> | THR | No Status | Nests primarily in forage crops (<i>e.g.</i> hayfields and pastures) dominated by a variety of species such as clover, Timothy, Kentucky Bluegrass, tall grass, and broadleaved plants. Also occurs in wet prairie, graminoid peatlands, and abandoned fields dominated by tall grasses. Does not generally occupy fields of row crops (<i>e.g.</i> corn, soybeans, wheat) or short-grass prairie. Sensitive to habitat size and has lower reproductive success in small habitat fragments (COSEWIC, 2010). ESA Protection: Species and general habitat protection | Vegetation communities or other natural features of the property are not representative of key habitat features required by this species. |

Table 1: Species at Risk Habitat Assessment

AEC18-107 hasty Tract EIS

| Common Name | Species Name | ESA | SARA | Key Habitats Used By Species ¹ | Assessment |
|---|----------------------------------|-----|------|---|--|
| Broad Beech Fern | <i>Phygodteris hexagonoptera</i> | SC | SC | Rich soils in deciduous forests, such as Maple-Beech forests (MNRF, 2016). ESA Protection: N/A | Forested areas of the property represent low-quality potential habitat for this species. Vegetation surveys did not document any evidence for this species on the property. |
| Butternut | <i>Juglans cinerea</i> | END | END | Commonly found in riparian habitats, but is also found in rich, moist, well-drained loams, and well-drained gravels. Butternut is intolerant of shade (COSEWIC, 2003). ESA Protection: Species and general habitat protection | Forested and open areas of the property represent potential habitat for this species. Vegetation surveys did not document any evidence for this species on the property. |
| Cerulean Warbler | <i>Dendroica cerulea</i> | THR | SC | Associated with large tracts of mature deciduous forest with tall trees and an open understory. Found in both wet bottomland forests and upland areas (COSEWIC, 2010). ESA Protection: Species and general habitat protection | Forested areas of the property are not representative of key habitat for this species. Breeding bird surveys and non-targeted site visits have not documented the presence of this species on the property. |
| Chimney Swift | <i>Chaetura pelagica</i> | THR | THR | Nests primarily in chimneys though some populations (<i>i.e.</i> in rural northern areas) may nest in cavity trees (COSEWIC, 2007). Recent changes in chimney design may be a significant factor in recent declines in numbers (Cadman <i>et al.</i> , 2007). ESA Protection: Species and general habitat protection | Structures with suitable chimneys (<i>i.e.</i> , non-capped) are not present within the property. Adjacent lands are dominated by industrial development and do not contain suitable chimneys. Breeding bird surveys and non-targeted site visits have not documented the presence of this species on the property. |
| Common Five-lined Skink (Southern Shield population) | <i>Plestiodon fasciatus</i> | SC | SC | Southern Shield population -rocky outcrops embedded in a matrix of coniferous and deciduous forest, and individuals in these populations seek refuge under rocks overlaid on open bedrock (COSEWIC, 2007). ESA Protection: N/A | Vegetation communities or other natural features of the property are not representative of key habitat features required by this species. |
| Common Nighthawk | <i>Chordeiles minor</i> | SC | THR | Open habitats including sand dunes, beaches recently logged/burned over areas, forest clearings, short grass prairies, pastures, open forests, bogs, marshes, lakeshores, gravel roads, mine tailings, quarries, and other open relatively clear areas (COSEWIC, 2007). ESA Protection: N/A | Vegetation communities or other natural features of the property are not representative of key habitat features required by this species. Adjacent lands may provide suitable habitat for this species however nocturnal bird surveys did not detected this species. |
| Eastern Hog-nosed Snake | <i>Heterodon platirhinos</i> | THR | THR | Habitat features include: well-drained soil; loose or sandy soil; open vegetative cover; brushland or forest edge; proximity to water; and climatic conditions typical of the eastern deciduous forest biome. In the Georgian Bay region, open grass, sand, human-impacted and forest habitats over rock, wetland, and aquatic habitats are preferable (COSEWIC, 2007). ESA Protection: Species and general habitat protection | Vegetation communities or other natural features of the property are not representative of key habitat features required by this species. |

Table 1: Species at Risk Habitat Assessment

AEC18-107 hasty Tract EIS

| Common Name | Species Name | ESA | SARA | Key Habitats Used By Species ¹ | Assessment |
|--------------------------------|-------------------------------|-----|--------------------------------------|---|--|
| Eastern Loggerhead Shrike | <i>Lanius ludovicianus</i> | END | END (<i>mirgrans</i> subspecies) | Breeding habitat characterized by open areas dominated by grasses and/or forbs, interspersed with scattered shrubs or small trees and bare ground. Suitable habitat includes pasture, old fields, prairie, savannah, pinyon-juniper woodland, shrub-steppe and alvar (COSEWIC, 2014). ESA Protection: Species and general habitat protection | Vegetation communities or other natural features of the property are not representative of key habitat features required by this species. |
| Eastern Meadowlark | <i>Sturnella magna</i> | THR | No status | Most common in grassland, pastures, savannahs, as well as anthropogenic grassland habitats, including hayfields, weedy meadows, young orchards, golf courses, restored surface mines, etc. Occasionally nest in row crop fields such as corn and soybean, but there are considered low-quality habitat. Large tracts of grassland are preferred over smaller fragments and the minimum area required is estimated at 5ha (COSEWIC, 2011). ESA Protection: Species and general habitat protection | Vegetation communities or other natural features of the property are not representative of key habitat features required by this species. |
| Eastern Musk Turtle | <i>Sternotherus oderatus</i> | SC | THR | Inhabit littoral zones of waterways such as rivers, lakes, bays, streams, ponds, canals, and swamps with slow to no current and soft bottoms. During the active season they prefer shallow water (<2m) with abundant vegetation. Most are found close to shore and do not venture onto land except to nest or access adjacent wetlands (COSEWIC, 2012). ESA Protection: N/A | Vegetation communities or other natural features of the property are not representative of key habitat features required by this species. |
| Eastern Prairie Fringed-orchid | <i>Platanthera leucophaea</i> | END | END | It is a species primarily of mesic prairies, fens and old fields (COSEWIC, 2003). ESA Protection: Species and general habitat protection | Forested and open areas of the property represent potential habitat for this species. Vegetation surveys did not document any evidence for this species on the property. |
| Eastern Ribbonsnake | <i>Thamnophis sauritus</i> | SC | SC | Found in wetland habitats with both flowing and standing water such as marshes, bogs, fens, ponds, lake shorelines and wet meadows. Most sightings occur near the water's edge (COSEWIC, 2012). ESA Protection: N/A | Vegetation communities or other natural features of the property are not representative of key habitat features required by this species. |
| Eastern Small-footed Myotis | <i>Myotis Lleibii</i> | END | END | Generally occurs in mountainous or rocky regions as well as in buildings, on the face of rock bluffs and beneath slabs of rock and stones. Hibernation is typically confined to caves and old mines (Best and Jennings, 1997). ESA Protection: Species and general habitat protection | Vegetation communities or other natural features of the property are not representative of key habitat features required by this species. |

Table 1: Species at Risk Habitat Assessment

AEC18-107 hasty Tract EIS

| Common Name | Species Name | ESA | SARA | Key Habitats Used By Species ¹ | Assessment |
|--|---|-----|-----------|--|--|
| Eastern Whip-poor-will | <i>Antrostomus vociferus</i> | THR | THR | Semi-open forests or patchy forests with clearings, such as barrens or forests that are regenerating following major disturbances, are preferred nesting habitats (COSEWIC, 2009). ESA Protection: Species and general habitat protection | Species was documented within adjacent lands. Further discussion can be found within various sections of the EIS |
| Eastern Wood-pewee | <i>Contopus virens</i> | SC | No status | Mostly in mature and intermediate-age deciduous and mixed forests having an open understory. It is often associated with forests dominated by Sugar Maple and oak. Usually associated with forest clearings and edges within the vicinity of its nest (COSEWIC, 2012). ESA Protection: N/A | Species was documented within the property. Further discussion can be found within various sections of the EIS |
| Forked Three-awned Grass | <i>Aristida basiramea</i> | END | END | Restricted to dry, open, acid sand barrens, but will exploit weedy habitats associated with these sites, such as roadside ditches and old fields. Restricted to southern Ontario (COSEWIC, 2002c). ESA Protection: Species and regulated habitat protection | Potential suitable habitat is present within the property and adjacent lands. Surveys did not document any evidence of this species on the property. |
| Golden-winged Warbler | <i>Vermivora chrysoptera</i> | SC | THR | Areas of early successional scrub surrounded by mature forests including dry uplands, swamp forests, and marshes (COSEWIC, 2006). ESA Protection: N/A | Vegetation communities or other natural features of the property are not representative of key habitat features required by this species. Surveys did not document any evidence of this species on the property. |
| Grasshopper Sparrow <i>pratensis</i> subspecies | <i>Ammodramus savannarum pratensis</i> | SC | No status | Typically breeds in large human-created grasslands (≥5 ha), such as pastures and hayfields, and natural prairies, such as alvars, characterized by well-drained, often poor soil dominated by low, sparse perennial herbaceous vegetation (COSEWIC, 2013). ESA Protection: N/A | Vegetation communities or other natural features of the property are not representative of key habitat features required by this species. Surveys did not document any evidence of this species on the property. |
| Hart's-tongue Fern | <i>Asplenium scolopendrium</i> var. <i>americanum</i> | SC | SC | Grows on calcareous rocks in deep shade on slopes in deciduous forest. Most occurrences are in maple-beech forest (MNR, 2016). ESA Protection: N/A | Forested and open areas of the property represent potential habitat for this species. Vegetation surveys did not document any evidence for this species on the property. |
| Henslow's Sparrow | <i>Ammodramus henslowii</i> | END | END | Requires grassland habitat and occurs more frequently and at higher densities in large patches of suitable habitat. Nests in tallgrass prairie, wet meadow, and marsh habitats as well as agricultural grasslands, lightly grazed pasture and grasslands on reclaimed surface mines (COSEWIC, 2011). ESA Protection: Species and general habitat protection | Vegetation communities or other natural features of the property are not representative of key habitat features required by this species. Surveys did not document any evidence of this species on the property. |
| Hine's Emerald | <i>Somatochlora hineana</i> | END | No status | Restricted to calcareous wetlands (marshes, sedge meadows, and fens) dominated by graminoid vegetation and fed primarily by groundwater from intermittent seeps (COSEWIC, 2011). ESA Protection: Species and general habitat protection | Vegetation communities or other natural features of the property are not representative of key habitat features required by this species. |

Table 1: Species at Risk Habitat Assessment

AEC18-107 hasty Tract EIS

| Common Name | Species Name | ESA | SARA | Key Habitats Used By Species ¹ | Assessment |
|---|----------------------------|-----|------|--|--|
| King Rail | <i>Rallus elegans</i> | END | END | Wide variety of freshwater marsh habitat types with cattails. Large marshes, especially those that contain a range of water level conditions and a mosaic of habitats, are preferred (COSEWIC, 2011). ESA Protection: Species and general habitat protection | Vegetation communities or other natural features of the property are not representative of key habitat features required by this species. |
| Least Bittern | <i>Ixobrychus exilis</i> | THR | THR | Breed strictly in marshes of emergents (usually cattails) that have relatively stable water levels and interspersed areas of open water (COSEWIC, 2009). ESA Protection: Species and general habitat protection | Vegetation communities or other natural features of the property are not representative of key habitat features required by this species. |
| Little Brown Myotis | <i>Myotis lucifugus</i> | END | END | Forests and regularly aging human structures as maternity roost sites. Regularly associated with attics of older buildings and barns for summer maternity roost colonies. Overwintering sites are characteristically mines or caves, but can often include buildings (MNRF, 2014) (COSEWIC, 2013). ESA Protection: Species and general habitat protection | The property is entirely forested and may provide suitable summer roosting habitat for this species. Further discussion can be found within various sections of the EIS. |
| Louisiana Waterthrush | <i>Parkesia motacilla</i> | THR | SC | Occupies specialized habitat, showing a strong preferences for nesting and wintering along relatively pristine headwater streams and wetlands situated in large tracts of mature forest. Prefers running water, but also inhabits heavily wooded swamps and vernal or semi-permanent pools (COSEWIC, 2015). ESA Protection: N/A | Vegetation communities or other natural features of the property are not representative of key habitat features required by this species. Surveys did not document any evidence of this species on the property. |
| Massasauga (Great Lakes - St. Lawrence population) | <i>Sistrurus catenatus</i> | THR | THR | In Georgian Bay, Massasaugas use bedrock barrens, conifer swamps, beaver meadows, fens, bogs, and shoreline habitats. On the upper Bruce Peninsula, forested habitats are used during hibernation and open, wetland, and edge habitat with canopy closure <50% in mid-late summer (COSEWIC, 2012). ESA Protection: Species and general habitat protection | Vegetation communities or other natural features of the property are not representative of key habitat features required by this species. |
| Monarch | <i>Danaus plexippus</i> | SC | SC | Breeding habitat is confined to sites where milkweeds, the sole food of caterpillars, grow. Milkweeds grow in a variety of environments, including meadows in farmlands, along roadsides and in ditches, open wetlands, dry sandy areas, short and tall grass prairie, river banks, irrigation ditches, arid valleys, and south-facing hills (COSEWIC, 2010). ESA Protection: N/A | Vegetation communities or other natural features of the property are not representative of key habitat features required by this species. |

Table 1: Species at Risk Habitat Assessment

AEC18-107 hasty Tract EIS

| Common Name | Species Name | ESA | SARA | Key Habitats Used By Species ¹ | Assessment |
|-----------------------|-----------------------------------|-----|------|--|--|
| Northern Myotis | <i>Myotis septentrionalis</i> | END | END | Maternity roost sites are generally located within deciduous and mixed forests and focused in snags including loose bark and cavities of trees. Overwintering sites are characteristically mines or caves (COSEWIC, 2013). ESA Protection: Species and general habitat protection | The property is entirely forested and may provide suitable summer roosting habitat for this species. Further discussion can be found within various sections of the EIS. |
| Northern Map Turtle | <i>Graptemys geographica</i> | SC | SC | Inhabits rivers and lakes where it basks on emergent rocks, banks, logs and fallen trees. Prefer shallow, soft-bottomed aquatic habitats with exposed objects for basking (COSEWIC, 2012). ESA Protection: N/A | Vegetation communities or other natural features of the property are not representative of key habitat features required by this species. |
| Peregrine Falcon | <i>Falco peregrinus</i> | SC | SC | Most nest on cliff ledges or crevices, but some will use tall buildings or bridges near good foraging areas. Nests are typically close to bodies of water (COSEWIC, 2007). ESA Protection: N/A | Vegetation communities or other natural features of the property are not representative of key habitat features required by this species. Surveys did not document any evidence of this species on the property. |
| Piping Plover | <i>Charadrius melodus</i> | END | END | Nest on sand and pebble beaches of freshwater dune formations on barrier islands, peninsulas or shorelines of large lakes (COSEWIC, 2013). ESA Protection: Species and regulated habitat protection | Vegetation communities or other natural features of the property are not representative of key habitat features required by this species. Surveys did not document any evidence of this species on the property. |
| Red-headed Woodpecker | <i>Melanerpes erythrocephalus</i> | SC | THR | Occurs in open deciduous forests, particularly those dominated by oak and beech, grasslands, forest edges, orchards, pastures along rivers and roads, urban parks, golf courses, cemeteries, beaver ponds and timber stands that have been treated with herbicides (COSEWIC, 2007). ESA Protection: N/A | Vegetation communities or other natural features of the property are not representative of key habitat features required by this species. Surveys did not document any evidence of this species on the property. |
| Snapping Turtle | <i>Chelydra serpentina</i> | SC | SC | Habitat is characterized by slow-moving water with a soft mud bottom and dense aquatic vegetation. Often located in ponds, sloughs, shallow bays or river edges and slow streams, or areas combining several of these wetland habitats (COSEWIC, 2008). ESA Protection: N/A | Vegetation communities or other natural features of the property are not representative of key habitat features required by this species. |
| Spotted Turtle | <i>Clemmys guttata</i> | END | END | Broadly speaking, this species is associated with wetland habitats such as bogs, fens, marshes, swamps, and shallow graminoid meadows. ESA Protection: Species and general habitat protection | Vegetation communities or other natural features of the property are not representative of key habitat features required by this species. |
| Tri-colored Bat | <i>Perimyotis subflavus</i> | END | END | Maternity roost sites include forests and modified landscapes (barns or human-made structures). Overwintering sites include mines and caves (COSEWIC, 2013). ESA Protection: Species and general habitat protection | The property is entirely forested and may provide suitable summer roosting habitat for this species. Further discussion can be found within various sections of the EIS. |

Table 1: Species at Risk Habitat Assessment

AEC18-107 hasty Tract EIS

| Common Name | Species Name | ESA | SARA | Key Habitats Used By Species ¹ | Assessment |
|-------------|-----------------------------------|-----|-----------|--|--|
| Wood Thrush | <i>Hylocichla mustelina</i> | SC | No status | Found in moist, deciduous hardwood or mixed stands, often previously disturbed, with a dense deciduous undergrowth and with tall trees for singing perches (COSEWIC, 2012). ESA Protection: N/A | Forested areas of the property represent potential suitable habitat for this species. Breeding bird surveys and non-targeted site visits have not documented the presence of this species on the property. |
| Yellow Rail | <i>Coturnicops noveboracensis</i> | SC | SC | Nest in wet marshy areas of short grass-like vegetation. The habitat must remain wet throughout the breeding season (COSEWIC, 2009). ESA Protection: N/A | Vegetation communities or other natural features of the property are not representative of key habitat features required by this species. |

¹ Habitat as outlined within the MNR's Species at Risk in Ontario website files (<https://www.ontario.ca/environment-and-energy/species-risk-ontario-list>), or Species Specific COSEWIC Reports referenced in this document. Species at Risk in Ontario List (June 13, 2017)

Table 2: Vascular Plant Species List

| Family | ¹ Scientific Name | ¹ Common Name | ² ELC Code - Corresponding to Figure 2 | | | | | | | | ³ Conservation Rank Information | | | | | |
|----------------|---|--|---|---------------|---------|---------------|---------|---------------|--------|---------|--|--------|--------|------|-----------------|---|
| | | | CUP3-1a | CUP3-1/CUP3-6 | FOCM6-2 | CUP3-1/CUP3-E | FOCM6-3 | FOCM6/FOMM2-3 | CUP3-2 | CUP3-1b | S-rank | G-Rank | SARO | SARA | Tracked by MNRF | |
| Aceraceae | <i>Acer negundo</i> | Manitoba Maple | | x | x | | | | | x | x | S5 | G5 | | | N |
| Aceraceae | <i>Acer platanoides</i> | Norway Maple | x | | x | | | | | | x | SNA | GNR | | | N |
| Aceraceae | <i>Acer rubrum</i> | Red Maple | x | x | x | x | x | x | x | x | x | S5 | G5 | | | N |
| Aceraceae | <i>Acer saccharum</i> | Sugar Maple | x | x | x | x | x | x | x | x | x | S5 | G5 | | | N |
| Aceraceae | <i>Acer spicatum</i> | Mountain Maple | x | | | | | | | | | S5 | G5 | | | N |
| Aceraceae | <i>Acer x freemanii</i> | (<i>Acer rubrum</i> X <i>Acer saccharinum</i>) | | | | | | | | x | | SNA | GNA | | | N |
| Anacardiaceae | <i>Rhus typhina</i> | Staghorn Sumac | x | | x | | | | | | x | S5 | G5 | | | N |
| Anacardiaceae | <i>Toxicodendron radicans</i> var. <i>radicans</i> | Eastern Poison Ivy | | | | | | | | x | | S5 | G5T5 | | | N |
| Anacardiaceae | <i>Toxicodendron radicans</i> var. <i>rydbergii</i> | Western Poison Ivy | x | x | x | x | x | x | x | x | x | S5 | G--T5 | | | N |
| Apiaceae | <i>Daucus carota</i> | Wild Carrot | x | | | | | | x | | x | SNA | GNR | | | N |
| Apocynaceae | <i>Apocynum androsaemifolium</i> | Spreading Dogbane | x | x | x | | | | | x | x | S5 | G5 | | | N |
| Apocynaceae | <i>Apocynum cannabinum</i> | Hemp Dogbane | | | | | | | x | | | S5 | G5 | | | N |
| Apocynaceae | <i>Vinca minor</i> | Periwinkle | | x | | | | | | x | | SNA | GNR | | | N |
| Araliaceae | <i>Aralia nudicaulis</i> | Wild Sarsaparilla | x | x | x | x | x | x | x | | | S5 | G5 | | | N |
| Asclepiadaceae | <i>Asclepias syriaca</i> | Common Milkweed | x | x | | | | | | | x | S5 | G5 | | | N |
| Asteraceae | <i>Achillea millefolium</i> | Common Yarrow | x | | | | | | x | | x | SNA | G5 | | | N |
| Asteraceae | <i>Ambrosia artemisiifolia</i> | Common Ragweed | x | | | | | | | | x | S5 | G5 | | | N |
| Asteraceae | <i>Anaphalis margaritacea</i> | Pearly Everlasting | | | | x | | | | | | S5 | G5 | | | N |
| Asteraceae | <i>Centaurea stoebe</i> ssp. <i>micranthos</i> | Spotted Knapweed | x | | | x | | | | | x | SNA | G--TNR | | | N |
| Asteraceae | <i>Doellingeria umbellata</i> | Flat-top White Aster | x | | x | | | | | x | | S5 | G5 | | | N |
| Asteraceae | <i>Erigeron annuus</i> | Annual Fleabane | x | | | | | | x | | x | S5 | G5 | | | N |
| Asteraceae | <i>Euthamia graminifolia</i> | Grass-leaved Goldenrod | | | | x | | | x | | | S5 | G5 | | | N |
| Asteraceae | <i>Lactuca serriola</i> | Prickly Lettuce | | | | | | | | | x | SNA | GNR | | | N |
| Asteraceae | <i>Leucanthemum vulgare</i> | Oxeye Daisy | | x | x | | | | | | x | SNA | GNR | | | N |
| Asteraceae | <i>Mycelis muralis</i> | Wall Lettuce | x | x | x | x | x | x | x | x | x | SNA | GNR | | | N |
| Asteraceae | <i>Pilosella aurantiaca</i> | Orange Hawkweed | | | | | | | | | x | SNA | GNR | | | N |
| Asteraceae | <i>Pilosella caespitosa</i> | Meadow Hawkweed | x | | x | x | | | x | | x | SNA | GNR | | | N |
| Asteraceae | <i>Pilosella officinarum</i> | Mouse-ear Hawkweed | x | | x | x | | | x | | x | SNA | GNR | | | N |
| Asteraceae | <i>Pilosella piloselloides</i> | Tall Hawkweed | | | | | | | | | x | SNA | GNR | | | N |
| Asteraceae | <i>Solidago caesia</i> | Blue-stemmed Goldenrod | x | x | x | x | | | x | x | | S5 | G5 | | | N |
| Asteraceae | <i>Solidago canadensis</i> | Canada Goldenrod | x | | x | x | | | | | x | S5 | G5 | | | N |
| Asteraceae | <i>Solidago gigantea</i> | Giant Goldenrod | x | x | x | | | | | | x | S5 | G5 | | | N |
| Asteraceae | <i>Solidago hispida</i> | Hairy Goldenrod | | | x | | | | | | | S5 | G5 | | | P |
| Asteraceae | <i>Solidago rugosa</i> | Rough-stemmed Goldenrod | x | x | x | x | | | x | | x | S5 | G5 | | | N |
| Asteraceae | <i>Symphyotrichum ciliolatum</i> | Lindley's Aster | | | | | | | | | x | S5 | G5 | | | N |
| Asteraceae | <i>Symphyotrichum ericoides</i> | White Heath Aster | | | | | | | | | x | S5 | G5 | | | P |
| Asteraceae | <i>Symphyotrichum lanceolatum</i> | Panicled Aster | x | | x | x | | | | | | S5 | G5 | | | P |
| Asteraceae | <i>Symphyotrichum lateriflorum</i> | Calico Aster | x | x | x | x | x | x | x | x | x | S5 | G5 | | | P |

Table 2: Vascular Plant Species List

| Family | ¹ Scientific Name | ¹ Common Name | ² ELC Code - Corresponding to Figure 2 | | | | | | | | ³ Conservation Rank Information | | | | |
|-----------------|--|---|---|---------------|---------|---------------|---------|---------------|--------|---------|--|--------|------|------|----------------|
| | | | CUP3-1a | CUP3-1/CUP3-6 | FOCM6-2 | CUP3-1/CUP3-E | FOCM6-3 | FOCM6/FOMM2-3 | CUP3-2 | CUP3-1b | S-rank | G-Rank | SARO | SARA | Tracked by MNR |
| Asteraceae | <i>Symphyotrichum novae-angliae</i> | New England Aster | | | | | | | | x | S5 | G5 | | N | |
| Asteraceae | <i>Symphyotrichum ontarionis</i> var. <i>glabratum</i> | Smooth Ontario Aster | x | | | | | | | | S5 | G5T5 | | N | |
| Asteraceae | <i>Symphyotrichum urophyllum</i> | Arrow-leaved Aster | x | x | x | x | x | x | x | x | S4 | G4G5 | | N | |
| Asteraceae | <i>Taraxacum officinale</i> | Common Dandelion | x | x | x | x | x | x | x | x | SNA | G5 | | N | |
| Asteraceae | <i>Tragopogon dubius</i> | Yellow Goat's-beard | | | | | | | | x | SNA | GNR | | N | |
| Berberidaceae | <i>Berberis thunbergii</i> | Japanese Barberry | x | | | | | | | | SNA | GNR | | N | |
| Berberidaceae | <i>Berberis vulgaris</i> | European Barberry | x | x | | | | | | | SNA | GNR | | N | |
| Betulaceae | <i>Betula alleghaniensis</i> | Yellow Birch | x | | | | | | | | S5 | G5 | | N | |
| Betulaceae | <i>Betula papyrifera</i> | Paper Birch | | | | | | x | | | S5 | G5 | | N | |
| Betulaceae | <i>Corylus cornuta</i> | Beaked Hazelnut | x | | | x | x | x | x | | S5 | G5 | | N | |
| Betulaceae | <i>Ostrya virginiana</i> | Eastern Hop-hornbeam | x | | x | | | x | x | | S5 | G5 | | N | |
| Boraginaceae | <i>Cynoglossum officinale</i> | Common Hound's-tongue | | | | | | | | x | SNA | GNR | | N | |
| Boraginaceae | <i>Echium vulgare</i> | Common Viper's Bugloss | | | | | | | | x | SNA | GNR | | N | |
| Boraginaceae | <i>Lithospermum officinale</i> | European Gromwell | | | x | | | | | | SNA | GNR | | N | |
| Boraginaceae | <i>Myosotis sylvatica</i> | Woodland Forget-me-not | | | x | | | x | | x | SNA | G5 | | N | |
| Brassicaceae | <i>Alliaria petiolata</i> | Garlic Mustard | | x | x | | | | x | x | SNA | GNR | | N | |
| Brassicaceae | <i>Hesperis matronalis</i> | Dame's Rocket | | | | | | | | x | SNA | G4G5 | | N | |
| Brassicaceae | <i>Lepidium campestre</i> | Field Peppergrass | | | | | | | | x | SNA | GNR | | N | |
| Caprifoliaceae | <i>Diervilla lonicera</i> | Northern Bush-honeysuckle | x | | x | | | | x | x | S5 | G5 | | N | |
| Caprifoliaceae | <i>Lonicera canadensis</i> | Canada Fly Honeysuckle | x | x | x | x | | x | x | | S5 | G5 | | N | |
| Caprifoliaceae | <i>Lonicera dioica</i> | Limber Honeysuckle | | | | | | | x | | S5 | G5 | | N | |
| Caprifoliaceae | <i>Lonicera morrowii</i> | Morrow's Honeysuckle | | x | x | | | | | x | SNA | GNR | | N | |
| Caprifoliaceae | <i>Lonicera x bella</i> | (<i>Lonicera morrowii</i> X <i>Lonicera tatarica</i>) | x | | x | | x | x | | x | SNA | GNA | | N | |
| Caprifoliaceae | <i>Sambucus racemosa</i> ssp. <i>pubens</i> | Red Elderberry | | | x | | | | | | S5 | G5T5 | | N | |
| Caprifoliaceae | <i>Triosteum aurantiacum</i> | Orange-fruited Horse-gentian | | x | | | | | | | S4S5 | G5 | | N | |
| Caprifoliaceae | <i>Viburnum acerifolium</i> | Maple-leaved Viburnum | x | | x | | x | x | x | x | S5 | G5 | | N | |
| Caprifoliaceae | <i>Viburnum lantana</i> | Wayfaring-tree | | | x | | | | | | SNA | GNR | | N | |
| Caprifoliaceae | <i>Viburnum opulus</i> | Cranberry Viburnum | x | x | x | x | x | x | x | x | S5 | G5 | | N | |
| Caryophyllaceae | <i>Cerastium arvense</i> | Field Chickweed | | | x | | | | | x | S4 | G5 | | N | |
| Caryophyllaceae | <i>Dianthus armeria</i> | Deptford Pink | | | | | | | x | | SNA | GNR | | N | |
| Caryophyllaceae | <i>Saponaria officinalis</i> | Bouncing-bet | | | | | | | | x | SNA | GNR | | N | |
| Caryophyllaceae | <i>Silene vulgaris</i> | Bladder Campion | x | | | | | | | x | SNA | GNR | | N | |
| Celastraceae | <i>Euonymus fortunei</i> | Climbing Euonymus | | x | x | | | | | | SNA | GNR | | N | |
| Chenopodiaceae | <i>Chenopodium album</i> | White Goosefoot | x | | | | | | | x | SNA | G5 | | N | |
| Clusiaceae | <i>Hypericum perforatum</i> | Common St. John's-wort | x | x | x | | | x | | | SNA | GNR | | N | |
| Convolvulaceae | <i>Convolvulus arvensis</i> | Field Bindweed | | | x | x | x | x | | | SNA | GNR | | N | |
| Cornaceae | <i>Cornus alternifolia</i> | Alternate-leaved Dogwood | x | x | x | | | | x | | S5 | G5 | | N | |
| Cornaceae | <i>Cornus rugosa</i> | Round-leaved Dogwood | | | | | | | x | x | S5 | G5 | | N | |

Table 2: Vascular Plant Species List

| Family | ¹ Scientific Name | ¹ Common Name | ² ELC Code - Corresponding to Figure 2 | | | | | | | | ³ Conservation Rank Information | | | | | |
|------------------|--|-----------------------------|---|---------------|---------|---------------|---------|---------------|--------|---------|--|--------|------|------|-----------------|---|
| | | | CUP3-1a | CUP3-1/CUP3-6 | FOCM6-2 | CUP3-1/CUP3-E | FOCM6-3 | FOCM6/FOMM2-3 | CUP3-2 | CUP3-1b | S-rank | G-Rank | SARO | SARA | Tracked by MNRF | |
| Cornaceae | <i>Cornus sericea</i> | Red-osier Dogwood | x | | | | | | | x | | S5 | G5 | | | N |
| Crassulaceae | <i>Hylotelephium telephium</i> | Garden Stonecrop | | | | | | | | | x | SNA | GNR | | | N |
| Cupressaceae | <i>Juniperus communis</i> | Common Juniper | | | | x | x | | | x | x | S5 | G5 | | | N |
| Cyperaceae | <i>Carex arctata</i> | Drooping Woodland Sedge | x | x | x | | x | x | x | | | S5 | G5 | | | N |
| Cyperaceae | <i>Carex backii</i> | Back's Sedge | | | x | | x | x | | | x | S4 | G5 | | | N |
| Cyperaceae | <i>Carex blanda</i> | Woodland Sedge | | | | | x | x | | | x | S5 | G5 | | | N |
| Cyperaceae | <i>Carex brevior</i> | Short-beaked Sedge | | | | | | | | | x | S4 | G5 | | | N |
| Cyperaceae | <i>Carex debilis</i> | White-edge Sedge | | | | | | | | | x | S5 | G5 | | | N |
| Cyperaceae | <i>Carex deweyana</i> | Dewey's Sedge | | x | x | | x | x | | | | S5 | G5 | | | N |
| Cyperaceae | <i>Carex gracillima</i> | Graceful Sedge | x | | x | x | | | | x | | S5 | G5 | | | N |
| Cyperaceae | <i>Carex muehlenbergii</i> | Muhlenberg's Sedge | x | | | | x | x | | | | S4S5 | G5 | | | P |
| Cyperaceae | <i>Carex ormostachya</i> | Necklace Spike Sedge | | | | | | | | | x | S4 | G4G5 | | | N |
| Cyperaceae | <i>Carex peckii</i> | Peck's Sedge | | x | x | | x | x | x | | | S5 | G5 | | | N |
| Cyperaceae | <i>Carex pedunculata</i> | Long-stalked Sedge | | x | x | x | x | x | x | | | S5 | G5 | | | N |
| Cyperaceae | <i>Carex rosea</i> | Rosy Sedge | x | x | x | x | | | | | | S5 | G5 | | | N |
| Cyperaceae | <i>Carex sprengei</i> | Sprengel's Sedge | | | | | | x | | | | S5 | G5 | | | N |
| Dennstaedtiaceae | <i>Pteridium aquilinum</i> | Bracken Fern | x | x | x | x | x | x | x | x | x | S5 | G5 | | | N |
| Dryopteridaceae | <i>Athyrium filix-femina var. angustum</i> | Northeastern Lady Fern | | x | x | | | | | | | S5 | G5T5 | | | N |
| Dryopteridaceae | <i>Dryopteris carthusiana</i> | Spinulose Wood Fern | x | x | x | x | x | x | x | x | x | S5 | G5 | | | N |
| Dryopteridaceae | <i>Dryopteris filix-mas</i> | Male Fern | | x | | | | | | | | S4 | G5 | | | N |
| Dryopteridaceae | <i>Dryopteris intermedia</i> | Evergreen Wood Fern | x | x | x | x | x | x | x | x | | S5 | G5 | | | N |
| Dryopteridaceae | <i>Dryopteris marginalis</i> | Marginal Wood Fern | x | x | | | | | | x | x | S5 | G5 | | | N |
| Dryopteridaceae | <i>Onoclea sensibilis</i> | Sensitive Fern | | | x | | | | | | | S5 | G5 | | | N |
| Fabaceae | <i>Medicago lupulina</i> | Black Medic | | | | | | | | | x | SNA | GNR | | | N |
| Fabaceae | <i>Medicago sativa</i> | Alfalfa | | | | | | | | | x | SNA | GNR | | | N |
| Fabaceae | <i>Melilotus albus</i> | White Sweet-clover | | | | | | | | | x | SNA | G5 | | | N |
| Fagaceae | <i>Fagus grandifolia</i> | American Beech | x | x | x | x | x | x | x | x | x | S4 | G5 | | | N |
| Fagaceae | <i>Quercus rubra</i> | Northern Red Oak | x | x | x | x | x | x | x | x | x | S5 | G5 | | | N |
| Geraniaceae | <i>Geranium robertianum</i> | Herb-Robert | x | x | | | x | x | | | x | S5 | G5 | | | N |
| Grossulariaceae | <i>Ribes cynosbati</i> | Prickly Gooseberry | | x | x | | x | x | | | x | S5 | G5 | | | N |
| Grossulariaceae | <i>Ribes uva-crispa</i> | European Gooseberry | x | | x | x | | | | | x | SNA | GNR | | | N |
| Juglandaceae | <i>Juglans nigra</i> | Black Walnut | | | | | x | | | | x | S4? | G5 | | | N |
| Lamiaceae | <i>Clinopodium vulgare</i> | Field Basil | x | | x | x | | | | x | x | S5 | G5 | | | N |
| Lamiaceae | <i>Lamiaeum galeobdolon</i> | Yellow Archangel | | | | | | | | | x | SNA | GNR | | | N |
| Lamiaceae | <i>Leonurus cardiaca</i> | Common Motherwort | | | | | | | | | x | SNA | GNR | | | N |
| Lamiaceae | <i>Monarda fistulosa</i> | Wild Bergamot | | | | | | | | | x | S5 | G5 | | | P |
| Lamiaceae | <i>Prunella vulgaris</i> | Self-heal | | | | | | | | x | | S5 | G5 | | | N |
| Liliaceae | <i>Convallaria majalis</i> | European Lily-of-the-valley | x | | x | | x | x | x | x | x | SNA | G5 | | | N |

Table 2: Vascular Plant Species List

| Family | ¹ Scientific Name | ¹ Common Name | ² ELC Code - Corresponding to Figure 2 | | | | | | | | ³ Conservation Rank Information | | | | |
|-----------------|--|-------------------------------------|---|---------------|---------|---------------|---------|---------------|--------|---------|--|--------|------|------|----------------|
| | | | CUP3-1a | CUP3-1/CUP3-6 | FOCM6-2 | CUP3-1/CUP3-E | FOCM6-3 | FOCM6/FOMM2-3 | CUP3-2 | CUP3-1b | S-rank | G-Rank | SARO | SARA | Tracked by MNR |
| Liliaceae | <i>Hemerocallis fulva</i> | Orange Daylily | | | | | x | | | x | SNA | GNA | | | N |
| Liliaceae | <i>Maianthemum canadense</i> | Wild Lily-of-the-valley | x | x | x | x | x | x | x | x | S5 | G5 | | | N |
| Liliaceae | <i>Maianthemum racemosum</i> | Large False Solomon's Seal | x | x | x | | | | | x | S5 | G5 | | | N |
| Liliaceae | <i>Maianthemum stellatum</i> | Star-flowered False Solomon's Seal | | | x | | | | | x | S5 | G5 | | | N |
| Liliaceae | <i>Polygonatum pubescens</i> | Hairy Solomon's Seal | | x | x | | | | | x | S5 | G5 | | | N |
| Monotropaceae | <i>Monotropa uniflora</i> | Indian-pipe | | | | x | | | | | S5 | G5 | | | N |
| Oleaceae | <i>Fraxinus americana</i> | White Ash | x | x | x | | x | x | x | x | S4 | G5 | | | N |
| Oleaceae | <i>Fraxinus pennsylvanica</i> | Green Ash | x | x | x | | x | x | x | x | S4 | G5 | | | N |
| Oleaceae | <i>Ligustrum vulgare</i> | European Privet | | | | | | | | x | SNA | GNR | | | N |
| Oleaceae | <i>Syringa vulgaris</i> | Common Lilac | | | x | | | | | x | SNA | GNR | | | N |
| Onagraceae | <i>Circaea canadensis</i> | Broad-leaved Enchanter's Nightshade | | | x | | | | | x | S5 | G5 | | | N |
| Onagraceae | <i>Oenothera biennis</i> | Common Evening Primrose | | | | | | | | x | S5 | G5 | | | N |
| Ophioglossaceae | <i>Botrychium matricariifolium</i> | Daisy-leaved Moonwort | | | | | | x | | | S4S5 | G5 | | | N |
| Orchidaceae | <i>Epipactis helleborine</i> | Eastern Helleborine | | | x | x | x | x | x | x | SNA | GNR | | | N |
| Oxalidaceae | <i>Oxalis stricta</i> | Upright Yellow Wood-sorrel | x | x | | | | | | x | S5 | G5 | | | N |
| Pinaceae | <i>Abies balsamea</i> | Balsam Fir | | | | | | x | | x | S5 | G5 | | | N |
| Pinaceae | <i>Larix decidua</i> | European Larch | x | x | x | | | | | | SNA | G5 | | | N |
| Pinaceae | <i>Picea abies</i> | Norway Spruce | | x | x | x | x | x | x | | SNA | G5 | | | N |
| Pinaceae | <i>Picea glauca</i> | White Spruce | x | | x | x | | x | | x | S5 | G5 | | | N |
| Pinaceae | <i>Pinus banksiana</i> | Jack Pine | | | x | | | x | | | S5 | G5 | | | N |
| Pinaceae | <i>Pinus resinosa</i> | Red Pine | x | x | x | x | | | | x | S5 | G5 | | | N |
| Pinaceae | <i>Pinus strobus</i> | Eastern White Pine | x | | x | x | x | x | x | x | S5 | G5 | | | N |
| Pinaceae | <i>Pinus sylvestris</i> | Scots Pine | x | | x | x | x | | | x | SNA | GNR | | | N |
| Plantaginaceae | <i>Plantago major</i> | Common Plantain | | | | | | | | x | SNA | G5 | | | N |
| Poaceae | <i>Bromus inermis</i> | Smooth Brome | | | | | | | | x | SNA | G5 | | | N |
| Poaceae | <i>Dactylis glomerata</i> | Orchard Grass | | | | | | | | x | SNA | GNR | | | N |
| Poaceae | <i>Danthonia spicata</i> | Poverty Oatgrass | x | x | x | x | x | | | x | S5 | G5 | | | N |
| Poaceae | <i>Dichanthelium implicatum</i> | Slender-stemmed Panicgrass | | | | | x | | | | S5 | G5 | | | N |
| Poaceae | <i>Muhlenbergia mexicana</i> | Mexican Muhly | x | | x | | x | | | x | S5 | G5 | | | N |
| Poaceae | <i>Panicum capillare</i> | Common Panicgrass | | | | | | | | x | S5 | G5 | | | N |
| Poaceae | <i>Patis racemosa</i> | Black-seeded Ricegrass | x | x | x | | | | | x | S4 | G5 | | | N |
| Poaceae | <i>Phalaris arundinacea</i> | Reed Canary Grass | x | | | | | | | | S5 | G5 | | | N |
| Poaceae | <i>Poa compressa</i> | Canada Bluegrass | | | | | | | | x | SNA | GNR | | | N |
| Poaceae | <i>Poa nemoralis</i> | Woods Bluegrass | | | | | | | | x | SNA | GU | | | N |
| Poaceae | <i>Poa pratensis</i> | Kentucky Bluegrass | | | | | | | | x | S5 | G5 | | | P |
| Poaceae | <i>Poa saltuensis</i> | Drooping Bluegrass | | x | x | | | | | x | S4 | G5 | | | P |
| Poaceae | <i>Schizachne purpurascens ssp. purpurascens</i> | Purple False Melic | x | x | x | x | x | x | | x | S5 | G5T5 | | | N |
| Poaceae | <i>Setaria faberi</i> | Giant Foxtail | | | | | | | | x | SNA | GNR | | | N |

Table 2: Vascular Plant Species List

| Family | ¹ Scientific Name | ¹ Common Name | ² ELC Code - Corresponding to Figure 2 | | | | | | | | ³ Conservation Rank Information | | | | |
|---------------|------------------------------------|--------------------------|---|---------------|---------|---------------|---------|---------------|--------|---------|--|--------|------|------|-----------------|
| | | | CUP3-1a | CUP3-1/CUP3-6 | FOCM6-2 | CUP3-1/CUP3-E | FOCM6-3 | FOCM6/FOMM2-3 | CUP3-2 | CUP3-1b | S-rank | G-Rank | SARO | SARA | Tracked by MNRF |
| Poaceae | <i>Setaria viridis</i> | Green Foxtail | | | | | | | | x | SNA | GNR | | | N |
| Polygonaceae | <i>Rumex acetosella</i> | Sheep Sorrel | x | | x | | x | x | | x | SNA | GNR | | | N |
| Polygonaceae | <i>Rumex obtusifolius</i> | Bitter Dock | | | | | | | x | | SNA | GNR | | | N |
| Primulaceae | <i>Lysimachia borealis</i> | Northern Starflower | x | x | x | x | x | x | x | | S5 | G5 | | | N |
| Pyrolaceae | <i>Chimaphila umbellata</i> | Common Pipsissewa | | | | | | | | x | S5 | G5 | | | N |
| Pyrolaceae | <i>Pyrola elliptica</i> | Shinleaf | x | | | | | | | x | S5 | G5 | | | N |
| Ranunculaceae | <i>Actaea pachypoda</i> | White Baneberry | | | | | | | | x | S5 | G5 | | | N |
| Ranunculaceae | <i>Anemone virginiana</i> | Tall Anemone | x | | | | | | | | S5 | G5 | | | N |
| Ranunculaceae | <i>Aquilegia canadensis</i> | Red Columbine | | x | | | | | | x | S5 | G5 | | | N |
| Ranunculaceae | <i>Clematis virginiana</i> | Virginia Virgin's-bower | x | | | | x | x | | | S5 | G5 | | | N |
| Ranunculaceae | <i>Ranunculus acris</i> | Tall Buttercup | | | x | | x | x | | | SNA | G5 | | | N |
| Rhamnaceae | <i>Frangula alnus</i> | Glossy Buckthorn | x | x | x | | | | | | SNA | GNR | | | N |
| Rhamnaceae | <i>Rhamnus cathartica</i> | Common Buckthorn | x | x | | | | | x | | SNA | GNR | | | N |
| Rosaceae | <i>Amelanchier arborea</i> | Downy Serviceberry | | x | | | | | | x | S5 | G5 | | | N |
| Rosaceae | <i>Amelanchier laevis</i> | Smooth Serviceberry | x | x | x | | x | x | | x | S5 | G5 | | | N |
| Rosaceae | <i>Crataegus sp.</i> | Hawthorn species | | x | | | | | | x | - | - | | | - |
| Rosaceae | <i>Fragaria virginiana</i> | Wild Strawberry | x | x | x | x | x | x | x | x | S5 | G5 | | | N |
| Rosaceae | <i>Geum canadense</i> | White Avens | | x | | | | | | | S5 | G5 | | | N |
| Rosaceae | <i>Malus pumila</i> | Common Apple | | | x | | | | | x | SNA | G5 | | | N |
| Rosaceae | <i>Potentilla recta</i> | Sulphur Cinquefoil | x | | x | | | | | x | SNA | GNR | | | N |
| Rosaceae | <i>Prunus pensylvanica</i> | Pin Cherry | x | | x | | | | | x | S5 | G5 | | | N |
| Rosaceae | <i>Prunus serotina</i> | Black Cherry | x | x | x | x | x | x | x | x | S5 | G5 | | | N |
| Rosaceae | <i>Prunus virginiana</i> | Choke Cherry | x | x | x | x | x | x | x | x | S5 | G5 | | | N |
| Rosaceae | <i>Rosa multiflora</i> | Multiflora Rose | x | | | | | | | | SNA | GNR | | | N |
| Rosaceae | <i>Rubus allegheniensis</i> | Allegheny Blackberry | x | x | x | x | x | x | x | x | S5 | G5 | | | N |
| Rosaceae | <i>Rubus idaeus ssp. strigosus</i> | Wild Red Raspberry | x | x | x | x | x | x | x | x | S5 | G5T5 | | | N |
| Rosaceae | <i>Rubus occidentalis</i> | Black Raspberry | | x | | | x | x | x | | S5 | G5 | | | N |
| Rosaceae | <i>Sorbus aucuparia</i> | European Mountain-ash | x | | x | x | x | x | x | x | SNA | G5 | | | N |
| Rubiaceae | <i>Galium asprellum</i> | Rough Bedstraw | | x | | | | | | | S5 | G5 | | | N |
| Rubiaceae | <i>Galium mollugo</i> | Smooth Bedstraw | x | | | | | | | x | SNA | GNR | | | N |
| Rubiaceae | <i>Galium odoratum</i> | Sweet Bedstraw | | x | x | | x | x | | | SNA | GNR | | | N |
| Rubiaceae | <i>Houstonia longifolia</i> | Long-leaved Bluets | x | | | | | | | | S4 | G5 | | | N |
| Rubiaceae | <i>Mitchella repens</i> | Partridge-berry | | x | x | x | x | x | x | | S5 | G5 | | | N |
| Salicaceae | <i>Populus balsamifera</i> | Balsam Poplar | | | | | | | | x | S5 | G5 | | | N |
| Salicaceae | <i>Populus grandidentata</i> | Large-toothed Aspen | x | | x | | | | | x | S5 | G5 | | | N |
| Salicaceae | <i>Populus tremuloides</i> | Trembling Aspen | x | | x | | | | | x | S5 | G5 | | | N |
| Salicaceae | <i>Salix bebbiana</i> | Bebb's Willow | x | | x | | | | | | S5 | G5 | | | N |
| Salicaceae | <i>Salix eriocephala</i> | Heart-leaved Willow | x | | | | | | | | S5 | G5 | | | N |

Table 2: Vascular Plant Species List

| Family | ¹ Scientific Name | ¹ Common Name | ² ELC Code - Corresponding to Figure 2 | | | | | | | | ³ Conservation Rank Information | | | | | |
|------------------|------------------------------------|--------------------------|---|---------------|---------|---------------|---------|---------------|--------|---------|--|--------|------|------|-----------------|---|
| | | | CUP3-1a | CUP3-1/CUP3-6 | FOCM6-2 | CUP3-1/CUP3-E | FOCM6-3 | FOCM6/FOMM2-3 | CUP3-2 | CUP3-1b | S-rank | G-Rank | SARO | SARA | Tracked by MNRF | |
| Scrophulariaceae | <i>Linaria vulgaris</i> | Butter-and-eggs | | x | | | | | | | x | SNA | GNR | | | N |
| Scrophulariaceae | <i>Verbascum thapsus</i> | Common Mullein | x | | | | | | | | x | SNA | GNR | | | N |
| Scrophulariaceae | <i>Veronica officinalis</i> | Common Speedwell | x | x | x | x | x | x | x | x | x | SNA | G5 | | | N |
| Scrophulariaceae | <i>Veronica serpyllifolia</i> | Thyme-leaved Speedwell | | | | | | | x | | | SNA | G5 | | | N |
| Solanaceae | <i>Solanum dulcamara</i> | Bittersweet Nightshade | x | x | x | x | x | x | x | x | x | SNA | GNR | | | N |
| Taxaceae | <i>Taxus canadensis</i> | Canadian Yew | | | | | | | | x | | S4 | G5 | | | N |
| Thymelaeaceae | <i>Daphne mezereum</i> | February Daphne | | x | | | | | | | | SNA | GNR | | | N |
| Tiliaceae | <i>Tilia americana</i> | American Basswood | | | x | | | | | x | | S5 | G5 | | | N |
| Tiliaceae | <i>Tilia cordata</i> | Little-leaf Linden | | x | x | x | | | | | | SNA | GNR | | | N |
| Ulmaceae | <i>Ulmus americana</i> | American Elm | | | | | | x | x | | x | S5 | G5 | | | N |
| Ulmaceae | <i>Ulmus pumila</i> | Siberian Elm | | | | | | | | | x | SNA | GNR | | | N |
| Verbenaceae | <i>Verbena stricta</i> | Hoary Vervain | | | | | | | | | x | S4 | G5 | | | N |
| Vitaceae | <i>Parthenocissus quinquefolia</i> | Virginia Creeper | | | | | | | | | x | S4? | G5 | | | N |
| Vitaceae | <i>Parthenocissus vitacea</i> | Thicket Creeper | x | x | x | x | x | x | x | x | x | S5 | G5 | | | N |
| Vitaceae | <i>Vitis riparia</i> | Riverbank Grape | | | x | x | | | x | x | | S5 | G5 | | | N |

¹ Nomenclature based on Ministry of Natural Resources and Forestry (MNRF) Natural Heritage Information Centre (NHIC, 2018)

² ELC Codes based on Ecological Land Classification for Southern Ontario manual (Lee et al. 1998, and 2008 update)

³ Conservation Rankings: From Ontario Ministry of Natural Resources, Natural Heritage Information Centre (<https://www.ontario.ca/page/get-natural-heritage-information>)

| Family | Scientific Name | English Common Name | Point Count Stations | | | | | | | | | | | | | | Breeding Evidence | Conservation Ranks ^B | | | |
|--------------|--------------------------------|--------------------------|----------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-------------------|---------------------------------|--------|-------------|----|
| | | | 1 | | 2 | | 3 | | 4 | | 5 | | 6 | | 7 | | | S-Rank | G-Rank | SARO Status | |
| | | | 06-Jun-18 | 22-Jun-18 | 06-Jun-18 | 22-Jun-18 | 06-Jun-18 | 22-Jun-18 | 06-Jun-18 | 22-Jun-18 | 06-Jun-18 | 22-Jun-18 | 06-Jun-18 | 22-Jun-18 | 06-Jun-18 | 22-Jun-18 | | | | | |
| Picidae | <i>Dryocopus pileatus</i> | Pileated Woodpecker | | | | | | | | | | | S (2) | | | | Possible | S5 | G5 | | |
| Paridae | <i>Poecile atricapillus</i> | Black-capped Chickadee | S (2) | | S (3) | | S (3) | | | | | S (1) | | S, H (5) | | | H (3) | Probable | S5 | G5 | |
| Parulidae | <i>Seiurus aurocapilla</i> | Ovenbird | S (2) | | S (2) | | | | S (2) | | | S (1) | Probable | S4B | G5 | |
| Corvidae | <i>Corvus brachyrhynchos</i> | American Crow | H (1) | H (1) | H (2) | | | H (3) | H (2) | H (1) | H (1) | | | | | | H (1) | Possible | S5B | G5 | |
| Sittidae | <i>Sitta canadensis</i> | Red-breasted Nuthatch | H (1) | | | | | | | | | | | | S (2) | | S (1) | Probable | S5 | G5 | |
| Fringillidae | <i>Carduelis tristis</i> | American Goldfinch | | H (1) | H (1) | | | H (1) | H, S (1) | | | | | | | | | Probable | S5B | G5 | |
| Corvidae | <i>Cyanocitta cristata</i> | Blue Jay | | H (2) | H (1) | H (1) | H (1) | | | | | | | | | | H (1) | Possible | S5 | G5 | |
| Tyrannidae | <i>Myiarchus crinitus</i> | Great Crested Flycatcher | | | | | H (1) | | H (1) | | | | H (1) | H (1) | | | H (1) | Possible | S4B | G5 | |
| Cardinalidae | <i>Cardinalis cardinalis</i> | Northern Cardinal | | | | | S (1) | | | | | | | | | | | Possible | S5 | G5 | |
| Tyrannidae | <i>Contopus virens</i> | Eastern Wood-pewee | | | | | | | | S (1) | | | S (1) | S (1) | | | | Probable | S4B | G5 | SC |
| Vireonidae | <i>Vireo olivaceus</i> | Red-eyed Vireo | | | | S (1) | | | | S (1) | | | S (1) | | | S (1) | | Probable | S5B | G5 | |
| Parulidae | <i>Setophaga pinus</i> | Pine Warbler | S (2) | S (1) | S (1) | | S (1) | S (1) | S (1) | S (1) | | | | S (2) | S (1) | S (1) | Probable | S5B | G5 | | |
| Parulidae | <i>Mniotilta varia</i> | Black-and-white Warbler | | | | | | | | | | | | S (1) | | | | Possible | S5B | G5 | |
| Certhiidae | <i>Certhia americana</i> | Brown Creeper | | | | | | | | | | | | S (1) | | | | Possible | S5B | G5 | |
| Parulidae | <i>Geothlypis philadelphia</i> | Mourning Warbler | | | | | | | | | | | | S (1) | | | | Possible | S4B | G5 | |
| Turdidae | <i>Turdus migratorius</i> | American Robin | | | | | | | | S (1) | | | | | | | H (1) | Possible | S5B | G5 | |

Surveys Conditions:
 June 6, 2018; Time 0536-0710; Temperature 9°C; Wind B0; Cloud Cover 100%; Precipitation Nil; Observer D. D'Entremont
 June 22 2018; Time 0543-0800; Temperature 7°C; Wind B0; Cloud Cover 10%; Precipitation Nil; Observer D. D'Entremont

^AOBBA Breeding Evidence Codes:
The number in brackets represents the largest number of individuals observed during one period at that point location.
 FO - Fly Over
 X - Species observed in its breeding season (no breeding evidence)
POSSIBLE
 H - Species observed in its breeding season in suitable nesting habitat
 S - Singing male present, or breeding calls heard, in suitable nesting habitat in nesting season.
PROBABLE
 A - Agitated behaviour or anxiety calls of an adult.
 N - Nest building or excavation of nest hole.
 P -Pair observed in suitable nesting habitat in nesting season.
 T - Permanent territory presumed through registration of territorial behaviour (e.g. song) on at least two days, a week or more apart, at the same place.
CONFIRMED
 DD - Distraction display or injury feigning.
 FY - Recently fledged young or downy young, including incapable of sustained flight.

^BConservation Rank - from OMNRF, NHIC and SARO Lists 2014
 S-rank - S1 - Extremely Rare, S2 - Very Rare, S3 - Rare to Uncommon, S4 - Common, S5 - Very Common
 G-Rank - G1 - Critically Imperiled, G2 - Imperiled, G3 - Vulnerable, G4 - Apparently Secure, G5 - Secure
 SARO - EXP (Extirpated), END (Endangered), THR (Threatened), SC (Special Concern)

Table 4. Significant Woodland Assessment

| CRITERIA | STANDARDS | ASSESSMENT |
|--|--|---|
| Woodland Size Criteria | | |
| <ul style="list-style-type: none"> Size refers to the aerial (spatial) extent of the woodland (irrespective of ownership) Woodland areas are considered to be generally continuous even if intersected by narrow gaps 20m or less in width between crown edges. Size value is related to the scarcity of woodland in the landscape derived on a municipal basis with consideration of the differences in woodland coverage among physical sub-units (e.g., watersheds, biophysical regions). Size criteria should also account for differences in landscape-level physiography (e.g., moraines, clay planes) and community vegetation types. | <p>Where woodlands cover:</p> <ul style="list-style-type: none"> Is less than about 5% of land cover, woodlands 2ha in size or larger should be considered significant Is about 5-15% of land cover, woodlands 4ha in size or larger should be considered significant Is about 15-30% of land cover, woodlands 20ha in size or larger should be considered significant Is about 30-60% of land cover, woodlands 50ha in size or larger should be considered significant Occupies more than 60% of the land, a minimum size is not suggested, and other factors should be considered | <ul style="list-style-type: none"> According to the Nottawasaga Valley Conservation Authority (2013), the Willow Creek Subwatershed in which the property is located has a total of 40.7% of forest cover. In this planning context, woodlands would need to be 50 ha in size or larger to be considered significant. The woodland unit is part of a contiguous woodland unit measured at approximately 102 ha. Therefore, according to the Woodland Size Criteria, the woodland unit appears to meet this criterion to be considered Significant in the context of the Provincial Policy Statement. |
| Ecological Function Criteria | | |
| <p>Woodland Interior</p> <ul style="list-style-type: none"> Interior Habitat more than 100m from the edge (as measured from the limits of a continuous woodland as defined above) is important for some species. For purposes of this criterion, a maintained public road would create an edge even if the opening was not wider than 20m and did not create a separate woodland. | <p>Woodlands should be considered significant if they have:</p> <ul style="list-style-type: none"> Any interior habitat where woodlands cover less than about 15% of the land cover 2 ha or more of interior habitat where woodlands cover about 15-30% of the land cover 8 ha or more of interior habitat where woodlands cover about 30-60% of the land cover 20 ha or more of interior habitat where woodlands cover about 60% of the land cover | <ul style="list-style-type: none"> Since landscape (<i>i.e.</i>, Willow Creek Subwatershed) contains 40.7% of woodland cover, 8 ha of interior habitat is required for this woodland to be considered significant. The contiguous woodland feature which includes the property contains approximately 54 ha of interior habitat. Therefore, according to the Woodland Interior Criteria, the woodland unit appears to meet this criterion to be considered Significant in the context of the Provincial Policy Statement. |
| <p>Proximity to Other Woodlands or Other Habitats</p> <ul style="list-style-type: none"> Woodlands that overlap, abut or are close to other significant natural heritage features or areas could be considered more valuable or significant than those that are not. Patches close to each other are of greater mutual benefit and value to wildlife. | <p>Woodlands should be considered significant if:</p> <ul style="list-style-type: none"> A portion of the woodland is located within a specific distance (<i>e.g.</i>, 30m) of a significant natural feature or fish habitat likely receiving ecological benefit from the woodland and the entire woodland meets the minimum area threshold (<i>e.g.</i>, 0.5-20ha, depending on circumstance) | <ul style="list-style-type: none"> The contiguous woodland feature which includes the property is not within a specific distance to a significant natural heritage feature that may be receiving benefit from the woodland. Therefore, according to the Proximity to Other Woodlands or Other Habitats Criteria, the woodland unit does not meet this criterion to be considered Significant in the context of the Provincial Policy Statement. |

| CRITERIA | STANDARDS | ASSESSMENT |
|---|--|--|
| <p>Linkages</p> <ul style="list-style-type: none"> • Linkages are important connections providing for movement between habitats. • Woodlands that are located between other significant features or areas can be considered to perform an important linkage function as “stepping stones” for movement between habitats. | <p>Woodlands should be considered significant if they:</p> <ul style="list-style-type: none"> • Are located within a defined natural heritage system or provide a connecting link between two other significant features, each of which is within a specified distance (e.g., 120m) and meets minimum area thresholds (e.g., 1-20ha, depending on circumstance) | <ul style="list-style-type: none"> • The woodland feature within the property is part of a contiguous woodland feature which extends from to the north and west of the property. • The contiguous woodland feature does not provide a linkage to another natural heritage feature (i.e., wetland, watercourse). Commercial and industrial, as well as municipal roads properties border the woodland feature along the southern and eastern boundary. • <i>Therefore, according to the Linkages Criteria, the woodland unit does not appear Significant in the context of the Provincial Policy Statement.</i> |
| <p>Water Protection</p> <ul style="list-style-type: none"> • Source water protection is important. • Natural hydrological processes should be maintained. | <p>Woodlands should be considered significant if they:</p> <ul style="list-style-type: none"> • Are located within a sensitive or threatened watershed or a specific distance (e.g., 50m or top of valley bank if greater) or a sensitive groundwater discharge, sensitive recharge, sensitive headwater area, watercourse or fish habitat and meet minimum area thresholds (e.g., 0.5-10ha, depending on circumstance) | <ul style="list-style-type: none"> • According to the Simcoe County Interactive Mapping tool, the woodland is within a Significant Groundwater Recharge Area. • <i>Therefore, according to the Water Protection Criteria, the woodland unit appears to meet this criterion to be considered Significant in the context of the Provincial Policy Statement.</i> |
| <p>Woodland Diversity</p> <ul style="list-style-type: none"> • Certain woodland species have had major reductions in representation on the landscape and may need special consideration. • More native diversity is more valuable than less diversity. | <p>Woodlands should be considered significant if they have:</p> <ul style="list-style-type: none"> • A naturally occurring composition of native forest species that have declined significantly south and east of the Canadian Shield and meet minimum area thresholds (e.g., 1-20ha, depending on circumstance) • A high native diversity through a combination of composition and terrain (e.g., a woodland extending from a hilltop to a valley bottom or to opposite slopes) and meet minimum area thresholds (e.g., 2-20ha, depending on circumstance) | <ul style="list-style-type: none"> • The woodland unit does not contain native forest tree species that have declined significantly. • The property is characterized by a plantation which is not considered to be naturally occurring. • <i>Therefore, according to the Woodland Diversity Criteria, the woodland unit does not appear to meet this criterion to be considered Significant in the context of the Provincial Policy Statement. For the purpose of this assessment it will be considered regardless.</i> |

| CRITERIA | STANDARDS | ASSESSMENT |
|--|--|--|
| Uncommon Characteristics Criteria | | |
| <ul style="list-style-type: none"> Woodlands that are uncommon in terms of species composition, cover type, age or structure should be protected. Older woodlands (i.e., woodlands greater than 100 years old) are particularly valuable for several reasons, including their contributions to genetic, species and ecosystem diversity. | <p>Woodlands should be considered significant if they have:</p> <ul style="list-style-type: none"> A unique species composition or the site is represented by less than 5% overall in woodland area and meets minimum area thresholds (e.g., 0.5ha, depending on circumstance) A vegetation community with a provincial ranking of S1, S2 or S3 (as ranked by the NHIC and meet minimum area thresholds (e.g., 0.5ha, depending on circumstance) Habitat (e.g., with 10 individual stems or 100m² of leaf coverage) of a rare, uncommon or restricted woodland plant species and meet minimum area thresholds (e.g., 0.5ha, depending on circumstance): vascular plant species for which the NHIC's Southern Ontario Coefficient of Conservatism is 8, 9 or 10; tree species of restricted distribution such as sassafras or rock elm; species existing only in a limited number of sites within the planning area Characteristics of older woodlands or woodlands with larger tree size structure in native species meet minimum area thresholds (e.g., 1-10ha, depending on circumstance): older woodlands could be defined as having 10 or more trees/ha greater than 100 years old; larger tree size structure could be defined as 10 or more trees/ha at least 50cm in diameter, or a basal area of 8 or more m²/ha in trees that are at least 40cm in diameter | <ul style="list-style-type: none"> The contiguous woodland feature which includes the property is not uncommon in terms of species composition, cover types (i.e., composition of ELC vegetation types), structure or age. Therefore, according to the 'Uncommon Characteristics Criteria', the woodland unit does not meet this criterion to be considered Significant in the context of the Provincial Policy Statement. |
| Economic and Social Function Values Criteria | | |
| <ul style="list-style-type: none"> Woodlands that have high economic or social values through particular site characteristics or deliberate management should be protected. | <p>Woodlands should be considered significant if they have:</p> <ul style="list-style-type: none"> High productivity in terms of economically viable products together with continuous native natural attributes and meet minimum area thresholds (e.g., 2-20ha, depending on circumstance) A high value in special services such as air-quality improvement or recreation at a sustainable level that is compatible with long-term retention and meet minimum area thresholds (e.g., 0.2-10ha, depending on circumstance) Important identified appreciation, education, cultural or historical value and meet minimum area thresholds (e.g., 0.2-10ha, depending on circumstance) | <ul style="list-style-type: none"> The woodland unit is not considered to have high value in "special services", such as water quality improvement. There is no extraction of economically viable products, or formal education known to occur in the area. Therefore, according to the 'Economic and Social Function Values Criteria', the woodland unit within the study area does not meet this criterion to be considered Significant in the context of the Provincial Policy Statement. |

Significant Wildlife Habitat Criteria Schedule for Ecoregion 6E

Table 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 | |
| <p>Waterfowl Stopover and Staging Areas (Terrestrial)</p> <p>Rationale: Habitat important to migrating waterfowl.</p> | 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). <ul style="list-style-type: none"> 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. <p><u>Information Sources</u></p> <ul style="list-style-type: none"> 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 (e.g. EHJV implementation plan) Field Naturalist Clubs Ducks Unlimited Canada Natural Heritage Information Centre (NHIC) Waterfowl Concentration Area | Studies carried out and verified presence of an annual concentration of any listed species, evaluation methods to follow “Bird and Bird Habitats: Guidelines for Wind Power Projects” <ul style="list-style-type: none"> 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). SWHMiST Index #7 provides development effects and mitigation measures. | The property does not contain appropriate ELC ecosites and/or other natural features with potential to provide this function. No further evaluation undertaken. |
| <p>Waterfowl Stopover and Staging Areas (Aquatic)</p> <p>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.</p> | 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 | <ul style="list-style-type: none"> 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). <p><u>Information Sources</u></p> <ul style="list-style-type: none"> 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 (e.g. EHJV implementation plan) 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: <ul style="list-style-type: none"> 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 SWHTG Appendix K are significant wildlife habitat. Evaluation methods to follow “Bird and Bird Habitats: Guidelines for Wind Power Projects”. Annual Use of Habitat is Documented from Information Sources or Field Studies (Annual can be based on completed studies or determined from past surveys with species numbers and dates recorded). SWHMiST Index #7 provides development effects and mitigation measures. | The property does not contain appropriate ELC ecosites and/or other natural features with potential to provide this function. No further evaluation undertaken. |

| Wildlife Habitat | Wildlife Species | Candidate SWH | | Confirmed SWH | Assessment |
|---|--|---|--|---|--|
| | | ELC Ecosite Codes | Habitat Criteria and Information Sources | Defining Criteria | |
| <p>Shorebird Migratory Stopover Area</p> <p>Rationale: High quality shorebird stopover habitat is extremely rare and typically has a long history of use.</p> | <p>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</p> | <p>BBO1 BBO2 BBS1 BBS2 BBT1 BBT2 SDO1 SDS2 SDT1 MAM1 MAM2 MAM3 MAM4 MAM5</p> | <ul style="list-style-type: none"> 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. <p><u>Information Sources</u></p> <ul style="list-style-type: none"> 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 | <p>Studies confirming:</p> <ul style="list-style-type: none"> 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”. SWHMiST Index #8 provides development effects and mitigation measures. | <p>The property does not contain appropriate ELC ecosites and/or other natural features with potential to provide this function. No further evaluation undertaken.</p> |
| <p>Raptor Wintering Area</p> <p>Rationale: Sites used by multiple species of individuals and used annually are most significant</p> | <p>Rough-legged Hawk Red-tailed Hawk Northern Harrier American Kestrel Snowy Owl</p> <p>Special Concern: Short-eared Owl Bald Eagle</p> | <p><u>Hawks/Owls:</u> Combination of ELC Community Series; need to have present one Community Series from each land class; Forest: FOD, FOM, FOC.</p> <p>Upland: CUM; CUT; CUS; CUW.</p> <p><u>Bald Eagle:</u> Forest community Series: FOD, FOM, FOC, SWD, SWM or SWC on shoreline areas adjacent to large rivers or adjacent to lakes with open water (hunting area).</p> | <ul style="list-style-type: none"> 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 windswept with limited snow depth or accumulation. Eagle sites have open water, large trees and snags available for roosting. <p><u>Information Sources:</u></p> <ul style="list-style-type: none"> 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. | <p>Studies confirm the use of these habitats by:</p> <ul style="list-style-type: none"> 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”. SWHMiST Index #10 and #11 provides development effects and mitigation measures. | <p>The property does not contain an appropriate combination of ELC communities (<i>i.e.</i>, lack of fields). No further evaluation undertaken.</p> |
| <p>Bat Hibernacula</p> | <p>Big Brown Bat</p> | <p>Bat Hibernacula may be</p> | <ul style="list-style-type: none"> Hibernacula may be found in caves, mine shafts, | <ul style="list-style-type: none"> All sites with confirmed hibernating bats are SWH. | <p>The property does not contain appropriate ELC</p> |

| Wildlife Habitat | Wildlife Species | Candidate SWH | | Confirmed SWH | Assessment |
|--|---|---|---|---|---|
| | | ELC Ecosite Codes | Habitat Criteria and Information Sources | Defining Criteria | |
| <p>Rationale: Bat hibernacula are rare habitats in all Ontario landscapes.</p> | Tri-coloured Bat | <p>found in these ecosites: CCR1 CCR2 CCA1 CCA2 (Note: buildings are not considered to be SWH)</p> | <p>underground foundations and Karsts.</p> <ul style="list-style-type: none"> Active mine sites should not be considered as SWH The locations of bat hibernacula are relatively poorly known. <p><u>Information Sources</u></p> <ul style="list-style-type: none"> 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. | <ul style="list-style-type: none"> 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. SWHMiST Index #1 provides development effects and mitigation measures. | ecosites and/or other natural features with potential to provide this function. No further evaluation undertaken. |
| <p>Bat Maternity Colonies</p> <p>Rationale: Known locations of forested bat maternity colonies are extremely rare in all Ontario landscapes.</p> | Big Brown Bat Silver-haired Bat | <p>Maternity colonies considered SWH are found in forested Ecosites.</p> <p>All ELC Ecosites in ELC Community Series: FOD FOM SWD SWM</p> | <ul style="list-style-type: none"> 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 or class 1 or 2. 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. <p><u>Information Sources</u></p> <ul style="list-style-type: none"> OMNRF for possible locations and contact for local experts University Biology Departments with bat experts. | <ul style="list-style-type: none"> Maternity Colonies with confirmed use by; <ul style="list-style-type: none"> >10 Big Brown Bats >5 Adult Female Silver-haired Bats The area of the habitat includes the entire woodland or a forest stand ELC Ecosite or an Ecoelement containing the maternity colonies. Evaluation methods for maternity colonies should be conducted following methods outlined in the “Bats and Bat Habitats: Guidelines for Wind Power Projects”. SWHMiST Index #12 provides development effects and mitigation measures. | The property contains mature forest communities, however is further characterized as a Coniferous Plantation (CUP). Generally, conifer plantations are not recognized as providing suitable habitat for bat species due to the evident lack of features and closed canopy conditions. CUP and FOC are not part of the ELC Ecosite Codes listed. No further evaluation undertaken. |
| <p>Turtle Wintering Areas</p> <p>Rationale: Generally sites are the only known sites in the area. Sites with the highest number of individuals are most significant.</p> | Midland Painted Turtle Special Concern: Northern Map Turtle Snapping Turtle | <p>Snapping and Midland Painted Turtles; ELC Community Classes; SW, MA, OA and SA, ELC Community Series; FEO and BOO</p> <p>Northern Map Turtle; Open Water areas such as deeper rivers or streams and lakes with current can also be used as over-wintering habitat.</p> | <ul style="list-style-type: none"> For most turtles, wintering areas are in the same general area as their core habitat. Water has to be deep enough not to freeze and have soft mud substrates. Over-wintering sites are permanent water bodies, large wetlands, and bogs or fens with adequate Dissolved Oxygen. Man-made ponds such as sewage lagoons or storm water ponds should not be considered SWH. <p><u>Information Sources</u></p> <ul style="list-style-type: none"> 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) | <ul style="list-style-type: none"> 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 SWHMiST Index #28 provides development effects and mitigation measures for turtle wintering habitat. | The property does not contain appropriate ELC ecosites and/or other natural features with potential to provide this function. No further evaluation undertaken. |
| Reptile | Snakes: | For all snakes, habitat may | <ul style="list-style-type: none"> For snakes, hibernation takes place in sites located | Studies confirming: | The property does not contain natural features |

| Wildlife Habitat | Wildlife Species | Candidate SWH | | Confirmed SWH | Assessment |
|---|--|--|--|---|---|
| | | ELC Ecosite Codes | Habitat Criteria and Information Sources | Defining Criteria | |
| <p>Hibernaculum</p> <p>Rationale: Generally sites are the only known sites in the area. Sites with the highest number of individuals are most significant.</p> | <p>Eastern Gartersnake Northern Watersnake Northern Red-bellied Snake Northern Brownsnake Smooth Green Snake Northern Ring-necked Snake</p> <p>Special Concern: Milksnake Eastern Ribbonsnake</p> <p>Lizard: Special Concern (Southern Shield population): Five-lined Skink</p> | <p>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.</p> <p>Observations or congregations of snakes on sunny warm days in the spring or fall is a good indicator.</p> <p>For Five-lined Skink, ELC Community Series of FOD and FOM and Ecosites: FOC1 FOC3</p> | <p>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.</p> <ul style="list-style-type: none"> • 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. <p>Information Sources</p> <ul style="list-style-type: none"> • 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 | <ul style="list-style-type: none"> • Presence of snake hibernacula used by a minimum of five individuals of a snake sp. or; individuals of two or more snake spp. • Congregations of a minimum of five individuals of a snake sp. or; individuals of two or more snake spp. near potential hibernacula (e.g. foundation or rocky slope) on sunny warm days in Spring (Apr/May) and Fall (Sept/Oct) • Note: If there are Special Concern Species present, then site is SWH • Note: Sites for hibernation possess specific habitat parameters (e.g. temperature, humidity, etc.) and consequently are used annually, often by many of the same individuals of a local population (i.e. strong hibernation site fidelity). Other critical life processes (e.g. mating) often take place in close proximity to hibernacula. The feature in which the hibernacula is located plus a 30 m radius area is the SWH. • SWHMiST Index #13 provides development effects and mitigation measures for snake hibernacula. • Presence of any active hibernaculum for skink is significant. • SWHMiST Index #37 provides development effects and mitigation measures for five-lined skink wintering habitat. | <p>with potential to provide this function. No notable features with potential to provide this function have been observed on the property. No further evaluation undertaken.</p> |
| <p>Colonially -Nesting Bird Breeding Habitat (Bank and Cliff)</p> <p>Rationale: Historical use and number of nests in a colony make this habitat significant. An identified colony can be very important to local populations. All swallow population are declining in Ontario.</p> | <p>Cliff Swallow Northern Rough-winged Swallow (this species is not colonial but can be found in Cliff Swallow colonies)</p> | <p>Eroding banks, sandy hills, borrow pits, steep slopes, and sand piles. Cliff faces, bridge abutments, silos, barns.</p> <p>Habitat found in the following ecosites: CUM1 CUT1 CUS1 BLO1 BLS1 BLT1 CLO1 CLS1 CLT1</p> | <ul style="list-style-type: none"> • 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. <p>Information Sources</p> <ul style="list-style-type: none"> • Reports and other information available from Conservation Authorities. • Ontario Breeding Bird Atlas • Bird Studies Canada; <i>NatureCounts</i> http://www.birdscanada.org/birdmon/ • Field Naturalist Clubs. | <p>Studies confirming:</p> <ul style="list-style-type: none"> • 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”. • SWHMiST Index #4 provides development effects and mitigation measures. | <p>The property does not contain appropriate ELC ecosites and/or other natural features with potential to provide this function. No further evaluation undertaken.</p> |
| <p>Colonially-Nesting</p> | <p>Great Blue Heron</p> | <p>SWM2</p> | <ul style="list-style-type: none"> • Nests in live or dead standing trees in wetlands, lakes, | <p>Studies confirming:</p> | <p>The property does not contain appropriate ELC</p> |

| Wildlife Habitat | Wildlife Species | Candidate SWH | | Confirmed SWH | Assessment |
|--|--|---|---|--|--|
| | | ELC Ecosite Codes | Habitat Criteria and Information Sources | Defining Criteria | |
| <p>Bird Breeding Habitat (Tree/Shrubs)</p> <p>Rationale: Large colonies are important to local bird population, typically sites are only known colony in area and are used annually.</p> | <p>Black-crowned Night-Heron Great Egret Green Heron</p> | <p>SWM3 SWM5 SWM6 SWD1 SWD2 SWD3 SWD4 SWD5 SWD6 SWD7 FET1</p> | <p>islands, and peninsulas. Shrubs and occasionally emergent vegetation may also be used.</p> <ul style="list-style-type: none"> • Most nests in trees are 11 to 15 m from ground, near the top of the tree. <p><u>Information Sources</u></p> <ul style="list-style-type: none"> • 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 | <ul style="list-style-type: none"> • 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. • SWHMiST Index #5 provides development effects and mitigation measures. | <p>ecosites and/or other natural features with potential to provide this function. No further evaluation undertaken.</p> |
| <p>Colonially-Nesting Bird Breeding Habitat (Ground)</p> <p>Rationale: Colonies are important to local bird population, typically sites are only known colony in area and are used annually.</p> | <p>Herring Gull Great Black-backed Gull Little Gull Ring-billed Gull Common Tern Caspian Tern Brewer’s Blackbird</p> | <p>Any rocky island or peninsula (natural or artificial) within a lake or large river (two-lined on a 1:50,000 NTS map).</p> <p>Close proximity to watercourses in open fields or pastures with scattered trees or shrubs (Brewer’s Blackbird)</p> <p>MAM1 – 6; MAS1 – 3; CUM CUT CUS</p> | <ul style="list-style-type: none"> • 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. <p><u>Information Sources</u></p> <ul style="list-style-type: none"> • 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 | <p>Studies confirming:</p> <ul style="list-style-type: none"> • 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”. • SWHMiST Index #6 provides development effects and mitigation measures. | <p>The property does not contain appropriate ELC ecosites and/or other natural features with potential to provide this function. No further evaluation undertaken.</p> |
| <p>Migratory</p> | <p>Painted Lady</p> | <p>Combination of ELC</p> | <p>A butterfly stopover area will be a minimum of 10 ha in</p> | <p>Studies confirm:</p> | <p>The property is not location within 5km of Lake</p> |

| Wildlife Habitat | Wildlife Species | Candidate SWH | | Confirmed SWH | Assessment |
|--|---|--|---|---|---|
| | | ELC Ecosite Codes | Habitat Criteria and Information Sources | Defining Criteria | |
| <p>Butterfly Stopover Areas</p> <p>Rationale: Butterfly stopover areas are extremely rare habitats and are biologically important for butterfly species that migrate south for the winter.</p> | <p>Red Admiral</p> <p><u>Special Concern</u> Monarch</p> | <p>Community Series; need to have present one Community Series from each land class:</p> <p><u>Field:</u> CUM CUT CUS</p> <p><u>Forest:</u> FOC FOD FOM CUP</p> <p>Anecdotally, a candidate site for butterfly stopover will have a history of butterflies being observed.</p> | <p>size with a combination of field and forest habitat present, and will be located within 5 km of Lake Ontario.</p> <ul style="list-style-type: none"> 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. <p><u>Information Sources</u></p> <ul style="list-style-type: none"> OMNRF (NHIC) Agriculture Canada in Ottawa may have list of butterfly experts. Field Naturalist Clubs Toronto Entomologists Association Conservation Authorities | <ul style="list-style-type: none"> 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. SWHMiST Index #16 provides development effects and mitigation measures. | <p>Ontario. No further evaluation undertaken.</p> |
| <p>Landbird Migratory Stopover Areas</p> <p>Rationale: Sites with a high diversity of species as well as high numbers are most significant.</p> | <p>All migratory songbirds. Canadian Wildlife Service Ontario website.</p> <p>All migratory songbirds. Canadian Wildlife Service Ontario website:</p> | <p>All Ecosites associated with these ELC Community Series;</p> <p>FOC FOM FOD SWC SWM SWD</p> | <p>Woodlots need to be >10 ha in size and within 5 km of Lake Ontario.</p> <ul style="list-style-type: none"> 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 . <p><u>Information Sources</u></p> <ul style="list-style-type: none"> Bird Studies Canada Ontario Nature Local birders and naturalist club Ontario Important Bird Areas (IBA) Program | <p>Studies confirm:</p> <ul style="list-style-type: none"> 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". SWHMiST Index #9 provides development effects. | <p>The property is not location within 5km of Lake Ontario. No further evaluation undertaken.</p> |
| <p>Deer Yarding</p> | <p>White-tailed Deer</p> | <p>Note: OMNRF to determine</p> | <ul style="list-style-type: none"> Deer yarding areas or winter concentration areas | <p>No Studies Required:</p> | <p>The property is not mapped as a Deer Yarding</p> |

| Wildlife Habitat | Wildlife Species | Candidate SWH | | Confirmed SWH | Assessment |
|--|--------------------------|--|---|--|--|
| | | ELC Ecosite Codes | Habitat Criteria and Information Sources | Defining Criteria | |
| <p>Areas</p> <p>Rationale: 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.</p> | | <p>this habitat. ELC Community Series providing a thermal cover component for a deer yard would include; FOM, FOC, SWM and SWC.</p> <p>Or these ELC Ecosites; CUP2 CUP3 FOD3 CUT</p> | <p>(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.</p> <ul style="list-style-type: none"> 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. | <ul style="list-style-type: none"> 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 in Table 1.4.1 of this Schedule. SWHMiST Index #2 provides development effects and mitigation measures. | <p>Area. No further evaluation undertaken.</p> |
| <p>Deer Winter Congregation Areas</p> <p>Rationale: 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.</p> | <p>White-tailed Deer</p> | <p>All Forested Ecosites with these ELC Community Series; FOC FOM FOD SWC SWM SWD</p> <p>Conifer plantations much smaller than 50 ha may also be used.</p> | <ul style="list-style-type: none"> 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 within Table 1.1 of this Schedule. Large woodlots > 100ha and up to 1500 ha are known to be used annually by densities of deer that range from 0.1-1.5 deer/ha. Woodlots with high densities of deer due to artificial feeding are not significant. <p><u>Information Sources</u></p> <ul style="list-style-type: none"> MNRF District Offices LIO/NRVIS | <p>Studies confirm:</p> <ul style="list-style-type: none"> 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 in Table 1.4.1 of this Schedule. SWHMiST Index #2 provides development effects and mitigation measures. | <p>N/A – Refer to Deer Yarding Area</p> |

Table 5.2.1 Rare Vegetation Communities

| Rare Vegetation Community | Candidate SWH | | | Confirmed SWH | Assessment |
|--|--|---|--|---|--|
| | ELC Ecosite Code | Habitat Description | Detailed Information and Sources | Defining Criteria | |
| <p>Cliffs and Talus Slopes</p> <p>Rationale: Cliffs and Talus Slopes are extremely rare habitats in Ontario.</p> | <p>Any ELC Ecosite within Community Series:</p> <p>TAO TAS TAT CLO CLS CLT</p> | <p>A Cliff is vertical to near vertical bedrock >3m in height.</p> <p>A Talus Slope is rock rubble at the base of a cliff made up of coarse rocky debris.</p> | <p>Most cliff and talus slopes occur along the Niagara Escarpment.</p> <p><u>Information Sources</u></p> <ul style="list-style-type: none"> 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 | <ul style="list-style-type: none"> Confirm any ELC Vegetation Type for Cliffs or Talus Slopes SWHMiST Index #21 provides development effects and mitigation measures. | <p>The property does not contain appropriate ELC ecosites and/or other natural features with potential to provide this function. No further evaluation undertaken.</p> |
| <p>Sand Barren</p> <p>Rationale: Sand barrens are rare in Ontario and support rare species. Most Sand Barrens have been lost due to cottage development and forestry</p> | <p>ELC Ecosites:</p> <p>SBO1 SBS1 SBT1</p> <p>Vegetation cover varies from patchy and barren to continuous meadow (SBO1), thicket-like (SBS1), or more closed and treed (SBT1). Tree cover always ≤ 60%.</p> | <p>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%.</p> | <p>A sand barren area >0.5ha in size.</p> <p><u>Information Sources</u></p> <ul style="list-style-type: none"> MNRF Districts Natural Heritage Information Center (NHIC) has location information available on their website. Field Naturalist clubs Conservation Authorities | <ul style="list-style-type: none"> Confirm any ELC Vegetation Type for Sand Barrens Site must not be dominated by exotic or introduced species (<50% vegetative cover are exotic sp.) SWHMiST Index #20 provides development effects and mitigation measures. | <p>The property does not contain appropriate ELC ecosites and/or other natural features with potential to provide this function. No further evaluation undertaken.</p> |
| <p>Alvar</p> <p>Rationale: Alvars are extremely rare habitats in Ecoregion 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.</p> | <p>ALO1 ALS1 ALT1 FOC1 FOC2 CUM2 CUS2 CUT2-1 CUW2</p> <p>Five Alvar Species:</p> <ol style="list-style-type: none"> <i>Carex crawei</i> <i>Panicum philadelphicum</i> <i>Eleocharis compressa</i> <i>Scutellaria parvula</i> <i>Trichostema brachiatum</i> <p>These indicator species are very specific to Alvars within Ecoregion 6E.</p> | <p>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.</p> | <p>An Alvar site > 0.5 ha in size.</p> <p><u>Information Sources</u></p> <ul style="list-style-type: none"> 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 | <ul style="list-style-type: none"> 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. SWHMiST Index #17 provides development effects and mitigation measures. | <p>The property does not contain appropriate ELC ecosites and/or other natural features with potential to provide this function. No further evaluation undertaken.</p> |

| Rare Vegetation Community | Candidate SWH | | | Confirmed SWH | Assessment |
|---|---|---|--|--|--|
| | ELC Ecosite Code | Habitat Description | Detailed Information and Sources | Defining Criteria | |
| <p>Old Growth Forest</p> <p>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.</p> | <p>Forest Community Series: FOD FOC FOM SWD SWC SWM</p> | <p>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.</p> | <p>Woodland areas 30 ha or greater in size or with at least 10 ha interior habitat assuming 100 m buffer at edge of forest.</p> <p><u>Information Sources</u></p> <ul style="list-style-type: none"> • 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 | <p>Field Studies will determine:</p> <ul style="list-style-type: none"> • If dominant trees species are >140 years old, then the area containing these trees is Significant Wildlife Habitat. • 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 eclement 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. • SWHMiST Index #23 provides development effects and mitigation measures. | <p>Forested areas of the property do not contain characteristics of Old Growth Forest. No further evaluation undertaken.</p> |
| <p>Savannah</p> <p>Rationale: Savannahs are extremely rare habitats in Ontario.</p> | <p>TPS1 TPS2 TPW1 TPW2 CUS2</p> | <p>A Savannah is a tallgrass prairie habitat that has tree cover between 25 – 60%.</p> | <p>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.</p> <p><u>Information Sources</u></p> <ul style="list-style-type: none"> • Natural Heritage Information Center (NHIC) has location information available on their website • OMNRF Districts • Field Naturalist clubs • Conservation Authorities | <p>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.</p> <ul style="list-style-type: none"> • Area of the ELC Ecosite is the SWH. • Site must not be dominated by exotic or introduced species (<50% vegetative cover are exotic sp.). • SWHMiST Index #18 provides development effects and mitigation measures. | <p>The property does not contain appropriate ELC ecosites and/or other natural features with potential to provide this function. No further evaluation undertaken.</p> |
| <p>Tallgrass Prairie</p> <p>Rationale: Tallgrass Prairies are extremely rare habitats in Ontario.</p> | <p>TPO1 TPO2</p> | <p>A Tallgrass Prairie has ground cover dominated by prairie grasses. An open Tallgrass Prairie habitat has < 25% tree cover.</p> | <p>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.</p> <p><u>Information Sources</u></p> <ul style="list-style-type: none"> • Natural Heritage Information Center (NHIC) has location information available on their website • OMNRF Districts • Field Naturalist clubs • Conservation Authorities | <p>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.</p> <ul style="list-style-type: none"> • Area of the ELC Ecosite is the SWH. • Site must not be dominated by exotic or introduced species (<50% vegetative cover are exotic sp.). • SWHMiST Index #19 provides development effects and mitigation measures. | <p>The property does not contain appropriate ELC ecosites and/or other natural features with potential to provide this function. No further evaluation undertaken.</p> |
| <p>Other Rare Vegetation Communities</p> <p>Rationale: Plant communities that often contain rare species which depend on the habitat for survival.</p> | <p>Provincially Rare S1, S2 and S3 vegetation communities are listed in Appendix M of the SWHTG. Any ELC Ecosite Code that has a possible ELC Vegetation Type that is Provincially Rare is Candidate SWH.</p> | <p>Rare Vegetation Communities may include beaches, fens, forest, marsh, barrens, dunes and swamps.</p> | <p>ELC Ecosite codes that have the potential to be a rare ELC Vegetation Type as outlined in appendix M</p> <p>The OMNRF/NHIC will have up to date listing for rare vegetation communities.</p> <p><u>Information Sources</u></p> <ul style="list-style-type: none"> • Natural Heritage Information Center (NHIC) has location information available on their website • OMNRF Districts • Field Naturalist clubs • Conservation Authorities | <p>Field studies should confirm if an ELC Vegetation Type is a rare vegetation community based on listing within Appendix M of SWHTG.</p> <ul style="list-style-type: none"> • Area of the ELC Vegetation Type polygon is the SWH. • SWHMiST Index #37 provides development effects and mitigation measures. | <p>The property does not contain appropriate ELC ecosites and/or other natural features with potential to provide this function. No further evaluation undertaken.</p> |

5.2.2 Specialized Habitat for Wildlife

| Wildlife Habitat | Wildlife Species | Candidate SHW | | Confirmed SWH | Assessment |
|--|---|---|---|--|--|
| | | ELC Ecosite Codes | Habitat Criteria and Information Sources | Defining Criteria | |
| <p>Waterfowl Nesting Area</p> <p>Rationale: Important to local waterfowl populations, sites with greatest number of species and highest number of individuals are significant.</p> | <p>American Black Duck Northern Pintail Northern Shoveler Gadwall Blue-winged Teal Green-winged Teal Wood Duck Hooded Merganser Mallard</p> | <p>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</p> | <p>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.</p> <ul style="list-style-type: none"> 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. <p><u>Information Sources</u></p> <ul style="list-style-type: none"> 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. | <p>Studies confirmed:</p> <ul style="list-style-type: none"> 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. SWHMiST Index #25 provides development effects and mitigation measures. | <p>The property does not contain appropriate ELC ecosites and/or other natural features with potential to provide this function. No further evaluation undertaken.</p> |
| <p>Bald Eagle and Osprey Nesting, Foraging and Perching Habitat</p> <p>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.</p> | <p>Osprey Special Concern Bald Eagle</p> | <p>ELC Forest Community Series: FOD, FOM, FOC, SWD, SWM and SWC directly adjacent to riparian areas – rivers, lakes, ponds and wetlands</p> | <p>Nests are associated with lakes, ponds, rivers or wetlands along forested shorelines, islands, or on structures over water.</p> <ul style="list-style-type: none"> 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). <p><u>Information Sources</u></p> <ul style="list-style-type: none"> 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 | <p>Studies confirm the use of these nests by:</p> <ul style="list-style-type: none"> 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”. SWHMiST Index #26 provides development effects and mitigation measures. | <p>The property is not expected to be providing this function. No nests have been observed on the property. No further evaluation undertaken.</p> |

| Wildlife Habitat | Wildlife Species | Candidate SHW | | Confirmed SWH | Assessment |
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| | | ELC Ecosite Codes | Habitat Criteria and Information Sources | Defining Criteria | |
| <p>Woodland Raptor Nesting Habitat</p> <p><u>Rationale:</u> Nests sites for these species are rarely identified; these area sensitive habitats and are often used annually by these species.</p> | <p>Northern Goshawk Cooper’s Hawk Sharp-shinned Hawk Red-shouldered Hawk Barred Owl Broad-winged Hawk</p> | <p>May be found in all forested ELC Ecosites. May also be found in SWC, SWM, SWD and CUP3</p> | <p>All natural or conifer plantation woodland/forest stands >30ha with >10ha of interior habitat. Interior habitat determined with a 200m buffer</p> <ul style="list-style-type: none"> 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. <p><u>Information Sources</u></p> <ul style="list-style-type: none"> 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. | <p>Studies confirm:</p> <ul style="list-style-type: none"> 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 28 ha 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. SWHMiST Index #27 provides development effects and mitigation measures. | <p>The property is not expected to be providing this function. No nests have been observed on the property. No further evaluation undertaken.</p> |
| <p>Turtle Nesting Areas</p> <p><u>Rationale:</u> These habitats are rare and when identified will often be the only breeding site for local populations of turtles.</p> | <p>Midland Painted Turtle</p> <p><u>Special Concern Species</u> Northern Map Turtle Snapping Turtle</p> | <p>Exposed mineral soil (sand or gravel) areas adjacent (<100m) or within the following ELC Ecosites: MAS1 MAS2 MAS3 SAS1 SAM1 SAF1 BOO1 FEO1</p> | <ul style="list-style-type: none"> 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. <p><u>Information Sources</u></p> <ul style="list-style-type: none"> 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 | <p>Studies confirm:</p> <ul style="list-style-type: none"> 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. SWHMiST Index #28 provides development effects and mitigation measures for turtle nesting habitat. | <p>The property does not contain appropriate ELC ecosites and/or other natural features with potential to provide this function. No further evaluation undertaken.</p> |

| Wildlife Habitat | Wildlife Species | Candidate SHW | | Confirmed SWH | Assessment |
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| | | ELC Ecosite Codes | Habitat Criteria and Information Sources | Defining Criteria | |
| <p>Seeps and Springs</p> <p>Rationale: Seeps/Springs are typical of headwater areas and are often at the source of coldwater streams.</p> | <p>Wild Turkey Ruffed Grouse Spruce Grouse White-tailed Deer Salamander spp.</p> | <p>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.</p> | <p>Any forested area (with <25% meadow/field/pasture) within the headwaters of a stream or river system.</p> <ul style="list-style-type: none"> Seeps and springs are important feeding and drinking areas especially in the winter will typically support a variety of plant and animal species. <p><u>Information Sources</u></p> <ul style="list-style-type: none"> Topographical Map Thermography Hydrological surveys conducted by Conservation Authorities and MOE. Field Naturalists clubs and landowners. Municipalities and Conservation Authorities may have drainage maps and headwater areas mapped. | <p>Field Studies confirm:</p> <ul style="list-style-type: none"> Presence of a site with 2 or more seeps/springs should be considered SWH. The area of a 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. SWHMiST Index #30 provides development effects and mitigation measures. | <p>No seeps or springs have been observed on the property. No further evaluation undertaken.</p> |
| <p>Amphibian Breeding Habitat (Woodland).</p> <p>Rationale: These habitats are extremely important to amphibian biodiversity within a landscape and often represent the only breeding habitat for local amphibian populations.</p> | <p>Eastern Newt Blue-spotted Salamander Spotted Salamander Gray Treefrog Spring Peeper Western Chorus Frog Wood Frog</p> | <p>All Ecosites associated with these ELC Community Series; FOC FOM FOD SWC SWM SWD</p> <p>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.</p> | <ul style="list-style-type: none"> 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. <p><u>Information Sources</u></p> <ul style="list-style-type: none"> 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 | <p>Studies confirm;</p> <ul style="list-style-type: none"> 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. SWHMiST Index #14 provides development effects and mitigation measures. | <p>The property does not contain appropriate ELC ecosites and/or other natural features with potential to provide this function. No further evaluation undertaken.</p> |

| Wildlife Habitat | Wildlife Species | Candidate SHW | | Confirmed SWH | Assessment |
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| | | ELC Ecosite Codes | Habitat Criteria and Information Sources | Defining Criteria | |
| <p>Amphibian Breeding Habitat (Wetlands)</p> <p>Rationale: Wetlands supporting breeding for these amphibian species are extremely important and fairly rare within Central Ontario landscapes.</p> | <p>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</p> | <p>ELC Community Classes SW, MA, FE, BO, OA and SA.</p> <p>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.</p> | <ul style="list-style-type: none"> 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. <p><u>Information Sources</u></p> <ul style="list-style-type: none"> Ontario Herpetofaunal Summary Atlas (or other similar atlases) Canadian Wildlife Service Amphibian Road Surveys and Backyard Amphibian Call Count. OMNRF Districts and wetland evaluations Reports and other information available from Conservation Authorities | <p>Studies confirm:</p> <ul style="list-style-type: none"> 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. If a SWH is determined for Amphibian Breeding Habitat (Wetlands) then Movement Corridors are to be considered as outlined in Table 1.4.1 of this Schedule. SWHMiST Index #15 provides development effects and mitigation measures. | <p>The property does not contain appropriate ELC ecosites and/or other natural features with potential to provide this function. No further evaluation undertaken.</p> |
| <p>Woodland Area-Sensitive Bird Breeding Habitat</p> <p>Rationale: Large, natural blocks of mature woodland habitat within the settled areas of Southern Ontario are important habitats for area sensitive interior forest song birds.</p> | <p>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</p> <p>Special Concern: Cerulean Warbler Canada Warbler</p> | <p>All Ecosites associated with these ELC Community Series; FOC FOM FOD SWC SWM SWD</p> | <p>Habitats where interior forest breeding birds are breeding, typically large mature (>60 yrs old) forest stands or woodlots >30 ha.</p> <ul style="list-style-type: none"> Interior forest habitat is at least 200 m from forest edge habitat. <p><u>Information Sources</u></p> <ul style="list-style-type: none"> 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. | <p>Studies confirm:</p> <ul style="list-style-type: none"> Presence of nesting or breeding pairs of 3 or more of the listed wildlife species. Note: any site with breeding Cerulean Warblers or Canada Warblers is to be considered SWH. Conduct field investigations in spring and early summer when birds are singing and defending their territories. Evaluation methods to follow “Bird and Bird Habitats: Guidelines for Wind Power Projects”. SWHMiST Index #34 provides development effects and mitigation measures. | <p>Forest communities within the property do not meet the habitat criteria. Only two of the listed species (Ovenbird and Red-breasted Nuthatch) were documented within the property. No further evaluation undertaken.</p> |

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

| Wildlife Habitat | Wildlife Species | Candidate SHW | | Confirmed SWH | Assessment |
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| | | ELC Ecosite Codes | Habitat Criteria and Information Sources | Defining Criteria | |
| <p>Marsh Breeding Bird Habitat</p> <p>Rationale: Wetlands for these bird species are typically productive and fairly rare in Southern Ontario landscapes.</p> | <p>American Bittern Virginia Rail Sora Common Moorhen American Coot Pied-billed Grebe Marsh Wren Sedge Wren Common Loon Sandhill Crane Green Heron Trumpeter Swan</p> <p>Special Concern: Black Tern Yellow Rail</p> | <p>MAM1 MAM2 MAM3 MAM4 MAM5 MAM6 SAS1 SAM1 SAF1 FEO1 BOO1</p> <p>For Green Heron: All SW, MA and CUM1 sites.</p> | <ul style="list-style-type: none"> 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. <p><u>Information Sources</u></p> <ul style="list-style-type: none"> 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 | <p>Studies confirm:</p> <ul style="list-style-type: none"> 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”. SWHMiST Index #35 provides development effects and mitigation measures. | <p>The property does not contain appropriate ELC ecosites and/or other natural features with potential to provide this function. No further evaluation undertaken.</p> |
| <p>Open Country Bird Breeding Habitat Sources Defining Criteria</p> <p>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.</p> | <p>Upland Sandpiper Grasshopper Sparrow Vesper Sparrow Northern Harrier Savannah Sparrow</p> <p>Special Concern Short-eared Owl</p> | <p>CUM1 CUM2</p> | <p>Large grassland areas (includes natural and cultural fields and meadows) >30 ha.</p> <ul style="list-style-type: none"> 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. <p><u>Information Sources</u></p> <ul style="list-style-type: none"> Agricultural land classification maps, Ministry of Agriculture. Local bird clubs. Ontario Breeding Bird Atlas Reports and other information available from Conservation Authorities. | <p>Field Studies confirm:</p> <ul style="list-style-type: none"> Presence of nesting or breeding of 2 or more of the listed species. A field with 1 or more breeding Short-eared Owls is to be considered SWH. The area of SWH is the contiguous ELC ecosite field areas. Conduct field investigations of the most likely areas in spring and early summer when birds are singing and defending their territories. Evaluation methods to follow “Bird and Bird Habitats: Guidelines for Wind Power Projects”. SWHMiST Index #32 provides development effects and mitigation measures. | <p>The property does not contain appropriate ELC ecosites and/or other natural features with potential to provide this function. No further evaluation undertaken.</p> |
| <p>Shrub/Early Successional Bird Breeding Habitat</p> <p>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.</p> | <p>Indicator Spp: Brown Thrasher Clay-coloured Sparrow Common Spp. Field Sparrow Black-billed Cuckoo Eastern Towhee Willow Flycatcher</p> <p>Special Concern: Yellow-breasted Chat Golden-winged Warbler</p> | <p>CUT1 CUT2 CUS1 CUS2 CUW1 CUW2</p> <p>Patches of shrub ecosites can be complexed into a larger habitat for some bird species</p> | <p>Large field areas succeeding to shrub and thicket habitats >10ha in size.</p> <ul style="list-style-type: none"> 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. <p><u>Information Sources</u></p> <ul style="list-style-type: none"> Agricultural land classification maps, Ministry of Agriculture. Local bird clubs Ontario Breeding Bird Atlas Reports and other information available from Conservation Authorities. | <p>Field Studies confirm:</p> <ul style="list-style-type: none"> Presence of nesting or breeding of 1 of the indicator species and at least 2 of the common species. A habitat with breeding Yellow-breasted Chat or Golden-winged Warbler is to be considered as Significant Wildlife Habitat. The area of the SWH is the contiguous ELC ecosite field/thicket area. Conduct field investigations of the most likely areas in spring and early summer when birds are singing and defending their territories. Evaluation methods to follow “Bird and Bird Habitats: Guidelines for Wind Power Projects”. SWHMiST Index #33 provides development effects and mitigation measures. | <p>The property does not contain appropriate ELC ecosites and/or other natural features with potential to provide this function. No further evaluation undertaken.</p> |

| Wildlife Habitat | Wildlife Species | Candidate SHW | | Confirmed SWH | Assessment |
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| | | ELC Ecosite Codes | Habitat Criteria and Information Sources | Defining Criteria | |
| <p>Terrestrial Crayfish</p> <p>Rationale: Terrestrial Crayfish are only found within SW Ontario in Canada and their habitats are very rare.</p> | <p>Chimney or Digger Crayfish; (<i>Fallicambarus fodiens</i>)</p> <p>Devil Crayfish or Meadow Crayfish; (<i>Cambarus Diogenes</i>)</p> | <p>MAM1 MAM2 MAM3 MAM4 MAM5 MAM6 MAS1 MAS2 MAS3 SWD SWT SWM</p> <p>CUM1 with inclusions of above meadow marsh or swamp ecosites can be used by terrestrial crayfish.</p> | <p>Wet meadow and edges of shallow marshes (no minimum size) should be surveyed for terrestrial crayfish.</p> <ul style="list-style-type: none"> 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. <p><u>Information Sources</u></p> <ul style="list-style-type: none"> Information sources from "Conservation Status of Freshwater Crayfishes" by Dr. Premek Hamr for the WWF and CNF March 1998. | <p>Studies Confirm:</p> <ul style="list-style-type: none"> 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. SWHMiST Index #36 provides development effects and mitigation measures. | <p>The property does not contain appropriate ELC ecosites and/or other natural features with potential to provide this function. No further evaluation undertaken.</p> |
| <p>Special Concern and Rare Wildlife Species</p> <p>Rationale: These species are quite rare or have experienced significant population declines in Ontario.</p> | <p>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.</p> | <p>All plant and animal element occurrences (EO) within a 1 or 10km grid.</p> <p>Older element occurrences were recorded prior to GPS being available, therefore location information may lack accuracy.</p> | <p>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</p> <p><u>Information Sources</u></p> <ul style="list-style-type: none"> 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. | <p>Studies Confirm:</p> <ul style="list-style-type: none"> 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. SWHMiST Index #37 provides development effects and mitigation measures. | <p>Eastern Wood-pewee (Special Concern) was observed within the property. See appropriate sections in the main text of the EIS for further evaluation.</p> |

5.4 Animal Movement Corridors

| Wildlife Habitat | Wildlife Species | Candidate SHW | | Confirmed SWH | Assessment |
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| | | ELC Ecosite | Habitat Criteria and Information Sources | Defining Criteria | |
| <p>Amphibian Movement Corridors</p> <p>Rationale: Movement corridors for amphibians moving from their terrestrial habitat to breeding habitat can be extremely important for local populations.</p> | <p>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</p> | <p>Corridors may be found in all ecosites associated with water.</p> <ul style="list-style-type: none"> Corridors will be determined based on identifying the significant breeding habitat for these species in Table 1.1 | <p>Movement corridors between breeding habitat and summer habitat.</p> <ul style="list-style-type: none"> Movement corridors must be determined when Amphibian breeding habitat is confirmed as SWH from Table 1.2.2 (Amphibian Breeding Habitat –Wetland) of this Schedule. <p><u>Information Sources</u></p> <ul style="list-style-type: none"> MNRF District Office Natural Heritage Information Center (NHIC) Reports and other information available from Conservation Authorities. Field Naturalist Clubs | <ul style="list-style-type: none"> 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 <20m. Shorter corridors are more significant than longer corridors, however amphibians must be able to get to and from their summer and breeding habitat. SWHMiST Index #40 provides development effects and mitigation measures. | <p>Amphibian breeding habitat is not present within the property. No further evaluation undertaken.</p> |
| <p>Deer Movement Corridors</p> <p>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.</p> | <p>White-tailed Deer</p> | <p>Corridors may be found in all forested ecosites.</p> <p>A Project Proposal in Stratum II Deer Wintering Area has potential to contain corridors.</p> | <p>Movement corridor must be determined when Deer Wintering Habitat is confirmed as SWH from Table 1.1 of this schedule.</p> <ul style="list-style-type: none"> A deer wintering habitat identified by the OMNRF as SWH in Table 1.1 of this Schedule will have corridors that the deer use during fall migration and spring dispersion. Corridors typically follow riparian areas, woodlots, areas of physical geography (ravines, or ridges). <p><u>Information Sources</u></p> <ul style="list-style-type: none"> MNRF District Office Natural Heritage Information Center (NHIC). Reports and other information available from Conservation Authorities. Field Naturalist Clubs | <ul style="list-style-type: none"> 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. SWHMiST Index #39 provides development effects and mitigation measures. | <p>Deer Wintering Habitat has not been identified on the property. No further evaluation undertaken.</p> |

5.5 Exceptions for EcoRegion 6E

| EcoDistrict | Wildlife Habitat and Species | Candidate | | | Confirmed SWH | Assessment |
|--|--|---|--|---|---|--|
| | | Ecosites | Habitat Description | Habitat Criteria and Information | Defining Criteria | |
| <p>6E-14</p> <p>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.</p> | <p>Mast Producing Areas</p> <p>Black Bear</p> | <p>All Forested habitat represented by ELC Community Series:</p> <p>FOM FOD</p> | <ul style="list-style-type: none"> 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. | <p>Woodland ecosites >30ha with mast-producing tree species, either soft (cherry) or hard (oak and beech).</p> <p><u>Information Sources</u> Important forest habitat for black bears may be identified by OMNRF.</p> | <p>All woodlands > 30ha with a 50% composition of these ELC Vegetation Types are considered significant:</p> <p>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</p> <p>SWHMiST Index #3 provides development effects and mitigation measures.</p> | <p>The property is not located on the Bruce Peninsula. No further evaluation undertaken.</p> |
| <p>6E- 17</p> <p>Rationale: Sharp-tailed grouse only occur on Manitoulin Island in Eco-region 6E, Leks are an important habitat to maintain their population</p> | <p>Lek</p> <p>Sharp-tailed Grouse</p> | <p>CUM CUS CUT</p> | <ul style="list-style-type: none"> 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. | <p>Grasslands (field/meadow) are to be >15ha when adjacent to shrubland and >30ha when adjacent to deciduous woodland.</p> <ul style="list-style-type: none"> 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 <p><u>Information Sources</u></p> <ul style="list-style-type: none"> OMNRF district office Bird watching clubs Local landowners Ontario Breeding Bird Atlas | <p>Studies confirming lek habitat are to be completed from late March to June.</p> <ul style="list-style-type: none"> Any site confirmed with sharp-tailed grouse courtship activities is considered significant The field/meadow ELC ecosites plus a 200 m radius area with shrub or deciduous woodland is the lek habitat SWHMiST Index #32 provides development effects and mitigation measures | <p>The property is not located on Manitoulin Island. No further evaluation undertaken.</p> |



APPENDICES

- Appendix A: NVCA Regulation Mapping**
 - Appendix B: Township of Springwater Schedules**
 - Appendix C: Agency Consultation**
 - Appendix D: NHIC Mapping and Information**
 - Appendix E: Significant Woodland Mapping**
 - Appendix F: Conceptual Site Plan**
-
-

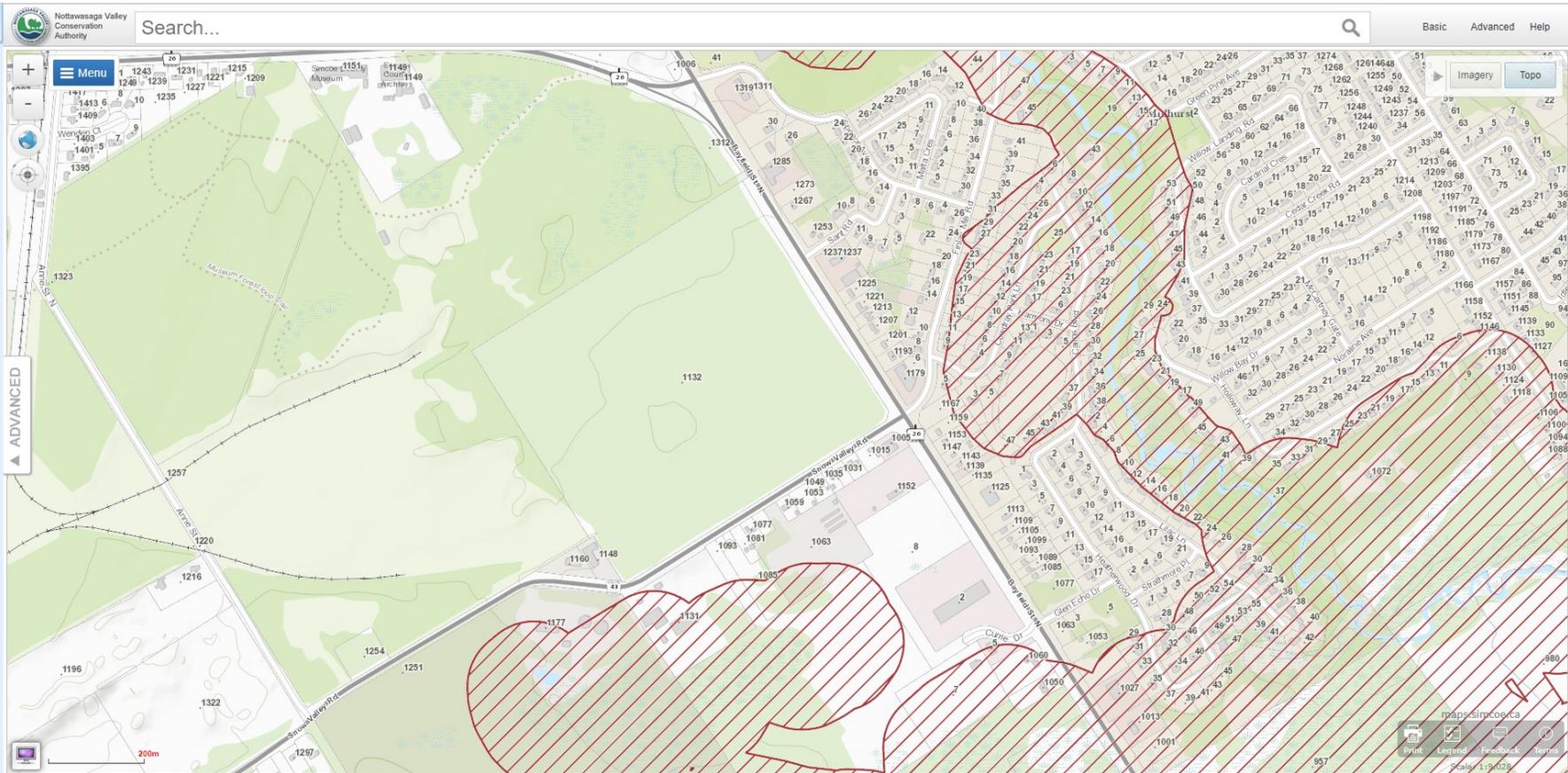


APPENDIX A

NVCA Regulation Mapping

NVCA Regulation Mapping

AEC18-107 Hasty Tract EIS





APPENDIX B

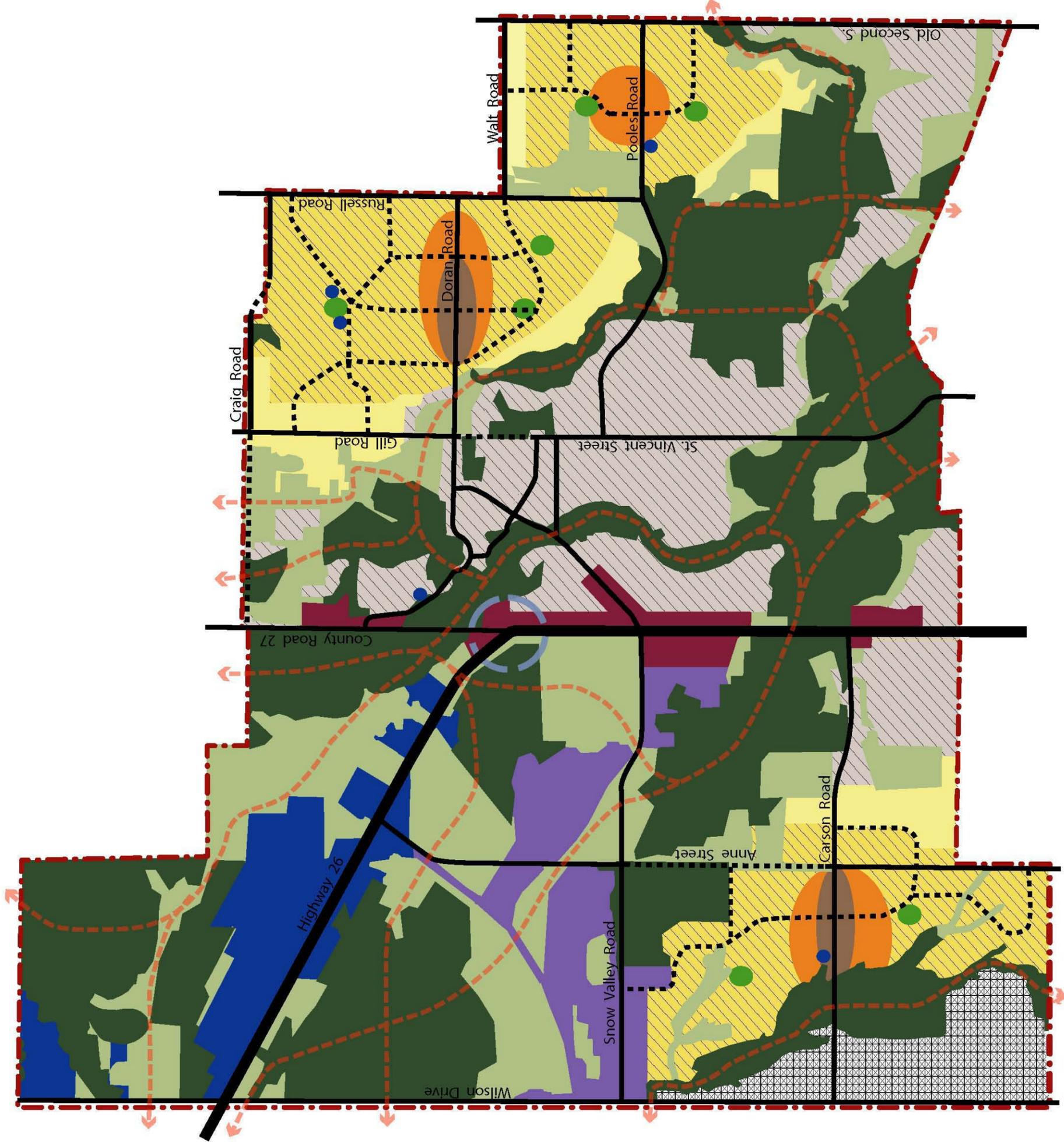
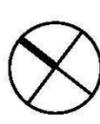
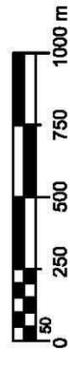
Township of Springwater Schedules

MIDHURST SETTLEMENT AREA SECONDARY PLAN

TOWNSHIP OF SPRINGWATER
October 29, 2008

Schedule A - Land Use

-  Commercial / Mixed Use
-  Administration / Government
-  Employment
-  Environmental Protection Area I
-  Environmental Protection Area II
-  Midhurst Village
-  Midhurst Transition Residential
-  Midhurst Low Density Residential
-  Midhurst Medium Density Residential
-  Midhurst High Density Residential / Mixed Use
-  Future Development Potential
-  Park
-  School / Institutional
-  Provincial Highway
-  Primary Road
-  Potential Primary Road
-  Settlement Area Boundary
-  Environmental Connections / Potential Trails
-  Future Intersection Improvements



SCHEDULE 'B'

OFFICIAL PLAN

NATURAL HERITAGE
(ENVIRONMENTAL PROTECTION)

CATEGORY 2 LANDS

TOWNSHIP OF



SPRINGWATER

LEGEND

- TOWNSHIP OF SPRINGWATER BOUNDARY
- PROVINCIAL & COUNTY ROADS
- POWER LINES
- RAIL LINES
- PIPE LINE
- DETAILED SCHEDULE
- NATURAL HERITAGE (ENVIRONMENTAL PROTECTION)
- CATEGORY 2 LANDS
- WOODLOTS (OVER 30ha IN SIZE)

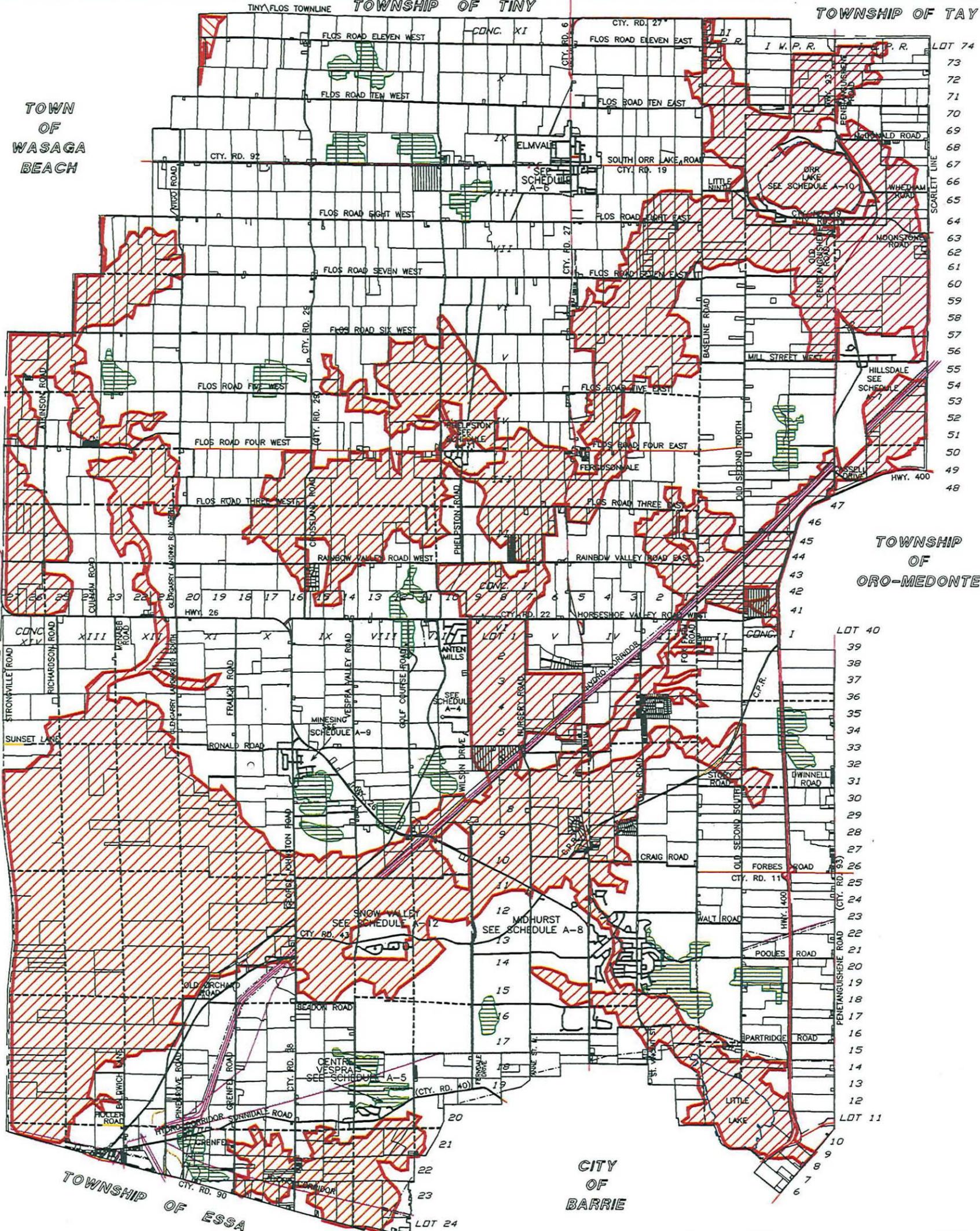


NOTE:
This map may not include all revisions. Contact township office for the most up-to-date information.
Base Map Source: O.B.M. data taken from 1986 MNR A/P Photos.
Soil Classification Source: Canada Land Inventory
All lakes, rivers and creeks, whether set out or not on this schedule, are subject to the policies of Section 3 and Section 16 of the Plan.



TOWN OF WASAGA BEACH

TOWNSHIP OF CLEARVIEW



TOWNSHIP OF ORO-MEDONTE

CITY OF BARRIE

TOWNSHIP OF ESSA



APPENDIX C

Agency Consultation

MINUTES OF KICK-OFF MEETING – EIS

PROJECT: Township of Springwater, MNRF Class Environmental Assessment

DATE: April 17, 2018

LOCATION: MNRF, Midhurst District Office

TIME: 1:00 pm to 2:00 pm

PRESENT: Jodi Benvenuti, MNRF
Kim Benner, MNRF
Stephanie Casutt, Azimuth Environmental
Victoria Giangrande, Ainley Group
Tabitha Lee, Watermark Environmental Ltd.

DISTRIBUTION: Robert Brindley, Township of Springwater
Gary Scott, Ainley Group

1. Introductions

A kickoff meeting was organized with the MNRF, Ainley and Azimuth to discuss the Environmental Impact Study (EIS) that is to be completed on the Hasty Tract property.

2. Project Overview

Ainley Group has been retained by the Township of Springwater (Township) to complete a MNRF Class EA for the disposition of the Hasty Tract property which is currently Crown land. A screening process has determined that a Category B Class EA will be competed under the Class Environmental Assessment for MNRF Resource Stewardship and Facility Development Projects. The conditional land purchase is confidential until the project goes public on April 26. Following the project going public, the notice of commencement for the Class EA will be advertised and sent to Aboriginal communities and agencies.

A preliminary plan for the property was presented at the meeting. The map identifies approximately half of the Hasty Tract property will be obtained by the Township of Springwater however this will depend on the results of the Soil and Groundwater Investigation being completed by Azimuth.

Azimuth identified that the property land use will be incorporated into their Impact Assessment and Input into the Class EA.

Ainley is currently in the process of obtaining GIS data for the site and will provide it to Azimuth once they have received it from the Township and Simcoe County.

ACTION BY: Ainley Group

3. Objectives of EIS

Azimuths workplan identified breaking the project up into 3 phases:

1. Background review and input to Class EA screening criteria
2. Field surveys and existing conditions

3. Impact assessment and input to Class EA

Ainley has identified that the first phase is no longer required as the screening document has already been approved. Azimuth will still complete a background review to be incorporated into the final impact assessment report.

As part of Phase 2 Azimuth intends to completed the following studies:

- ELC
- Vascular plant survey
- Dawn breeding bird survey
- Nocturnal bird survey
- Bat snag survey
- Amphibian functional habitat survey

Azimuth has already started completing the ELC and bat snag survey and provided results of their findings to the MNRF.

During preliminary site visits they have not identified any wetland area on the property or butternut trees.

The MNRF suggested that Azimuth complete a preliminary bat survey on the property but that they do not foresee a need to pursue bats to an extensive degree. The surrounding area has a lot of bat habitat and the Hasty Tract does not appear to be ideal or suitable habitat and therefore the scale and scope of impact would be marginal.

The MNRF will try to identify how old the plantation is on the Hasty Tract property.

ACTION BY: MNRF

The MNRF identified that forked three-awned grass has been identified on surrounding properties. The recovery strategy is available online and identifies its habitat. Forked three-awned grass flowers late (October) and therefore it is not usually picked up in surveys. The following contacts were provided to assist with questions regarding forked three-awned grass:

- Judith Jones – Winter Spider Eco-Consulting
- Ken Tuininga – Environment Canada

The MNRF discussed including the assessment of wild fire risk in the EIS. The Wild Fire Assessment and Mitigation Reference Manual outlines how municipal land use planning can address wild fires, provides techniques for implementing wildfire policies, and identifies assessment and mitigation standards. As the project will not be required to obtain planning act approval the MNRF feel that this is the best time to review fire risk. Azimuth will ensure to follow the Provincial Policy Statement. The MNRF will provide a map that outlines fire risk.

ACTION BY: MNRF

The property is within the settlement area for Midhurst and therefore the National Heritage System does not apply.

Azimuth will inform the MNRF when they are completing the whip-poor-will survey to allow the MNRF to attend.

ACTION BY: Azimuth Environment

4. Property Access

Azimuth is to inform Raffaella Mooney (raffaella.mooney@ontario.ca) whenever they intend to be on site. Ainley will send Azimuth's preliminary work schedule to the MNRF. R. Mooney will be the contact if the gates to the property need to be opened. The MNRF will confirm if it is okay to remove fallen trees on the paths to allow for vehicle access on the property.

ACTION BY: MNRF / Ainley Group

The MNRF do not expect that there would be hunting on the property.

5. Other Business

The MNRF will retain the property that is not purchased by the Township.

Azimuth will provide updates to the MNRF throughout the project.

ACTION BY: Azimuth Environmental

Minutes prepared by:

A handwritten signature in black ink, appearing to read 'V. Giangrande', written in a cursive style.

Victoria Giangrande, M.ASc., P. Eng.
Ainley & Associates Limited

S:\117148 - Springwater - PM for MNR Lands\Minutes & Agendas\Minutes\2018-04-17 - Kick Off EIS Meeting.docx

Stephanie Casutt

From: Stephanie Casutt
Sent: 05-31-2018 13:31
To: Lee Bull; 'aknapp@nvca.on.ca'
Cc: 'Victoria Giangrande'; David Ketcheson; tabitha@watermarkenv.ca
Subject: AEC18-107 Hasty Tract Environmental Impact Study - Terms of Reference
Attachments: 18-107-Figure 1.pdf; 18-107-EIS2.pdf; AEC18-107 NHIC Mapping.pdf; AEC18-107 NVCA Regulation Mapping.pdf

Lee Bull, Manager, Planning Services, Nottawasaga Valley Conservation Authority
Amy Knapp, Planner, Planning Services, Nottawasaga Valley Conservation Authority

Good afternoon Lee and Amy:

Azimuth Environmental Consulting, Inc. (Azimuth) was retained by the Township of Springwater (Township) to undertake an Environmental Impact Study (EIS) for consideration in a Ministry of Natural Resources and Forestry (MNRF) Resource Stewardship and Facility Developments Project Class Environmental Assessment (Category 'B' project) of the property known as the Hasty Tract (please see attached mapping). The property is located at the northwest corner of Snow Valley Road and Bayfield Street and has been measured at 38.7 hectares (ha). The Class EA and corresponding EIS is to be conducted on a 20 ha parcel of the property as outlined within the attached mapping. Based on Azimuth's work completed to date, including the review of background information, there are no mapped watercourses or wetlands within the property limits. Wetland habitat is reportedly present within adjacent lands to the north only. Trails presumably used for recreational purposes are also present throughout. The entire property is forested and has been characterized as a 'Cultural Plantation' and based on available historical imagery, the plantation was established prior to 1954. No portions of the property are mapped as regulated by Ontario Regulation 172/06 "Development, Interference with Wetlands and Alterations to Shorelines and Watercourse Regulation".

To date, Azimuth has complete the following activities:

- Attended a meeting with the Ministry of Natural Resources and Forestry (MNRF) Midhurst District to review background information and discuss potential habitat for Species at Risk (SAR);
- Completed a snag density survey to characterize potential habitat for Endangered bat species. This survey corresponds to Step 2 of the MNRF Technical Note (April 10, 2018);
- Evaluated/updated/mapped vegetation community types based on Ecological Land Classification methods (Lee *et al*, 1998. Ecological land classification for southern Ontario: first approximation and its applications. SCSS Field Guide FG-02);
- Completed an amphibian functional habitat assessment (May 1, 2018); and
- Completed one of three nocturnal bird surveys to identify potential Eastern Whip-poor-will within or adjacent to the property (May 28, 2018).

Azimuth proposes to undertake the following activities to fulfill objectives of this study:

- Complete two vascular plant surveys (early June and September, 2018);
- Conduct two dawn breeding bird surveys to compile a list of birds potentially breeding on and adjacent to the property and to assess potential for SAR birds (June 2018);
- Complete the two remaining evening bird surveys to address potential use of property and adjacent lands by SAR nocturnal birds during the breeding season under full moon conditions (May – July 2018);
- Record all incidental wildlife observations during site visits;
- Complete a SAR habitat assessment using field data collected by Azimuth staff during site visits and other data available and/or provided by agencies to confirm environmental constraints, and approval requirements under the *Endangered Species Act, 2007*;
- Evaluate and assess the potential direct and indirect impacts of the proposed development on the identified natural heritage features and functions identified on or adjacent to the property;

- Identify environmental approval requirements of NVCA and/or MNRF; and
- Prepare one version of an EIS report for submission to relevant agencies. The EIS will include information on impact mitigation/ avoidance/ restoration to address major environmental concerns identified above and relevant mapping.

At this time, I would ask that the NVCA review the above Terms of Reference for the EIS and provide any comment that you may have.

Thank you for your assistance in this matter. Please do not hesitate to contact me at anytime should you wish to discuss.

STEPHANIE CASUTT
Terrestrial Ecologist

Azimuth Environmental Consulting, Inc.
642 Welham Road, Barrie, ON, L4N 9A1
office: (705)721-8451 ext.204
cell: (705)305-8582
scasutt@azimuthenvironmental.com
www.azimuthenvironmental.com

Providing services in hydrogeology, terrestrial and aquatic ecology & environmental engineering

Stephanie Casutt

From: Stephanie Casutt
Sent: 06-19-2018 11:49
To: 'Ian Ockenden'
Subject: RE: AEC18-107 Hasty Tract Environmental Impact Study - Terms of Reference

Hi Ian,

Thanks for responding to our TOR for this project. Here's a summary of our amphibian habitat assessment for the Hasty Tract property:

The study area was visited during the afternoon on May 1, 2018 for the Amphibian Habitat Assessment. The study area was broadly covered by foot using loose transects, and a list of incidental plant and animal species was kept. Although still early for full identification of many species, no indications of wetland vegetation communities were observed (also later confirmed in-season), and no water features, wetland areas, vernal pools or other surface water was observed in any portion of the study area. In circumstances where natural features (such as fallen/uprooted trees) exposed an additional 10-40cm of soil depth, no water pooling or standing water was observed. Adjacent lands to the north of the property included some mapped unevaluated wetland pockets, and these were observed as much as possible from the north property boundary. No indications of adjacent or connected wetland were observed. Given the sandy nature of the surface soils in the study area (and presumably beyond), it is suspected that soil drainage likely impedes water retention and wetland formation in this habitat.

The study area was re-visited after the habitat assessment for Amphibian Call Surveys later in the evening of May 1, 2018. Sunset was at 8:23 PM, so surveys began after 9 PM. A control site on Wilson Dr. (N of Hwy 26) was surveyed at 9:23 PM (22°C, Wind: B0, Precip.: none, Noise: 1), which confirmed ideal conditions by exhibiting strong calling by Spring Peepers (L3), Wood Frogs (L2), as well as one American Toad (L1). The study area was then visited, and a point count location at the N end of the study area was surveyed, in order to gather data from as close to the adjacent mapped unevaluated wetland areas as possible. All fauna heard during the walk in and the walk out were recorded, and the point count station was visited for 5 minutes (9:48PM, 21°C, Wind: B0-B1, Precip.: none, Noise: 1-2). No amphibians were heard or seen within the study area, and none were heard from the adjacent mapped unevaluated wetland areas north of the property. Distant sporadic Spring Peeper calls were heard from beyond the W edge of the study area during the walk in/out, however it was impossible to determine the property of origin.

Additional amphibian call surveys were determined to be unwarranted, since later-calling species depend on more persistent waterbodies compared to the earliest species. Since there was no evidence of suitable habitat during the wettest part of the season, and since no frogs were heard calling in the study area during this time, no further survey effort was deemed necessary.

I hope this helps. Let me know if you have any further questions.

Thanks,

STEPHANIE CASUTT
Terrestrial Ecologist

Azimuth Environmental Consulting, Inc.
642 Welham Road, Barrie, ON, L4N 9A1
office: (705)721-8451 ext.204

cell: (705)305-8582
scasutt@azimuthenvironmental.com
www.azimuthenvironmental.com

Providing services in hydrogeology, terrestrial and aquatic ecology & environmental engineering

From: Ian Ockenden [<mailto:iockenden@nvca.on.ca>]
Sent: 06-14-2018 09:49
To: Stephanie Casutt
Subject: AEC18-107 Hasty Tract Environmental Impact Study - Terms of Reference

Hi Stephanie,
I'm reviewing the TOR for the EIS and have a couple quick questions prior to sending in my formal comments. Can I see the results of the amphibian functional habitat assessment? Also, were there any vernal pools located during the ELC mapping or bird surveys?

Thanks,

Ian Ockenden M.Sc. | Watershed Monitoring Specialist

Nottawasaga Valley Conservation Authority
8195 8th Line, Utopia, ON L0M 1T0
T 705-424-1479 ext. 234 | **F** 705-424-2115
iockenden@nvca.on.ca | nvca.on.ca

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Legend < I want to...

Refer to Help for Legend details

-  Assessment Parcel
-  Woodland
-  Conservation Reserve
-  Provincial Park
-  Natural Heritage System
-  Ecoregion

Wetland

-  Provincially Significant Wetland Evaluated
-  Non - Provincially Significant Wetland Evaluated
-  Unevaluated Wetland

Area of Natural Heritage & Scientific Interest (ANSI)

-  Provincially Significant Life Science ANSI
-  Provincially Significant Earth Science ANSI

Greenbelt Plan



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Ministry of Natural Resources and Forestry
 Make A Map: Natural Heritage Areas

[Français]

Looking for a Park, Reserve or Wetland? Enter the name

About | Bookmarks | Map Layers | **Find Information** | Markup & Printing | Measure

Search By Location | Find ... | Pan | Zoom In | Zoom Out | Initial View | Previous Extent | Next Extent | Help



NHIC Data -- Grid ID = 1008335

| Element Type | Common Name | Scientific Name | SRank | SARO Status | COSEWIC Status | Last Obs Date | EO ID | Details URL |
|--------------|----------------------|--------------------|-------|-------------|----------------|---------------|-------|---|
| SPECIES | Houghton's Flatsedge | Cyperus houghtonii | S3 | | | 1992-08-25 | 64633 | http://nhic.mnr.gov.on.ca/reports/public_details.php?source=1kmgriddetail&nhic_eo_id=64633 |



APPENDIX E

Significant Woodland Mapping





APPENDIX F

Conceptual Site Plan

Confidential

TOWNSHIP OWNED MULTI-PURPOSE DEVELOPMENT CONCEPT

-  Development Boundary
-  Major Landscape Features and Buffers
-  Multi-Purpose Recreational Complex - Phase 2
-  Road and Parking Layout
-  Minor Landscape Features and Hardscape
-  Multi-Purpose Recreational Complex - (65,000 sq.ft.)
-  Multi-Purpose Outdoor Fields
-  Fire Hall
-  Grass
-  Lands for Future Community Use



MULTI-PURPOSE RECREATIONAL COMPLEX USES (Phase 1)

1. Single Ice Pad NHL Size with seating, dressing rooms etc. (22,000 sq.ft.)
2. Dressing rooms with seating over (6,000 sq.ft.)
3. Lobby/Food Services/Public Areas (5,000 sq.ft.)
4. Walking/running track (4,000 sq.ft.)
5. Multi-purpose Space (3,000 sq.ft.)
6. Double Gymnasium and storage (8,000 sq.ft.)
7. Library (11,700 sq.ft.)
8. Facility Management Offices (500 sq.ft.)
9. Storage (500 sq.ft.)
10. Mechanical Space Allowance (4,500 sq.ft.)
11. Gross-up at 1.25 % (16,300 sq. ft.)

Total Building Size = 81,500 Square Feet
Total Development Area = 50 Acres (*Includes Future Lands)

MULTI-PURPOSE RECREATIONAL COMPLEX USES (Phase 2)

1. Single Ice Pad NHL Size with seating, dressing rooms etc. (22,000 sq.ft.)
2. Library (14,300 sq.ft.)
3. Gross-up at 1.25% (453.75 sq.ft.)

Total Building Size = 118,254 Square Feet
Total Development Area = 50 Acres (*Includes Future Lands)

Conceptual Size and Location of Buildings, Splash Pad and Parking Areas are based on The Township of Springwater Parks and Recreational Master Plan (2015), Fire Master Plan (2003), Library Facility Needs Assessment (2014) and Comprehensive Zoning By-law 5000

THIS MAP IS A CONCEPT DESIGNED BY TOWNSHIP STAFF FOR ILLUSTRATION PURPOSES ONLY

