Environmental Impact Study
Parkbridge – Craigleith Project
Town of Blue Mountains, Grey County

Prepared for:
Parkbridge Lifestyle Communities Inc.

Prepared by:
Azimuth Environmental
Consulting, Inc.

December 2016

AEC 15-289

AZIMUTH ENVIRONMENTAL CONSULTING, INC.

Environmental Assessments & Approvals

December 21, 2016 AEC 15-289

Parkbridge Lifestyle Communities Inc.
85 Theme Park Drive
Wasaga Beach, ON
L9Z 1X7

Attention: Mr. Robert Wagner, Project Manager

Re: **Environmental Impact Study for the Proposed Development of the Properties Located at 208 Lakeshore Road and Part of Lot 21 Concession 2, in the Town of the Blue Mountains, County of Grey**

Dear Mr. Wagner:

As requested, we have completed an Environmental Impact Study assessing the potential for environmental impacts associated with the proposed development of a residential subdivision on the properties described above.

This report summarizes investigations undertaken in 2016 to characterize and categorize the natural environmental features in the Study Area and surrounding lands. The assessment was designed to evaluate the features with potential to be considered significant within the Study Area based on applicable policy and/or legislation. Those features with potential to be considered significant existing on or adjacent to the Study Area are then discussed as the candidate Significant Natural Heritage Features examined in the impact assessment of this report.

Mitigation measures have been recommended to avoid any potential impacts to 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 site plan 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.

642 Welham Rd., Barrie, Ontario L4N 9A1
telephone: (705) 721-8451 • fax: (705) 721-8926 • info@azimuthenvironmental.com • www.azimuthenvironmental.com

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.

Stephanie Casutt, HBES
Terrestrial Ecologist

Matt Stuart, B.Sc
Aquatic Ecologist/Partner

Table of Contents

List of Figures

List of Tables

List of Appendices

1.0 INTRODUCTION

Azimuth Environmental Consulting Inc. (Azimuth) was retained by Parkbridge Lifestyle Communities Inc. (Parkbridge) to complete an Environmental Impact Study (EIS) for the proposed development of the properties located at 161 and 208 Lakeshore Road (Study Area) in the Town of Blue Mountains and the County of Grey (Figure 1). It is our understanding that an EIS is required by the Town to determine and assess the potential impacts of the proposed development upon the candidate Significant Natural Heritage Features (SNHF) and functions in accordance with provincial and municipal planning policy.

The objective of this EIS is to identify and assess the potential for impacts to the candidate SNHF and functions including potential Species at Risk (SAR) habitat within the Study Area and adjacent lands (*i.e.,* lands within 30m). Information collected by the Azimuth ecologists during the 2016 field season and background information from the Ministry of Natural Resources and Forestry (MNRF), Niagara Escarpment Commission (NEC), Grey County (County), Town of Blue Mountains (Town), and the Grey Sauble Conservation Authority (GSCA) 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)*

It is ultimately the responsibility of the Province and/or the Municipality to designate areas identified within Section 2.1.4 of the PPS as significant. The Natural Heritage Reference Manual (MNR, 2010) and Ecoregion 6E Significant Wildlife Habitat (SWH) Criterion Schedule (MNRF, 2015) were used to identify candidate features considered applicable to the Study Area and adjacent lands.

No development or site alteration will be permitted on lands adjacent to the areas defined above 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.

The PPS also states that development and site alteration is not permitted in fish habitat or habitat of Endangered (END) and Threatened (THR) species except in accordance with federal and provincial requirements.

The term development (as defined in the PPS) is defined as 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, 2007

Ontario's *Endangered Species Act*, 2007 (ESA) provides regulatory protection to END and THR 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 Species at Risk (SAR) in Ontario. These include species listed as Extirpated (EXT), END, THR, and Special Concern (SC). As noted above, only species listed as END and THR receive protection through the ESA from harm and destruction to habitat on which they depend. Species designated as SC may receive protection under the SWH provisions of the PPS.

According to Section 9.(1)(a) of Ontario's Endangered Species Act, 2007 (ESA), "no person shall kill, harm, harass, capture or take a living member of a species that is listed on the Species at Risk in Ontario List as an extirpated (EXT), END or THR species".

Section 10.(1) of the ESA prohibits damage to habitat stating that "no person shall damage or destroy the habitat of a species that is listed on the Species at Risk in Ontario (SARO) List as an END or THR species; or a species that is listed on the SARO List as an EXT species, if the species is prescribed by the regulations for the purpose of this clause".

As per Section 17.(1) of the ESA "the Minister may issue a permit to a person that, with respect to a species specified in the permit that is listed on the SARO List as an EXT, END or THR species, authorizes the person to engage in an activity specified in the permit that would otherwise be prohibited by section 9 or 10".

2.3 Niagara Escarpment Plan

The *Niagara Escarpment Plan*, 2005 (NEP), defined under the Niagara *Escarpment Planning and Development Act*, R.S.O. 1990, c. N2, designates the Study Area as part of the "Escarpment Recreation Area" (Appendix A).

Designated Recreation Areas are areas of existing or potential recreational development associated with the Escarpment. Such areas may include both seasonal and permanent residences. The objectives within the designation are to:

1. Minimize any adverse effects of recreational activities on the Escarpment environment;
2. To provide areas where new recreational and associated development can be concentrated around established, identified or approved downhill ski centres;
3. To provide areas where new recreational and associated development can be concentrated around established, identified or approved lakeshore cottage areas in Grey and Bruce Counties;
4. To recognize the importance of Four Seasons Craigleith-Camperdown Recreation Area (in the Town of Blue Mountains) to the tourism sector of Ontario's economy
5. To provide for the development of new ski centres or other recreational areas; and
6. To ensure that future recreational development is compatible with cultural and natural heritage values (*e.g.* fisheries and wildlife habitat) in the area.

The general development criteria (Section 2.2 of the NEP) state that permitted uses may be allowed provided that:

1. The long term capacity of the site can support the use without a substantial negative impact on Escarpment environmental features such as contours, water quality, water quantity, natural vegetation, soil, wildlife, population, visual attractiveness and cultural heritage features;
2. The cumulative impact of development will not have serious detrimental effects on the Escarpment environment (e.g. water quality, vegetation, soil, wildlife, and landscape);
3. The site is not considered hazardous to life or property due to unstable soil conditions or possible flooding; and
4. Development meets applicable federal, provincial and municipal requirements including health and servicing requirements.

In addition to this, Section 2.7 (New Development Within Wooded Areas) of the NEP states that the objective within wooded areas is to ensure that new development should preserve as much as possible of wooded areas. Specifically:

1. Disturbance of treed areas should be minimized, and proposed developments in heavily treed areas shall have site plan agreements containing specific management details regarding the protection of existing trees;
1. Trees to be retained should be protected by means of snow fencing wrapping, or other acceptable means during construction (e.g. tree wells); and
2. Existing tree cover or other stabilizing vegetation will be maintained on slopes in excess of 25 per cent (1 in 4 slope).

Section 2.8 (Wildlife Habitat) of the NEP states that the objective is to protect the habitat of Endangered (regulated) as prescribed by the ESA, Endangered (not regulated), rare, special concern and threatened, plant and animal species, and minimize the impact of new development on wildlife habitat. Specifically,

1. New development will not be permitted in identified habitat of endangered (regulated) plant or animal species.
2. Development shall be designed so as to:
    a. Minimize the impacts upon wildlife habitat, in particular, habitats of endangered (not regulated), rare, special concern, and threatened plant or animal species, as identified by on-site evaluation;
    b. Maintain wildlife corridors and linkages with adjacent areas;
    c. Enhance wildlife habitat wherever possible.

2.4 Grey-Sauble Conservation Authority

The Study Area includes drainage features within the GSCA jurisdiction, that are regulated and subject to "Ontario Regulation (O. Reg.) 151/06 –Regulation of Development, Interference with Wetlands and Alterations to Shorelines and

Watercourses". Under O. Reg. 151/06, the Conservation Authority (CA) requires that approvals be obtained for any proposed development within areas regulated under a CA's jurisdiction.

2.5 County of Grey Official Plan, 2013

Land Use Designations Schedule A Map 2 of the County of Grey Official Plan (2013) shows the Study Area mapped as 'Recreational Resort Area'. In addition, Appendix B Map 2 of the OP shows portions of the Study Area mapped as Significant Woodland (Appendix B).

In accordance with Section 2.6.7 of the County's Official Plan, new development must serve the public interest by accommodating existing un-serviced development and areas with development potential within the existing designation or settlement areas.

In accordance with Section 2.8, "*where it is likely that development or site alteration would have a negative impact on an ANSI or Significant Woodlands, a 50 meter adjacent land width distance is to be considered*."

Section 2.8.4.1 states "*no development or site alteration may occur within Significant Woodlands or their adjacent lands unless it has been demonstrated through an Environmental Impact Study, as per section 2.8.7 of this Plan, that there will be no negative impacts on the natural features or their ecological functions*."

Section 2.8.6.1 states that "*development and site alteration shall not be permitted within valleylands, wildlife habitat, and their adjacent lands, unless it has been demonstrated through an acceptable Environmental Impact Study is completed accordance with Section 2.8.6(4) of this Plan that there will be no negative impacts on the natural features or their ecological functions.*"

Section 2.8.6.2 states "*no development or site alteration shall be permitted within areas of significant threatened and endangered species as identified by the Ministry of Natural Resources. No development or site alteration may occur within the adjacent lands to areas of significant threatened and endangered species unless it has been demonstrated through an Environmental Impact Study that there will be no negative impacts on the natural features or their ecological functions*."

Section 2.8.6.4 states that "*development and site alteration may be permitted provided it is demonstrated by an acceptable Environmental Impact Study, prepared by a qualified individual, that there will be no negative impacts on the natural features or on the ecological function for which the area is identified*."

2.6 Town of Blue Mountains Official Plan, 2016

The Study Area is currently designated as a Residential Recreational Area with Hazard lands present along the Nipissing Ridge as per Schedule A-4 of the Town of Blue Mountains Official Plan (Appendix C).

As per Section B5.4.2 of the Town's OP, where hazard lands have been designated:

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

i) renovated or minor expansions to existing buildings and structures which were legally established on the date of approval of this Plan; ii) non-habitable buildings connected with public parks (i.e. picnic shelters); iii) flood and erosion/sedimentation control structures; iv) fences, provided they will not constitute an obstruction or debris catching obstacle to the passage of flood waters or create or aggravate an erosion problem; and v) recreational facilities, as approved by the Niagara Escarpment Commission, on lands identified as being prominent escarpment slope.

c) Where new development and site alteration is permitted in (b) above, it shall only occur if the following can be satisfied: i) the hazards can be safely addressed, including access to and from the site, and no new hazards are created or existing hazards aggravated; ii) no environmental impacts will result. An Environmental Impact Study may be required as a condition of all development; iii) the development does not include institutional uses or emergency services or involve hazardous substances; iv) the advice, or approval where required, of the appropriate Conservation Authority and the County, who will consider the mitigation of effects on vegetation, wildlife and fishery resources, and the natural features of the site; and, v) there is no feasible location for the development outside of the Hazard Lands designation.

d) Buildings and structures (excluding docks and boathouses which are portable or floating in nature) will be setback 30 metres from all lakes and watercourses.

e) Minor alteration of Hazard Lands mapping, as interpreted by the Town, in consultation with the appropriate Conservation Authority, may occur without amendment to the Official Plan. It is the intent of the Town to include more detailed Hazard Land mapping in the implementing Comprehensive Zoning By-law as provided by the Conservation Authorities.

f) Development will be setback from the top of bank of all slopes and ravines having a slope of 3:1 or greater, in accordance with the requirements of the appropriate Conservation Authority. In some instances, such as the replacement or renovation of existing structures within this setback, a geotechnical slope evaluation study, prepared by a qualified geotechnical engineer, may be required prior to the issuance of any building permits. The study must address slope stability with respect to structural impact, landscaping requirements, and the impact of surface drainage.

g) The replacement or repair of existing structures, including minor extensions or enlargements, may be permitted subject to the following:

i) the feasibility of relocating the structure or use outside the hazard area has been assessed, and there are no reasonable alternatives; ii) the replacement structure/use must be located where it will be least susceptible to damage; iii) the replacement structure/use must not exceed the original structure in size or extend further into the hazard area; and iv) the replacement structure/use must not result in a more intensive use than that of the original structure or use (i.e. the replacement of a non-habitable structure, such as a garage, with a habitable structure, such as a cottage is not permitted).

h) Access through a hazard area, which requires filling or other alterations to existing grades, shall be permitted in situations where it presents the only available means of securing a safe and appropriate building site on an existing lot of record. Such access must be constructed such that it is not prone to erosion or instability and will not cause or aggravate erosion, flooding or instability on neighbouring properties. The access will generally require approval from the appropriate Conservation Authority under Development, Interference with Wetlands and Alterations to Shorelines and Watercourses Regulations

2.7 Federal Fisheries Act

Amendments to the *Fisheries Act* came into effect on November 25, 2013. These changes focus the *Act* on protecting the productivity of recreational, commercial and Aboriginal fisheries. Fisheries and Oceans Canada (DFO) is now focusing protection rules on real and significant threats to the fisheries and the habitat that supports them, while setting clear standards and guidelines for routine projects.

Under the current DFO review process, projects are to be evaluated under the Self-Assessment process to determine whether a project has the potential to result in 'serious harm to fish', and whether DFO review is required to obtain either a Letter of Advice or federal Authorization.

3.0 STUDY APPROACH

A Terms of Reference (TOR) for the EIS was established in consultation with the GSCA and NEC (Appendix D). Azimuth undertook the following activities to complete this study:

- Obtained background information related to the natural heritage features and wildlife species identified in the area of proposed development;
    - Requested current background information regarding SAR that have been observed on or adjacent to the Study Area;
- Evaluated existing vegetation communities using Ecological Land Classification (ELC) for Southern Ontario (Lee *et al*. 1998. Ecological Land Classification for Southern Ontario: first approximation and its applications. SCSS Field Guide FG-02) to vegetation type;
- Completed a habitat assessment for SAR which included:
    - Identification of prospective habitat for the THR or END species with potential to occur in the area;
    - Identification of prospective habitat for species of SC with potential to occur in the area which could be considered significant wildlife habitat under the PPS;
- Completed the following field surveys:
    - Conducted three amphibian call surveys (April 20, May 19, and June 15, 2016);
    - Conducted a three vascular plant surveys within the Study Area (May 10, July 18, & September 16, 2016);
    - Completed three dawn breeding bird surveys (June 10, 17, & 29, 2016);
    - Conducted six turtle surveys using the MNRF's Survey Protocol (MNRF, 2015) (April 23, May 2, 10, 17, 24, and June 1, 2016);
    - Completed three nocturnal bird surveys (May 19, June 15 & 16 2016);
    - Conducted Butternut Health Assessments (BHA) for the 15 Butternut (*Juglans cinerea*) trees identified both on the properties and adjacent lands (July 15, 2016) and submitted a BHA report to the MNRF outlining the results (August 29, 2016);
    - Conducted an aquatic habitat assessment spring/summer (June 13, 2016) and carried out fish sampling at the three identified watercourses (August 30, 2016);
- Recorded observations of wildlife occurrence and assessed wildlife habitat function of the Study Area as outlined in the MNRF's Ecoregion 6E Criterion Schedule (MNRF, 2015);
- Identified potential development constraints based on environmental features and

presented on maps with current aerial photographs;
- Assess the potential direct and indirect impacts of the proposed development on the sensitive or SNHF and functions identified on and adjacent to the Study Area; and
- Developed an avoidance/mitigation/restoration strategy to address any potential negative environmental impacts.

3.1 Data Sources

A review of background documents provided information on site characteristics, habitat, wildlife, rare species and communities of the Study Area and adjacent lands. Data was gathered from the following sources:

- Aerial images (Google, VuMap);
- Grey County County Interactive Maps [website];
- Town of The Blue Mountains Official Plan (2016) and maps;
- Niagara Escarpment Plan (2015) and mapping;
- County of Grey's Official Plan (2013) and maps;
- Atlas of the Breeding Birds of Ontario (OBBA) [website];
- Ontario Nature – Ontario Reptile and Amphibian Atlas [website];
- MNRF Natural Heritage Information Centre (NHIC) Make-A-Map: Natural Heritage Areas application [website];
- MNRF SAR Information Request; and
- MNRF's Species at Risk in Ontario list (updated to June 29th, 2016).

3.2 Vegetation Community Mapping and Surveys

The ELC for Southern Ontario (Lee *et al*., 1998) was used as a general guide to the classification of the vegetation community types. Prior to undertaking the field studies, an initial classification of habitats was undertaken using recent air photo imagery for an area encompassing the Study Area and adjacent lands. Vegetation boundaries were then checked in the field and adjusted for the Study Area as necessary. Field surveys to confirm vegetation community types and plant species compositions were completed on May 10, July 18, and September 16, 2016.

3.2.1 Butternut Health Assessment

Butternut is listed as END under the ESA (O. Reg. 230/08). Given the status of the species, Butternut is protected under section 9 of the ESA. However, there are two principal exceptions to these prohibitions on activities that affect Butternut, both of which are allowed by exemptions provided under O. Reg.242/08.

The MNRF requires that a BHA occur prior to any development or site alteration that may impact Butternut. The purpose of the assessment is to quantify the level of impact of the fungus on each specimen by recording the amount of living tree crown and the extent of surface wounds on the trees. The assessment characterizes the level of impact of the trees and employs an assessment matrix to assign one of three categories as follows:

A Category 1 tree is one that is affected by the Butternut canker to such an advanced degree that retaining the tree would not support the protection or recovery of Butternut in the area. As such, Category 1 trees may be killed, harmed, or taken after the 30 day period that follows submission of the BHA.

A Category 2 tree is one that is not affected by the Butternut canker, or is affected by Butternut canker but the degree to which it is affected is not too advanced and retaining the tree could support the protection or recovery of Butternut in the area. Activities that may kill harm or take more than ten (10) Category 2 trees are not eligible to follow the rules in section 23.7 of O. Reg. 242/08.

A Category 3 tree is one that is assessed and found to be both retainable and naturally occurring; its protection under Section 9 of the ESA will remain undiminished. A portion of these trees may provide insight into whether or not some Butternut trees are resistant to the Butternut Canker. Category 3 trees are known as *putatively resistant* trees.

A BHA was conducted on July 5, 2016 (Appendix E) and submitted to the MNRF Midhurst District August 29, 2016.

3.3 Wildlife Surveys

3.3.1 General

Incidental observations through direct observation and interpretation of sign (*i.e.* tracks, scat, vocalizations) of mammals, birds, amphibians and reptiles were recorded as a matter of course during all field investigations.

3.3.2 Birds

Dawn breeding bird surveys (BBS) were conducted on June 10, 17, and 29, 2016, at the points outlined in Figure2a 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 were undertaken at set locations within the Study Area and all birds identified through visual confirmation or bird calls were recorded at each point for a total of five minutes. The locations of point count stations

sampled in 2016 are shown on Figure 2a. 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 were carried out in May and June 2016 to determine if Whip-poor-will occurs within the Study Area. 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 Study Area on a single night. This was modified to three nights over two months to ensure compatibility with MNRF protocols currently in development. Surveys in 2016 were focused to a period within 5 days of the full moons on May 19, 2016, June 15 and 16, 2016 at the points outlined in Figure 2a. Surveys began 30 minutes after sunset and the observer was required to survey each location for a total of 10 minutes. This is based on experience carrying out surveys since 2009 and undocumented discussions with various MNRF District SAR/Management Biologists. As noted within the protocol, surveys are ideally undertaken on calm clear nights with:

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

On all surveyed nights, a known calling location in proximity to the Town of Wasaga Beach was used as a control site in the area to demonstrate that any negative identification was not due to poor weather conditions.

3.3.3 Amphibians

Azimuth conducted evening calling amphibian surveys according to the Great Lakes Marsh Monitoring Program (Bird Studies Canada. 2008) protocol. The locations of survey stations sampled in 2016 are shown on Figure 2a.

3.3.4 Reptiles

Preliminary assessment of the Study Area indicated the potential for SAR turtle habitat to be present within the pond feature in the Study Area. Turtle Basking Surveys were conducted according to the Survey Protocol for Blanding's Turtle (*Emydoidea blandingii*) in Ontario (MNRF. 2015). The protocol outlines search effort, suitable weather conditions, and methods, advising that a minimum of five surveys are required for sites where the species has not been previously detected to conclude with reasonable

confidence that SAR turtle species are absent. Surveys were to be conducted over the spread of at least three weeks are during suitable conditions (sunny periods [minimum air temperatures of 10°C] or partly cloudy [minimum air temperatures of 15ºC]).

3.3.5 Bats

Preliminary assessment of the Study Area indicated potential habitat for endangered bat species within the forest vegetation communities (*i.e.,* FODR1, FODM3-1). Bat roosting data was collected within the FODM3-1 vegetation community by Azimuth staff following the methods set out in the *Technical Note on Bat Species at Risk* (MNRF.2015) for identifying candidate bat maternity roosting habitat. Data was subsequently analyzed as per the MNRF guidelines:

The MNRF guideline document sets out the methods used by Azimuth staff for identifying candidate significant maternity roosts:

- Step 1 – Use ELC to determine the presence of:
    - Deciduous Forests (FOD)
    - Mixedwood Forests (FOM)
    - Coniferous Forests (FOC)
    - Deciduous Swamp (SWD)
    - Mixedwood Swamps(SWM)
    - Coniferous Swamps (SWC)
- Step 2 – Within 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 snags trees ≥ 25 cm DBH in each plot;
    - Use the formula $\pi r^2$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.

For the purpose of this assessment, given the overall size of the community, 10m transects were walked where all suitable snag trees within the FODM3-1 forest were mapped rather than following the recommended plot method, allowing for a more detailed assessment of the potential habitat.

3.4 Species at Risk

The SAR screening included an analysis of the habitat requirements of SAR reported to occur in the area to identify those having potential to occur within or adjacent to the Study Area. Site assessments considered appropriate efforts to detect any provincially designated species, notably SAR as identified by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC), and by the Committee on the Status of Species at Risk in Ontario (COSSARO). The MNRF Midhurst District was contacted to request background and SAR information that may be relevant to this project (Appendix D; Response received via phone only).

Habitat requirements and appropriate designations (END, THR, or Special Concern [SC]) for all species that could potentially occur in the area are outlined in Table 1. Where it is determined that the species have potential habitat within the Study Area and adjacent lands, preliminary mapping is created to determine if the proposed works can be carried out with a reasonable certainty that no impacts to the species or their habitat will be incurred as a result of the works.

3.5 Aquatic Habitat and Fisheries

Azimuth staff conducted a 2016 spring/summer aquatic habitat survey (June 13, 2016) and carried out fish sampling at the three identified watercourses (August 30, 2016) shown on Figure 2a to assess existing fish and fish habitat features in the Study Area. The purpose of the site visits were to assess the watercourses in the Study Area, to determine their form and function as fish habitat, and further assist with determining the extent and classification of fish habitat located on or adjacent to the Study Area.

Azimuth documented the fish habitat within the site limits, with the objective of identifying fish and fish habitat sensitivities and site details. The area of investigation included the right of way (ROW) along Lakeshore Road East and extended to the southern limits of the property. Based on the site conditions observed, the watercourses were assigned one of the following designations:

- Permanent direct fish habitat: sites where flowing or standing water are sufficient to provide year round habitat for fish;
- Seasonal direct fish habitat: sites that are inundated in the spring and provide direct habitat for fish under elevated water levels, but not under low water conditions, due to insufficient open water and refuge habitat or anoxic water quality conditions;
- Indirect fish habitat: sites where there is sufficient water to sustain aquatic life (aquatic invertebrates and plants) however, fish cannot directly access the area as a result of a barrier to upstream fish movement (i.e. steep channel grade, low

water levels or perched culvert) and water at the site is ultimately discharging to an area of direct fish habitat downstream.

4.0 EXISTING SITE CONDITIONS

4.1 Land Use

4.1.1 On-site Land Use

The Study Area covers two separate properties (*i.e.,* 161 and 208 Lakeshore Road), is approximately 30ha in size, and is vacant with forested and open meadow communities separated by hedgerows. The presence of the meadows and associated hedgerows indicate probable farm use of portions of the Study Area. There appears to be no recent farm use of the Study Area (*i.e.,* within the part 25+/- years). A single family residential dwelling and associated amenities are present on the 208 Lakeshore Road property. An existing driveway is present, located off Grey County Road 19 which indicates probable residential use in that area.

The Study Area is generally divided into four quadrants, of which boundaries are reflective of natural landform features (*i.e.,* Nipissing Ridge, watercourses). The Nipissing Ridge, which runs east to west, separates the north and south quadrants. Three watercourses are present in the Study Area (two permanent, one ephemeral) as shown on Figure 2a,

Forested portions of the Study Area are largely associated with the Nipissing Ridge and the riparian areas of the watercourses. A small pond (*i.e.,* < 1ha) is located in the north-east quadrant, and appears to be 'man-made' with evidence of past water management usage (*i.e.,* cattle, recreational).

4.1.2 Adjacent Land Use

The Study Area is bordered by Lakeshore Road to the north and Grey County Road 19 to the west. Adjacent lands directly west of County Road 19 contain residential development, while lands directly south and east contain forested and undeveloped lands. Various ski clubs associated with the Niagara Escarpment (*i.e.,* Craigleith Ski Club, Blue Mountain Village) are present to the south of the Study Area.

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 documented to occur onsite are designated as rare, while one END tree species (*i.e.,* Butternut) was identified within the Study Area. A complete list of all vascular plants identified within

each respective vegetation community is presented in Table 2. ELC communities include:

1. FODR1: Dry – Fresh Sugar Maple Deciduous Forest This community is present within the Nipissing Ridge Feature in the Study Area. The canopy is mainly comprised of Sugar Maple (*Acer saccharum*), Paper Birch (*Betula papyrifera*), Northern Red Oak (*Quercus rubra*), and American Beech (*Fagus grandifolia*). Butternut (*Juglans cinerea*) was identified within this vegetation community. Sub-canopy and understory species include Ironwood (*Ostrya virginiana*), Eastern White Cedar (*Thuja occidentalis*), Green Ash (*Fraxinus pennsylvanica*), and Choke Cherry (*Prunus virginiana*). Plant species present in the ground layer include Canada Wild Ginger (*Asarum canadense*), Ziz-zag Goldenrod (*Solidago flexicaulis*), Marginal Wood Fern (*Dryopteris marginalis*), and White Baneberry (*Actea pachypoda*).

2. FODM3-1: Dry – Fresh Poplar Deciduous Forest
   The deciduous forest community is present in the north-west quadrant of the Study Area, directly adjacent the FODR1 community. The canopy is mainly dominated by Large-tooth Aspen (*Populus grandidentata*) and Trembling Aspen (*Populus tremuloides*). Associate canopy species include Paper Birch (*Betula papyrifera*) and Balsam Poplar (*Populus balsamifera*). Common Buckthorn (*Rhamnus cathartica*) is largely abundant in the understory. Ground layer species include Common Burdock (*Artctium minus*), New England Aster (*Symphyotrichum novae-angliae*), and Garlic Mustard (*Alliaria petiolata*).

3. FOCM2-2: Dry – Fresh White Cedar Coniferous Forest
   This is the only coniferous vegetation community within the Study Area, located within the south-east quadrant. The canopy is largely composed of Eastern White Cedar (*Thuja occidentalis*) with few Paper Birch (*Betula papyrifera*) scattered throughout. The understory is largely absent in this community and ground layer species include Field Basil (*Clinopodium vulgare*) and Grass-leaved Goldenrod (*Euthamia graminifolia*).

4. FODM7-2: Fresh – Moist Green Ash-Harwood Lowland Deciduous Forest
   This deciduous forest is present in on small area in the north-east quadrant of the Study Area. The canopy layer is largely composed of Green Ash (*Fraxinus pennsylvanica*) and Common Buckthorn (*Rhamnus cathartica*) represents the dominant understory species. Ground layers species in this community include Spotted Water-hemlock (*Cicuta maculata var. maculata*), Colt's Foot (*Tussilago farfara*), and Garlic Mustard (*Alliaria petiolata*).

5. THD: Deciduous Thicket
   Deciduous Thicket communities represent early successional areas within the meadow communities where Green Ash (*Fraxinus pennsylvanica*) represents the dominant canopy species. Other noteworthy species include Common Timothy (*Phleum pratense*), Field Chickweed (*Cerastium arvense ssp. arvense*), and Common Viper's Bugloss (*Echium vulgare*).

6. CUM: Cultural Meadow
   Cultural Meadow communities represent the fallow/inactive agricultural fields, located throughout the Study Area. Species observed within this vegetation community includes Wild Carrot (*Daucus carota*), Common Milkweed (*Asclepias syriaca*), Alfalfa (*Medicago sativa*), and Awnless Brome (*Bromus inermis*).

7. SWTM2-1: Red-osier Dogwood Mineral Deciduous Thicket Swamp
   This vegetation community is present directly adjacent to the pond feature, in an area of seepage. Dominant species observed within the community include Red-osier Dogwood (*Cornus stolonifera*), Spotted Jewelweed (*Impatiens capensis*), and Tartarian Honeysuckle (*Lonicera tatarica*).

8. MASM1-2: Bulrush Mineral Shallow Marsh
   This vegetation community represents the pond feature located within the Study Area. Shoreline species observed include Paper Birch (*Betula papyrifera*), Red-osier Dogwood (*Cornus stolonifera*), Pussy Willow (*Salix discolor*), and Balsam Poplar (*Populus balsamifera*). Species observed within the pond include Hard-stemmed Bulrush (*Schoenoplectus acutus*), Soft Rush (*Juncus effuses*), and Purple Loosestrife (*Lythrum salicaria*).

9. Maintained Lawn
   The only anthropogenic community is that of a maintained lawn, located within the 208 Lakeshore rd property. This is a typical maintained lawn with actively mowed grass. Mature lawn trees are present throughout the maintained area. These include Sugar Maple (*Acer saccharum*) and Eastern White Cedar (*Thuja occidentalis*).

4.3 Plants

Table 2 provides a list of vascular plants by vegetation community. One species listed is considered a SAR (Butternut [END, S2?]). No other identified plant species are designated provincially rare (i.e. S Rank not 1, 2, or 3). None of the provincially rare plant species reported for the general area within NHIC Grid Square 17NK5330 and

17NK5430 that encompass the Study Area were observed: *i.e.,* no observations of Smith's Bulrush (*Schoenoplectiella smithii*) S3, Stiff Yellow Flax (*Linum medium var. medium*) S3?, or A Lichen (*Melanelia subargentifera*) S1S3 (Appendix F).

4.3.1 Butternut

A total of 13 Butternut trees were identified within the property limits. Two Butternut trees (12 & 13) were identified on the adjacent property to the east as illustrated in Figure 2a. The majority of the Butternut trees are contained within the FODR1 vegetation community located within or directly adjacent to the Nipissing Ridge. Two trees (1 & 2) are located in the north-west quadrant the Study Area while one tree (15) is located in the south-west quadrant. A cluster (5 - 11) of Butternut trees is located directly adjacent to the pond feature as illustrated in Figure 2a.

The results of the BHA are as follows:

Two Butternut trees (3 & 13) were assessed as "Non-retainable" (Category 1).
Twelve Butternut trees (1 & 2 and 4 - 12 & 14) were assessed as "Retainable" (Category 2).
No Category 3 trees were identified.
No assessment was done for tree 15 and therefore should be considered as retainable (Category 2) until further assessment.

Additional details to the BHA can be found in Appendix E.

4.4 Wildlife

4.4.1 Birds

A total of 49 bird species were detected, 35 of which have shown possible or probable breeding evidence in the Study Area while one species was observed carrying food to young (*i.e.,* confirmed breeding) (Table 3). One species identified in the Study Area is considered a SAR – Eastern Wood-pewee (SC) observed at BBS points 3, 4, 9, and 10 as illustrated in Figure 2a.

Nocturnal Birds

No SAR nocturnal birds, including Whip-poor-will and Common Nighthawk were observed within the Study Area.

4.4.2 Amphibians

Results of amphibian surveys revealed the presence of American Toad (*Anaxyrus americanus* [S5]), Gray Treefrog (*Hyla versicolor* [S5]), Spring Peeper (*Pseudacris crucifer* [S5]), Green Frog (*Lithobates clamitans* [S5]), Wood Frog *Lithobates sylvaticus*

[S5]), and Western Chorus Frog (*Pseudacris maculata pop. 1* [S3]) in the Study Area (Table 4). All species were documented to occur within the pond feature in the Study Area. Spring Peepers were recorded within a small seasonally wet area at Station 2 during the first survey on April 20, 2016. Gray Treefrog (*Hyla versicolor*) was recorded within the FODR1 vegetation community, directly adjacent to the pond feature. Northern Leopard Frogs (*Lithobates pipiens* [S5]) were observed incidentally, while conducting other surveys in various locations throughout the Study Area including within the pond feature. Therefore, a total of 7 amphibian species were observed within the Study Area.

No SAR or provincially rare amphibians were detected in the Study Area or adjacent lands.

4.4.3 Reptiles

The results of Basking Turtle surveys identified Snapping turtle (*Chelydra serpentina* [S3; SC] on May 10, 2016 in the pond feature. No other turtle species, including SAR turtles, were identified within the Study Area during the course of the field investigations. Other observation of reptile use of the Study Area was limited to that of a single Eastern Garter Snake (*Thamnophis sirtalissirtalis*, S5) in the THD vegetation community in the north-west quadrant on June 10, 2016. Details of the surveys are reported in Table 5 (*i.e.,* start, end times, weather conditions, and observer).

4.4.4 Mammals

Seven species (White-tailed Deer [*Odocoileus virginianus*, S5], Red Squirrel [*Tamia sciurushudsonicus*, S5], Eastern Gray Squirrel [*Sciurus carolinensis,* S5], Northern Raccoon [*Procyon lotor*, S5], Coyote [*Canis latrans*, S5]), and Eastern Cottontail [*Sylvilagus floridanus*, S5]) were detected during the course of field investigations. No provincially or regionally rare species were documented in the Study Area. Other observation of mammal use of the Study Area was limited to that of an unknown bat species foraging over the pond feature on April 20 and May 6, 2016.

4.5 Aquatic Habitat and Fisheries

Three defined watercourses (east, central, and west) that host fish habitat are located within the site limits. One other feature (ephemeral watercourse/seep in the southern limits) was assessed, but determined to not host fish habitat nor have any connectivity to fish habitat. Of the three defined features, two were classified as permanent flowing watercourses, and one as ephemeral/seasonally flowing. All watercourses originate south of the site limits and flow in a northerly direction before crossing beneath Lakeshore Road East, a community trail system, Highway 26, and eventually discharging into Georgian Bay (Lake Huron) approximately 100 m to the north.

The following is a summary of the aquatic habitat and fish communities found during Azimuth's investigations:

4.5.1 Eastern Watercourse

This watercourse is located along the eastern boundary of the site limits (Figure 2). It has been classified as a permanent coldwater watercourse that hosts direct fish habitat. The watercourse flows within a well defined channel that has a wetted channel width ranging from 1 to 3 m wide, and an average wetted depth of 20 to 30 cm. Substrate consists of a mix of silt, cobble, and gravel, and watercress was observed throughout the channel. Fish sampling (electrofishing) captured juvenile Rainbow Trout *(Oncorhynchus mykiss)* and Longnose Dace *(Rhinichthys cataractae*). Water temperature at the site (August 2016) was 20.8°C, and a dissolved oxygen reading of 8.95 mg/l.

The presence of juvenile Rainbow Trout indicates that adult fish are migrating upstream from Georgian Bay and utilizing the watercourse as spawning and nursery habitat. Along with the coldwater thermal regime, the eastern watercourse is a sensitive watercourse that provides direct fish habitat (including spawning) for migratory Salmonids, specifically Rainbow Trout.

4.5.2 Central Watercourse

The central watercourse originates south of the site limits, crossing Grey Road 19, before entering the property (Figure 2) flowing in a northerly direction. The watercourse flows within a well vegetated corridor, displaying pool/riffle/run morphology throughout. The central watercourse has been classified as a permanent warm/coolwater watercourse that hosts direct fish habitat. During the summer months, fish are limited to refuge pools throughout the site limits, and significant perched culverts at Lakeshore Road East limit the potential for fish migration from Georgian Bay. Wetted channel widths range from 0.5 to 2 m and the average depth is 10 to 20 cm. Substrate consists of silt and clay, with some areas of cobble. Fish sampling within the central watercourse captured Longnose Dace (*Rhinichthys cataractae*), Blacknose Dace (*Rhinichthys atratulus*), Creek Chub (*Semotilus atromaculatu)*, and Brook Stickleback *(Culaea inconstans).* All fish species captured are commonly found within warm/coolwater fish communities within the geographic region. Water temperature at the site (August 2016) was 24.4°C, and dissolved oxygen measured 7.58 mg/l.

The presence of available fish habitat throughout the year, observed water temperatures, and the capture of warm/coolwater baitfish species indicates that the central watercourse should be classified as permanent, direct fish habitat for warm/coolwater baitfish species.

4.5.3 Western Watercourse

The western watercourse flows onto the site limits from the west, crossing Grey Road 19, and entering the site along the western boundary of the property where it flows north and eventually discharges into Georgian Bay. The watercourse is located within a defined vegetated corridor, seasonally flowing within a small 0.40 to 0.75 m wide distinct channel. During the August 2016 field investigations, the channel was 95% dry, with small isolated pools observed with less than 5 cm of standing water. No fish were observed or captured during the 2016 field investigations along the western watercourse. Beyond the lack of permanent base flow, the watercourse is severely inhibited due to the presence of impassable culverts/enclosures downstream of the site limits (Lakeshore Road East, private property at existing residential property, and Highway 26).

Based on the observations made during the 2016 field season, and the results of fish sampling efforts, the western watercourse can be classified as providing seasonal/ephemeral indirect fish habitat (i.e., flowing water during and for a short duration after rainfall events, precipitation/snow melt events).

5.0 SIGNIFICANT NATURAL HERITAGE FEATURES

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

5.1 Potential and Confirmed Habitat of Endangered and Threatened Species

Potential and confirmed habitat for Species listed as THR or END (ESA, 2007) was identified within the Study Area. Our initial assessment considered in combination with data acquired through species specific surveys has identified habitat potential as follows:

- Confirmed Habitat for Endangered Plant Species - Butternut
- Potential Roosting Habitat for Endangered Bat Species.

5.1.1 Butternut

The presence of 15 Butternut trees within the Study Area and adjacent lands (Figure 2a) designates the forest community FODR1 as confirmed habitat of END species. The majority of the Butternut trees are located within the Nipissing Ridge.

5.1.2 Endangered Bat Species

Little Brown Myotis, Northern Long-eared Myotis, and Tri-colored bat use a wide variety of habitats for summer roosting including rock crevices, buildings, bridges, caves, mines, and large snags (>25 cm diameter at breast height) in the early stages of decay (MNRF 2015, COSEWIC 2013). Large trees within second growth forest communities (FODR1 and FODM3-1; Figure 2a) may provide suitable roosting habitat for these species.

The results of the maternity roost survey designate the FODM3-1 forest community to be high quality potential maternity roost habitat for END bat species.

5.2 Candidate Significant Wildlife Habitat

There appear to be no designated Significant Wildlife Habitat (SWH) functions associated with the Study Area 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 6.1 – 6.6. The following presents a summary of the Candidate SWH associated with the Study Area.

5.2.1 Potential Bat Maternity Colony Habitat

Large snag trees within second growth forest communities (FODR1 and FODM3-1; Figure 2a) may provide suitable roosting habitat for END bat species.

The results of the bat snag density survey conducted on November 30, 2016 indicate that the FODM3-1 forest community meets the minimum snag density for candidate maternity roosting habitat. Therefore there is potential for that vegetation community to function as bat maternity colony habitat. Roosting habitat is considered to be a Seasonal Concentration Area, and therefore, Candidate SWH as per MNRF direction (MNRF 2015).

5.2.2 Potential Turtle Wintering Area

According to SWH criteria, wintering turtle species require water deep enough not to freeze and have sift mud substrates. The pond feature in the Study Area potentially qualifies as a candidate Turtle Wintering Habitat.

5.2.3 Potential Turtle Nesting Area

One area of exposed mineral soil (*i.e.,* sand) potentially suitable for nesting turtles was identified within the Study Area, located within the FOCM2-2 forest community and adjacent THD community to the east (Figure 2a). This area is located within 100m of the identified potential turtle wintering area. No other potential habitat was identified within the Study Area.

5.2.4 Potential Raptor Wintering Area

No species specific surveys were completed to confirm the presence of raptor wintering habitat. However, the matrix of open and forested habitats within the Study Area may provide suitable habitat for wintering raptors and is therefore considered in this assessment.

5.2.5 Potential Reptile Hibernaculum

Reptile Hibernaculum habitat was not identified within the Study Area. However suitable features (*i.e.,* burrows, rock crevices) are likely present within the forest communities in the Study Area, especially within the Nipissing Ridge Area, and thus is considered within this assessment.

5.2.6 Amphibian Breeding Habitat (Woodland)

Amphibian surveys conducted in the Study Area in 2016 revealed that amphibian breeding habitat is present within the pond feature in the Study Area. Therefore the pond feature and the adjacent forest community FODR1 should be considered candidate SWH for Amphibian Breeding Habitat.

5.2.7 Habitat for Special Concern Species

Habitat for SC species is attributable to the Study Area and adjacent lands as candidate SWH in regard to Eastern Wood-pewee, a forest breeding bird designated SC, and Snapping Turtle (SC).

Eastern Wood-pewee

This species was identified during the course of the field investigations, within the FODR1 and FODM3-1 deciduous forest communities. Probable breeding of this species was determined based on the criteria of the OBBA (2001).

Snapping Turtle

This species was identified during the course of the field investigations, within the pond feature. No other feature within the Study Area capable of sustaining Snapping Turtle was identified.

5.2.8 Amphibian Movement Corridor

The FODR1 forest community may potentially be used as a movement corridor for some species of amphibian observed within the pond feature.

5.3 Candidate Significant Woodland

As illustrated in Map 2 of Appendix B in the Grey County Official Plan portions of the Study Area are mapped as Significant Woodland (Appendix B). Therefore, forest communities FODR1, FODM3-1, and FOCM2-2 within the Study Area should be considered as belonging to the Significant Woodland designation.

As per the County's OP Section 2.8.1:
It is acknowledged that there may be inaccuracies in the mapping; however it does show areas of environmental constraint.

Due to the nature of the County's Significant Woodland assessment (*i.e.,* desktop assessment), areas which have been mapped as belonging to the Significant Woodland designation within the Study Area are representative of thicket communities and hedgerow communities and therefore are not considered in this assessment. Suggested Significant Woodland designation within the Study Area is illustrated in Figure 2b.

The woodland within the Study Area (assessed woodland) is part of an approximately 166ha woodland that extends to the east and south of the Study Area as illustrated in Figure 2b. The size and configuration of the assessed woodland allows for wildlife movement (*i.e.,* linkages) and provides natural hydrological processes. No interior habitat conditions are present within the assessed woodland.

5.4 Aquatic Habitat and Fisheries

All three watercourses within the Study Area provide important connectivity to Georgian Bay and were found to function as either direct or seasonal fish habitat. The presence of juvenile Rainbow Trout within the eastern watercourse indicates that adult fish are migrating upstream from Georgian Bay and utilizing the watercourse as spawning and nursery habitat. Therefore, this particular watercourse is of high sensitivity due to the direct fish habitat (including spawning) for migratory Salmonids, specifically Rainbow Trout.

There are no known aquatic SAR within the watercourses in the Study Area, and no aquatic SAR from Georgian Bay would be expected to use or inhabit these watercourses.

6.0 PROPOSED DEVELOPMENT

The Draft Site Plan currently proposes development in all four quadrants within the Study Area (Figure 3) including blocks of open space, singles, townshouses, mixed blocks of singles and towns and private streets. Each of the residential units will be

located on an individual land lease. The proposed development will be serviced by full municipal water and sewer.

The majority of the development is located within Thicket and Meadow communities as illustrated in Figure 3. Some encroachments into Forest communities are currently proposed, with vegetation removals proposed in the FODM7-2 in the north-east quadrant and, FODM3-1 and FODR1 in the south-west quadrant, as well as the FOCM2-2 in the south-east quadrant. Two areas have been identified for SWM purposes, both located in the north-east quadrant including the partial use of the existing pond feature. It is our understanding that the remaining portion of the pond will be maintained in a natural state, not being utilized for SWM purposes. The existing residence located in the 208 Lakeshore Drive will be maintained in its current state, to be used as a sales office.

Two main access roads with associated lanes are proposed throughout the Study Area. The first road will access the development from Grey County Road 19, linking the north and south quadrants. The second road will contain two access points from Lakeshore Road East, linking the east and west quadrants.

7.0 IMPACT ASSESSMENT

The results of background data review, detailed site assessments and analysis revealed the following SNHF and functions associated with the Study Area and adjacent lands:

- Potential and Confirmed Habitat for THR and END Species:
    - Butternut (Confirmed); and
    - Endangered Bat Species (Potential).
- Candidate Significant Wildlife Habitat:
    - Potential Bat Maternity Colony Habitat;
    - Turtle Wintering Area;
    - Potential Turtle Nesting Area;
    - Potential Raptor Wintering Area;
    - Potential Reptile Hibernaculum;
    - Amphibian Breeding Habitat (Woodland);
    - Habitat for Special Concern Species; and
    - Amphibian Movement Corridor.
- Significant Woodland; and
- Aquatic Habitat and Fisheries.

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

7.1 Potential and Confirmed Habitat of Endangered and Threatened Species

7.1.1 Butternut

Fifteen Butternut trees were identified within the Study Area and adjacent lands. This species is listed as END under the ESA, and as such the species and its habitat are protected from harm or destruction.

The MNRF generally accepts that a 25m setback to the tree would be sufficient to protect the individual from adjacent development. The proposed Draft Site Plan has been designed to respect the general setback of 12 identified Butternut trees (Figure 3). Therefore, compensation will be required as per O.Reg 242/08 Section 23.7 for the removal of one Butternut, (tree number 15) located in the south-west quadrant of the Study Area. Although a BHA was not conducted for tree 15, it can be determined that it does not meet criteria for Category 3 (achievable) tree, as it does not occur within 40 m of at least one Butternut tree which is severely affected by Butternut Canker. Additional works and details of the potential compensation strategy are outlined in Section 8.

The MNRF considers 'harm' as any works proposed within the 25m setback. Any future works within the 25m setback of any Butternut will need to be reviewed at the detailed design stage of the project. Potential future works within the pond feature for SWM purposes would be within the setbacks to trees number 9 and 10 as illustrated in Figure 3. The general 25m setback is based on (1) the habitat conditions required for the survival of each tree can be maintained, including area for the potential growth of trees that may survive to maturity; and (2) habitat for regeneration that occurs within this radius is also protected (Poisson 2013). The applicable setbacks to these trees are not within habitat, but rather within the pond feature. Further assessment of potential harm to trees 9 and 10 will be required at the time of Detailed Design stage of the project.

7.1.2 Endangered Bat Species

Ontario's ESA affords Little Brown Myotis, Northern Long-eared Myotis, and Tri-colored Bat individual and habitat protection as an END species. Ontario's ESA affords these species individual and habitat protection as END species.

FODR1

The FODR1 forest community could provide roosting habitat for END bat species given the presence of second growth and mature trees. One area of encroachment is currently proposed under the Draft Site Plan, located within the south-west quadrant of the Study Area (Figure 3). There is no expectation that the removal of that area would have a negative effect upon END bat species and their habitat based on the overall availability of

potential habitat retained post-development within the Study Area. Therefore proposed works are expected to have no negative ecological impact upon END bat species and their habitat (FODR1) provided that conformance is demonstrated for environmental considerations and mitigation described in Section 8 below.

FODM3-1

As discussed, the FODM3-1 forest community located within the north-west quadrant of the Study Area was determined to be potential high quality maternity roost habitat for END bat species. Currently, no development is proposed within the identified potential habitat. Should future works be proposed within this forest community, acoustic monitoring following the *Technical Note Species at Risk Bats* (MNRF 2015) survey protocol may be required to determine if endangered bat species are utilizing the identified habitat as described in Section 5.1.2.

As per the MNRF survey protocol the following lists the additional steps required to ensure no contravention of the ESA for END bat species should future works occur within the identified habitat:

- Step 3 – Selection of acoustic monitoring locations:
    - Monitor all high quality maternity roost habitat should to ensure full coverage of the ELC polygon.
    - Position acoustic monitoring stations within 10m of a candidate roost tree (multiple stations may be required to cover the area adequately).
- Step 4 – Acoustic Field Data Collection:
    - Monitor the identified candidate roost tree in the evenings between June 1 and June 30.
    - If activity is not observed at the site on the initial visit, a minimum of 10 visits should take place to confirm the site is not maternity roost habitat for END bat species.
    - Surveys should occur on warm/mild nights with low wind and no precipitation.
    - Use modern broadband bat detectors with condenser microphones.

Should the results of the acoustic monitoring indicate the presence of END bat species, further detailed mapping and the snag trees would be required to address potential negative impacts to the habitat as a result of future development.

One area of encroachment is currently proposed under the Draft Site Plan, located within the south-west quadrant of the Study Area (Figure 3). There is no expectation that the removal of that area would have a negative effect upon END bat species and their habitat

based on the overall availability of potential habitat retained post-development within the Study Area. Therefore proposed works are expected to have no negative ecological impact upon END bat species and their habitat (FODM3-1) provided that conformance is demonstrated for environmental considerations and mitigation described in Section 8 below.

7.2 Candidate Significant Wildlife Habitat

7.2.1 Potential Bat Maternity Colony Habitat

As discussed in Section 7.1.2, development is not proposed within the identified potential bat maternity colony habitat (*i.e.,* FODM3-1). Therefore, proposed works are expected to have no negative effect upon bat maternity colony habitat provided that conformance is demonstrated for environmental considerations and mitigation described in Section 8 below.

7.2.2 Turtle Wintering Area

As discussed above, the pond feature in the Study Area has potential to provide habitat for wintering turtle species, due to the presence of Snapping Turtle, identified during field investigations. The Draft Site Plan has been created with the intention of maintaining a portion of the pond in a natural state. It is expected that maintaining a portion of the pond in its current natural state would not alter the quality or quantity of water in the habitat given that ground water recharge does not play an important role. Furthermore, grading and other works un-related to the proposed recommendation under Section 8 would not occur as a result of the proposed works. Therefore, there is no expectation that the proposed works would have a negative effect upon turtle wintering habitat provided that conformance is demonstrated for environmental considerations and mitigation described in Section 8 below.

7.2.3 Potential Turtle Nesting Area

As discussed above, one area located within the FOCM2-2 and adjacent THD community to the east contain suitable exposed soils (*i.e.,* sand) which may provide habitat for nesting turtles. Particular care was taken during the 2016 field investigations (*i.e.,* vegetation surveys) to identify any nesting signs within the Study Area, particularly within the identified potential habitat. No evidence of nesting turtles (*i.e.,* shells, tracks, nests) or predation was identified at the time of vegetation surveys on May 10, July 18, and September 16, 2016. Given the presence of wildlife burrows within the Nipissing Ridge, it can be expected that a high level of nest predation would occur, thus evidence should have been present. There's not expectation that turtle species utilize this small area for nesting purposes, however future consideration during excavation of the area should be applied as recommended in Section 8. The loss of this small area is not

expected to have a negative ecological impact on the overall availability of turtle nesting habitat in the general area.

7.2.4 Potential Raptor Wintering Habitat

Potential Raptor Winter habitat has been observed within the Study Area. The vegetation communities present (Deciduous Forest and Cultural Meadow) meets the size criteria to be considered significant as prescribed by the SWH Assessment Criterion for Ecoregion 6E (MNRF, 2015). Sufficient species data is not available at this time to confirm usage of the habitat by the listed species (Table 2). Regardless, this type of habitat is not unique or rare to the Township or County. Specifically, considerable habitat will remain south and east of the development after build out. Thus, habitat for wintering raptor species will be retained post development, and no negative ecological impact to the species populations is expected to occur as a result of the proposed development.

7.2.5 Potential Reptile Hibernaculum

Potential reptile hibernacula is present within the deciduous forest communities and associated with the presence of the Nipissing Ridge. The ridge and associated forest habitat will be retained post-development. Furthermore, the woodland corridor within the Study Area (*i.e.,* FODR1) provides for wildlife movement to and from the property. Thus, access to the potential hibernaculum will not be impeded post development. Therefore, no negative ecological impact to potential reptile hibernaculum is expected to occur as a result of the proposed development provided that conformance is demonstrated for environmental considerations and mitigation described below (Section 8).

7.2.6 Amphibian Breeding Habitat (Woodland)

As discussed above, the pond feature and adjacent forest community FODR1 qualify as candidate SWH for amphibian breeding habitat.

The current function of the pond provides important attenuation of water runoff, dampening the effect of spring runoff and providing some flood protection of properties situated south of the pond. It is our understanding that ground water recharge does not play an important role in maintaining water levels, which results in near-dry conditions by mid June, especially in the shallow areas. As such, the pond only provides suitable habitat conditions for amphibians and turtles from ice-off to mid-June, providing enough time for larvae to develop into juveniles before the pond dries up.

The Draft Site Plan intends to use the west portion of the pond feature for Stormwater Management (SWM) while retaining the east portion as a natural pond, maintaining current suitable conditions for amphibian breeding habitat.

Maintaining a portion of the current pond as a natural pond is expected to be sufficient in size to support the amphibian population observed during the 2016 field investigations. In addition, the presence of the Silver Creek Wetland within approximately 1km of the Study Area would also provide suitable habitat from any amphibian migration resulting from the loss of approximately half of the current pond. Furthermore, the adjacent vegetation communities will be retained as per the Draft Site Plan, which will continue to provide an abundance of downed woody debris and shaded conditions.

The loss of a portion of the pond feature to SWM functions is not expected to have a negative ecological impact to the current function of the pond provided that conformance is demonstrated for environmental considerations and mitigation described below (Section 8).

7.2.7 Habitat for Special Concern Species

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 Study Area would constitute a negative impact if there is an expectation that Eastern Wood-pewee and Snapping Turtle would abandon the adjacent woodlands and wetlands as breeding and overwintering habitat or be reduced to significantly lower levels of abundance (*i.e.,* beyond fluctuations deemed part of natural ecosystem dynamics).

Eastern Wood-pewee

The results of field studies indicated that the FODR1 and FODM3-1 forest communities within the Study Area function as Habitat for Special Concern Wildlife in regard to Eastern Wood-pewee, a woodland breeding bird designated SC provincially.

The Draft Site Plan shows minor encroachments into the FODR1 (1,956m^2) and FODM3-1 (1,492m^2) forest communities in the south-west quadrant which represents approximately 8% and 4.8% respectively, of the total area of the forest communities associated with Eastern Wood-pewee habitat within the Study Area.

Based on the field data, we estimate that a total of two males were present within the FODR1 and FODM3-1 forest communities. As per the COSEWIC Assessment and Status Report on the Eastern Wood-pewee (2012), territory size of the species averages 1.76 ± 0.24 ha. Therefore, given the forested areas maintained post-development (*i.e.,*

FODR1 2.2ha, FODM3-1 2.9ha), 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.

Snapping Turtle
The results of our Basking turtle surveys indicate that the pond feature functions as Habitat for Special Concern Wildlife in regard to Snapping Turtle, a species designated Sc provincially.

As discussed above, the Draft Site Plan intends to use the west portion of the pond feature for SWM functions while retaining the east portion as a natural pond, maintaining current suitable conditions for Snapping Turtle. Furthermore, the Draft Site plan intends to maintain connectivity between habitats. Provided that conformance is demonstrated for environmental considerations and mitigation described below (Section 8).

7.2.8 Amphibian Movement Corridor

As discussed above, potential amphibian movement corridor was identified within the FODR1 forest community. A road is proposed to link the south and north quadrants, which would alter the connectivity of this feature for any movement along the Nipissing Ridge. Amphibian movement is largely expected to originate from the pond feature identified as Amphibian Breeding Habitat, to other summer habitats directly adjacent to the pond.

Azimuth suggests that at the detailed design stage of the project, watercourse crossings be designed to consider the passage of migrating amphibians, in addition to flood conveyance as per the Best Management Practices for Mitigating the Effects of Roads on Amphibian and Reptile Species at Risk in Ontario (MNRF. 2016). We would also suggest that signage indicating the peak amphibian migration period be installed at each of the watercourse crossing areas. In doing so, the proponent will reduce potential amphibian mortality associated with increased vehicular presence in the area.

Therefore, there's no expectation that the proposed development would have a negative ecological impact to amphibian movement corridor provided that conformance is demonstrated for environmental considerations and mitigation described above.

7.3 Candidate Significant Woodland

The PPS states that in regard to woodlands, "Significant" means:

"...an area which is ecologically important in terms of features such as species composition, age of trees and stand history, functionally important due to its contribution to the broader landscape because of its composition, or past management history;..."

As per Table 7, of the eight criteria provided in the Natural Heritage Reference Manual - NHRM (MNRF, 2010) for evaluation of woodlands – the assessed woodland satisfies six. Standard practice dictates that if a woodland satisfies even one of the criteria, the woodland is a candidate for identification as Significant Woodland (MNRF, 2010).

The proposed development will remove approximately 1,14ha of forest cover, out of approximately 166ha of continuous forest habitat present within the broader landscape. This corresponds to less than 0.7% of the forested area.

Impacts related to the removal of the woodland habitat within the Study Area would be negligible as the woodland feature will continue to provide the ecological functions associated with the feature, including provision of wildlife habitat for sensitive species and movement corridors. Therefore, the ecological function of the Significant Woodland habitat is expected to remain intact post-development and the feature will not be impacted as a result of the development.

Provided that conformance is demonstrated for environmental considerations and mitigation described below (Section 8), no negative ecological impacts to the Significant Woodland feature will result from the proposed development.

7.4 Aquatic Habitat and Fisheries

The proposed site plan indicates that there will be no significant alteration or encroachments to the watercourses located within site limits. As per the site plan (Figure 3), the three significant watercourse features assessed (West, Central, East) will all have sufficient buffers (no touch, maintain natural/native vegetation) consistent with agency recommended buffer widths. Therefore, if the appropriate mitigation measures are applied during construction for working around water, the form and function of the fish and fish habitat found within the watercourses should not be altered.

7.4.1 Eastern Watercourse

The eastern watercourse has been classified as direct coldwater fish habitat, thus a minimum 30 m buffer has been applied from the west bank and extends west to the area of proposed development. This natural buffer width and the proposed surrounding land

use is not expected to alter the form and function of the fish habitat and existing coldwater thermal regime found within the eastern watercourse.

7.4.2 Central Watercourse

The central watercourse has been classified as permanent, direct fish habitat for warm/coolwater baitfish species. Therefore, the proposed 30 m (15 m from each bank) natural setback throughout the site limits is expected to provide a suitable buffer to maintain the form and function of the warm/coolwater fish habitat. Site plan drawings indicate the potential for three crossings (culvert/bridges). Based on the classification of the watercourse and lack of sensitive habitat observed, it is expected that the construction of watercourse crossings – which will be specifically subject to agency review and approvals to ensure proper sizing, fish passage, *etc.* – will be considered low risk and will not have a significant impact on the fish and fish habitat found within the central watercourse.

7.4.3 Western Watercourse

The western watercourse provides seasonal/ephemeral indirect fish habitat, thus has been buffered with an approximate 19 m to 52 m wide natural buffer from its east bank to the western limits of development. The seasonality of the flow regime within this system will be maintained, and the watercourse is expected to continue to provide indirect fish habitat within a natural corridor post-development.

8.0 ENVIRONMENTAL CONSIDERATIONS AND MITIGATION

8.1 Species at Risk

The location of Butternut trees within the Study Area should be located through site survey and included on all final site plan drawings, to ensure that the proposed development is set outside of the 25m disturbance setback. No site alteration (grade changes, tree clearing, grubbing, *etc*,) is permitted within this setback.

It should be noted that the absence of a protected species within the Study Area 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 and SARA. Changes to policy, or the natural environment, could result in shifts, removal, or addition of new areas to the list of areas currently considered SNHF and functions. 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 individuals, other than Butternut trees identified with white numbering, 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

Should future works be proposed within the identified potential habitat for END bat species (*i.e.,* FODR1, FODM3-1), additional works (*i.e.,* acoustic monitoring) are required in order to address the potential impact to END bat species from the proposed development. Timing and methods are described above under Section 7.1.2.

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 May to approximately late-August to avoid impacting potential bat roosting habitat. Should bats be present, impacting these trees outside of this prescribed period could be considered damage or destruction of habitat for END species and therefore in contravention of the ESA.

Where possible, we recommend retaining those cavity trees on-site that don't pose a falling hazard to future dwellings as a way of maintaining "wildlife cavity trees" in general as benefit to local wildlife.

8.1.2 Butternut

Damage or destruction of Butternut observed or alteration of lands within 25m of the individuals is not permitted without prior authorization from MNRF. The Activity must be registered with MNRF under Section 23.7 of Ontario Regulation 242/08. The proponent will be required to plant compensation Butternut saplings and companion trees/shrubs for any works within 25m, including removal, of the impacted trees and a commitment to regular monitoring of the planted individuals to ensure successful establishment. A BHA will be required to assess Butternut tree 15 prior to registering the Activity. Applying a tree preservation fence along the 25m setback of this tree is recommended prior to conducting the BHA.

Should compensation plantings be required following the BHA (removal; tree 15) and review of the Detailed Design (harm; trees 9 & 10), open areas throughout the Study Area (*i.e.,* CUM) can be utilized for the plantings. The compensation requirements for the proposed development should be confirmed once the Detailed Design (*i.e.,* site

grading plan) has been finalized. If works occur without registration, the activity will be in contravention of the ESA and the proponent would be open to charges under the Act.

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. 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 Candidate Significant Wildlife Habitat

8.3.1 Amphibian Breeding and Turtle Overwintering Area

Wildlife Salvage

Consideration should be given to the re-location of frog and turtle species prior to any works within the pond feature. Amphibian and turtle habitat should be selected prior to re-location. Conditions of the selected habitat should include native plantings of aquatic, semi-aquatic and wetland/flood fringe vegetation species to best replicate the current features of the pond. A biologist/ecologist should be on site during the decommissioning of the pond to identify and re-locate any additional wildlife that is found through the duration of this process. Re-location of amphibian and reptile species should occur during the most active times of the year. Typically re-location is best to occur between May – September, however this is highly dependent on weather conditions.

Habitat Enhancement

A portion of the existing pond will be maintained in its current natural state, while the other portion functions as SWM. Enhancing the natural pond to further encourage re-population of amphibian and turtle species following works is recommended in order to minimize the potential indirect impacts to the current function of the pond. Habitat enhancement should aim to increase the current function of the pond.

Logs and other dead fall material (ranging from 10-20cm DBH) should be placed in the pond to provide additional cover and structure for wildlife. The inclusion of this natural woody debris at approximately 2-3m intervals around the perimeter of the open water areas should be sufficient to develop structure within the pond. The exact placement of structure within the design is not crucial as long as there is variation of structure and size of woody debris. In addition to structural elements, large and emergent woody debris is to be placed centrally between the proposed turtle nesting habitats, to provide basking surface. It is recommended that trees which are to be removed and suitable deadfall

currently found within the proposed footprint of the development be retained for these purposes.

Any disturbed areas surrounding the natural pond as a result of proposed works should be planted with native shrub species such as Red-osier Dogwood and willow species. A nursery crop of Annual Ryegrass (*Lolium multiflorum*) should be applied to all disturbed soils immediately after pond construction, to prevent dominance of invasive species. Additionally, a native wetland seed mix should be distributed around the perimeter of the pond. Annual Ryegrass is a non-spreading bunch grass, which is quick-growing and is able to "prevent erosion, improve soil structure and drainage, add organic matter, suppress weeds, and scavenge nutrients" (SARE 2012). This crop will be gradually substituted by the native wetland plants present within the recommended seed mix.

Finally, measures should be employed to ensure no conveyance of treated stormwater from the adjacent pond as a result of increased spring runoff. Constructing a permanent berm suitable of retaining a high influx of water, and enhancing outlet controls is recommended to prevent mixing of stormwater within the natural pond.

8.3.2 Potential Turtle Nesting Area

Precautions should be taken to prevent any harm to potential nesting turtles within the identified habitat (*i.e.,* FOCM2-2 and adjacent THD). Excavation of the area should occur outside of the turtle nesting season (*i.e.,* May - July) to avoid impact to eggs should turtle species be utilizing the area at the time. Furthermore, placement of exclusion fencing around the work area should be applied in order to prevent any migration of nesting turtles within the work area.

8.4 Retained Vegetation

Tree protection measures should be implemented prior to commencement of construction activity to ensure tree resources designated for retention 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.

8.5 Timing Restrictions

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

8.6 Aquatic Habitat and Fisheries

Diligent application of sediment and erosion controls should be installed prior to all construction activities occurring in proximity to the watercourses to minimize the extent of accidental or unavoidable impacts to fish habitat, and alleviate the risk of sediment entering the watercourses. Sediment and erosion controls should be installed a minimum of 30 m for the eastern watercourse and 15 m from the central and western, and must be maintained throughout construction and until vegetation is re-established post-construction.

All maintenance of machinery required during construction must be conducted 30 m away from the watercourses to prevent accidental spillage of deleterious substances that may harm the aquatic environment. Snow fencing or equivalent (*i.e.*, silt fencing) should be installed at the limit of the work area to prevent the accidental intrusion of machinery operations into adjacent undisturbed natural areas.

At this time, the need for dewatering of the construction area is unknown. If dewatering is required, all water should be pumped to a filter bag (*i.e.*, envirobag or equivalent) prior to being released into any watercourse feature. Filter bags should be placed a minimum of 30 m from the watercourses on stable, vegetated ground to allow fines to settle out of the water. Monitoring of dewatering operations should occur throughout the construction process to ensure water is free of fines before entering the watercourses.

9.0 POLICY & REGULATION CONFORMITY

9.1 Provincial Policy Statement

The proposed development results in no negative direct or indirect impact to significant natural heritage features or functions (*i.e.,* wetlands, woodlands, valleylands, ANSIs, wildlife habitat functions) (Policies 2.1.4, 2.1.5, 2.1.6, & 2.1.8), including potential

animal movement corridors/habitat linkages (Policy 2.1.2) and can be achieved with no impact to habitat of END and THR species - **Conforms.**

DFO authorization will be required at the stage of detail design to ensure the proposed development will result in no serious harm to fish (Policy 2.1.6). - **Conforms.**

9.2 Ontario's *Endangered Species Act*, 2007

The proposed development can be constructed with no contraventions to individuals or habitat of END or THR species of Ontario - **Conforms.**

9.3 County of Grey Official Plan, 2013

The proposed development will result in no negative direct or indirect impact to significant natural heritage features and functions (*i.e.,* Significant Woodlands, ANSIs, valleylands, wildlife habitat, and habitat of THR and END species) (Policies 2.8.4.1, 2.8.6.1, 2.8.6.2) - **Conforms.**

9.4 Town of Blue Mountains Official Plan

The proposed development applies a 15 m setback to the margin of the area designated as Hazards Lands (*i.e.,* Nipissing Ridge) (Policy B5.4.2) - **Conforms.**

9.5 Niagara Escarpment Plan

The proposed development will result in no loss of Significant Woodland, with minimal disturbance of treed areas (Policy 2.7.1), including a 15 m setback to the margin of the area designated as Hazards Lands (*i.e.,* Nipissing Ridge) (Policy 2.7.2). The proposed development results in no direct or indirect negative impact to habitats of END and THR species, including potential animal movement corridors/habitat linkages and proposes to habitat enhancement within identified amphibian habitat (Policies 2.8.1 & 2.8.2) - **Conforms.**

10.0 CONCLUSIONS

At this time, Azimuth believes that the proposed development will not negatively affect any of the identified SNHF including SWH, Habitat for THR and END Species, Significant Woodland, or Fish Habitat on or adjacent (*i.e.*, within 120m) to the Study Area, provided that the recommended mitigation measures are implemented. Further study relating to Butternut will be required at the time of Detailed Design to ensure that the proposed development will not result in contravention of the *Endangered Species Act*, 2007. Wildlife in the area will continue to utilize the naturalized communities of the Study Area, specifically within the retained woodland areas and pond feature.

11.0 REFERENCES

County of Grey Official Plan. 2013

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

COSEWIC. 2012. Assessment and Status Report on the Eastern Wood-pewee *Contopus virens* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa.

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

Government of Canada. 2014. *Migratory Birds Convention Act*. http://laws-lois.justice.gc.ca/eng/acts/M-7.01/

Lee, H., W. 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. 225pp.

MMAH. 2014. 2014 Provincial Policy Statement under the *Planning Act*. Ministry of Municipal Affairs and Housing. Queen's Printer for Ontario. Toronto, ON. 50pp.

MNRF. 2016. Best Management Practices for Mitigating the Effects of Roads on Amphibian and Reptile Species at Risk in Ontario. Queen's Printer for Ontario. 112 pp.

MNRF. 2016. Species at Risk in Ontario List.
https://www.ontario.ca/environment-and-energy/species-risk-ontario-list

MNRF. 2015. Technical Note Species at Risk (SAR) Bats.

MNRF. 2014. Survey Protocol for Blanding's Turtle (*Emydoidea blandingii*) in Ontario.

MNR. 2010. Natural heritage reference manual for Policy 2.3 of the provincial policy statement, 2005 (2nd Ed.). Ontario Ministry of Natural Resources, Toronto, ON.

MNRF. 2015. Significant Wildlife Habitat criterion schedules for Ecoregion 6E. MNRF Regional Operations Division & Northeast Region Resources Section. 39pp.

MNR. 2000. Significant Wildlife Habitat Technical Guide. Ontario Ministry of Natural Resources, Fish & Wildlife Branch, Wildlife Section. Peterborough, ON.

Natural Heritage Information Centre (NHIC) internet web page. 2016. Government of Ontario, Ministry of Natural Resources (www.mnr.on.ca/MNR/nhic).

Niagara Escarpment Commission. The Niagara Escarpment Plan. 2015

Ontario Breeding Bird Atlas. 2001. Guide for Participants. Revised February 2003. 45pp.

Ontario Ministry of Municipal Affairs and Housing. 2014. Provincial Planning Statement.

Poisson, G., and M. Ursic. 2013. Recovery Strategy for the Butternut (Juglans cinerea) in Ontario. Ontario Recovery Strategy Series. Prepared for the Ontario Ministry of Natural Resources, Peterborough, Ontario. v + 12 pp. + Appendix vii + 24 pp. Adoption of the Recovery Strategy for the Butternut (Juglans cinerea) in Canada (Environment Canada 2010).

Sustainable Agriculture Research and Education – SARE. 2012. Managing Cover Crops Profitably. Nonlegume Cover Crops - Annual Ryegrass. Third Edition. Handbook Series Book 9. College Park, Maryland, USA: United Book Press, Inc., University of Maryland. 248 pp. Available at: http://www.sare.org/SARE-Nationwide/Learning-Center/Books/Managing-Cover-Crops-Profitably-3rd-Edition/Text-Version/Nonlegume-Cover-Crops/Annual-Ryegrass

Town of Blue Mountains Official Plan. 2016

LEGEND:

Approx. Property Boundary

REG MAP

250m 0 750m

HORIZONTAL SCALE 1:25,000

AZIMUTH ENVIRONMENTAL CONSULTING, INC.

Study Area Location

Craigleith Environmental Assessment,
Blue Mountains, ON

DATE ISSUED: *April 2016*	Figure No.
CREATED BY: *JLM*	
PROJECT NO.: *15-289*	1
REFERENCE: *MNRF*	

DAYSTAMP: M:\15 Projects\15-289 Craigleith Environmental Assessment\04.0 - Drafting\15-289.dwg

Plotted by: JMCCARTNEY on July 18, 2016 at 9:31am
File: M:\15 Projects\15-289 Craigleith Environmental Assessment\04.0 - Drafting\15-289.dwg Layout: Figure 1 Plotscale: 0.5

LEGEND:

- Approx. Property Boundary
- Watercourse
- Seeps/Drainage
- Butternut Locations with 25m Setback
- Breeding Bird Survey Locations
- EWPW Survey Site
- Amphibian Stations and Direction
- Bank/Ridge
- Vegetation Communities

CUM	Cultural Meadow
FOCM2-2	Dry-Fresh White Cedar Coniferous Forest Type
FODM3-1	Dry-Fresh Poplar Deciduous Forest Type
FODM7-2	Fresh-Moist Green Ash-Hardwood Lowland Deciduous Forest Type
FODR1	Dry-Fresh Sugar Maple Deciduous Forest Type
MASM1-2	Bulrush Mineral Shallow Marsh
THD	Deciduous Thicket Type
SWTM2-1	Red-osier Dogwood Mineral Deciduous Thicket Swamp Type

50m 0 100m

HORIZONTAL SCALE 1: 3,000

DAYSTAMP: M:\15 Projects\15-289 Craigleith Environmental Assessment\04.0 - Drafting\15-289.dwg

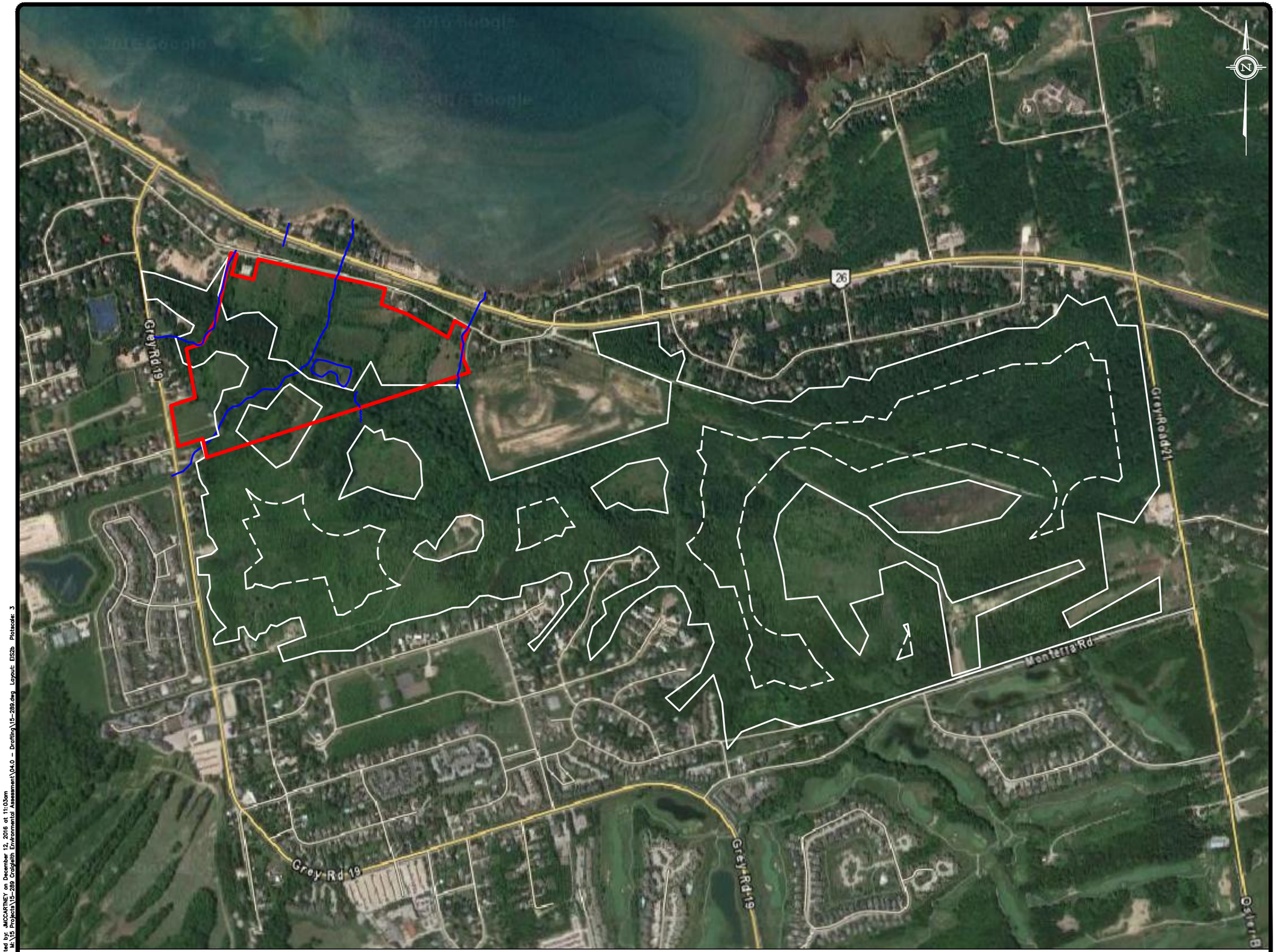
Plotted by: JMCCARTNEY on December 20, 2016 at 3:21pm
File: M:\15 Projects\15-289 Craigleith Environmental Assessment\04.0 - Drafting\15-289.dwg Layout: EIS2a Photocde: 3

AZIMUTH ENVIRONMENTAL CONSULTING, INC.

Environmental Features

Craigleith Environmental Assessment
Blue Mountains, ON

DATE ISSUED:	April 2016	Figure No.
CREATED BY:	JLM	2a
PROJECT NO.:	15-289	
REFERENCE:	Grey County Maps	



LEGEND:

- *Approx. Property Boundary*
- *Watercourse*
- *Woodland (white)*
- *Woodland Interior (white)*

150m 0 300m

HORIZONTAL SCALE 1:10,000

AZIMUTH ENVIRONMENTAL CONSULTING, INC.

Significant Woodland

Craigleith Environmental Assessment
Blue Mountains, ON

DATE ISSUED:	*October 2016*	Figure No.
CREATED BY:	*JLM*	2b
PROJECT NO.:	*15-289*	
REFERENCE:	*Grey County Maps*	

DAYSTAMP: M:\15 Projects\15-289 Craigleith Environmental Assessment\04.0 - Drafting\15-289.dwg

Plotted by: JMCCARTNEY on December 12, 2016 at 11:03am
File: M:\15 Projects\15-289 Craigleith Environmental Assessment\04.0 - Drafting\15-289.dwg Layout: EIS2b Plotscale: 3

LEGEND:

- Approx. Property Boundary
- Watercourse
- Watercourse Setbacks (white)
- Seeps/Drainage
- Butternut Locations with 25m Setback
- Bank/Ridge
- Vegetation Communities

CUM	Cultural Meadow
FOCM2-2	Dry-Fresh White Cedar Coniferous Forest Type
FODM3-1	Dry-Fresh Poplar Deciduous Forest Type
FODM7-2	Fresh-Moist Green Ash-Hardwood Lowland Deciduous Forest Type
FODR1	Dry-Fresh Sugar Maple Deciduous Forest Type
MASM1-2	Bulrush Mineral Shallow Marsh
THD	Deciduous Thicket Type
SWTM2-1	Red-osier Dogwood Mineral Deciduous Thicket Swamp Type

50m 0 100m

HORIZONTAL SCALE 1: 3,000

AZIMUTH ENVIRONMENTAL CONSULTING, INC.

Proposed Development

Craigleith Environmental Assessment
Blue Mountains, ON

DATE ISSUED:	April 2016	Figure No.
CREATED BY:	JLM	3
PROJECT NO.:	15-289	
REFERENCE:	Grey County Maps	

DAYSTAMP: M:\15 Projects\15-289 Craigleith Environmental Assessment\04.0 - Drafting\15-289.dwg

Plotted by: JMCCARTNEY on December 20, 2016 at 3:43pm
File: M:\15 Projects\15-289 Craigleith Environmental Assessment\04.0 - Drafting\15-289.dwg Layout: EIS3 Plotscale: 1

Common Name	Species Name	ESA	SARA	Key Habitats Used By Species[1]	Assessment
Bald Eagle	*Haliaeetus leucocephalus*	SC	NAR	Nests in a variety of habitats and forest types. Winter perching areas around winter feeding areas. *ESA Protection: N/A*	No suitable habitat available for the species. Species not identified during 2016 Breeding Bird Surveys.
Bank Swallow	*Riparia riparia*	THR	THR	Nests in burrows excavated in natural and human-made settings with vertical sand and silt faces. Colonies commonly found in sand or gravel pits, lakeshores, and along river banks. *ESA Protection: Species and general habitat protection*	Potential habitat on the property exists for this species. Species not observed during 2016 Breeding Bird Surveys.
Barn Swallow	*Hirundo rustica*	THR	THR	Ledges and walls of man-made structures such as buildings, barns, boathouses, cliffs or caves. *ESA Protection: Species and general habitat protection*	No suitable habitat available for the species. Species not observed during 2016 Breeding Bird Surveys.
Blanding's Turtle	*Enydoidea blandingii*	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 shallow water, organic substrates, and a high density of aquatic vegetation (COSEWIC, 2005). *ESA Protection: Species and regulated habitat protection*	Potential habitat on the property exists for this species. Species not observed during 2016 Basking Turtle Surveys.
Bobolink	*Dolichonyx oryzivorus*	THR	NAR	Large, open expansive grasslands with dense ground cover; hayfields, meadows or fallow fields; marshes; requires tracts of grassland >4ha (MNRF, 2000). *ESA Protection: Species and general habitat protection*	Potential habitat on the property exists for this species. Species not observed during 2016 Breeding Bird Surveys.
Branched Bartonia	*Bartonia paniculata*	THR	THR	Fen, sphagnum bogs. Shoreline (with hummock vegetation). *ESA Protection: Species and regulated habitat protection*	No suitable habitat available for the species.
Broad Beech Fern	*Phygopteris hexagonoptera*	SC	NAR	Rich soils in deciduous forests, such as Maple-Beech forests. *ESA Protection: N/A*	No suitable habitat available for the species.
Butternut	*Juglans cinerea*	END	END	Occurs on a variety of sites, including dry rocker soils (particularly those of limestone origin); grows best on well-drained fertile soils in shallow valleys and on gradual slopes; singly or in small groups mixed with other species. Intolerant of shade (Farrar 1995). *ESA Protection: Species and general habitat protection*	15 Butternut were identified on the property and adjacent lands.
Canada Warbler	*Wilsonia canadensis*	SC	THR	Wet, mixed deciduous-coniferous forests with a well developed shrub layer. Shrub marshes, red-maple stands, cedar stands, black spruce swamps, larch and riparian woodlands along rivers and lakes. (COSEWIC, 2008). *ESA Protection: N/A*	No suitable habitat available for the species. Species not observed during 2016 Breeding Bird Surveys.
Cerulean Warbler	*Dendroica cerulea*	THR	SC	Forests; generally those with large mature deciduous trees and an open understory. *ESA Protection: Species and general habitat protection*	Potential habitat on the property exists for this species. Species not observed during 2016 Breeding Bird Surveys.
Chimney Swift	*Chaetura pelagica*	THR	THR	Nests primarily in chimneys though some populations (i.e. in rural areas) may nest in cavity trees (Cadman 2007). Recent changes in chimney design and covering of openings to prevent wildlife access may be a significant factor in recent declines in numbers (Adams and Lindsey 2010). *ESA Protection: Species and general habitat protection*	No suitable habitat available for the species. Species not observed during 2016 Breeding Bird Surveys.
Common Nighthawk	*Chordeiles minor*	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*	Potential habitat on the property exists for this species. Species not observed during 2016 Nocturnal Bird Surveys.

Common Name	Species Name	ESA	SARA	Key Habitats Used By Species[1]	Assessment
Eastern Foxsnake	*Elaphe gloydii*	THR	END	Georgian Bay islands and shoreline with structure. Marsh, swamp, fen (bog). Rock-barren. *ESA Protection: Species and regulated habitat protection*	No suitable habitat available for the species.
Eastern Hog-nosed Snake	*Heterodon platirhinos*	THR	THR	Open areas of sand or fine gravel. Rock-barren. *ESA Protection: Species and general habitat protection*	No suitable habitat available for the species.
Eastern Meadowlark	*Sturnella magna*	THR	NAR	Open, grassy meadows, farmland, pastures, hayfields or grasslands with elevated singing perches; cultivated land and weedy areas with trees. Old orchards with adjacent, open grassy areas >4 ha in size (MNRF, 2000). *ESA Protection: Species and general habitat protection*	Potential habitat on the property exists for this species. Species not observed during 2016 Breeding Bird Surveys.
Eastern Musk Turtle	*Sternotherus oderatus*	SC	THR	Marsh, swamp, fen (bog). Eastern Musk Turtles are found in ponds, lakes, marshes and rivers that are generally slow-moving have abundant emergent vegetation and muddy bottoms that they burrow into for winter hibernation (MNRF 2015). *ESA Protection: N/A*	Potential habitat on the property exists for this species. Species not observed during 2016 Basking Turtle Surveys.
Eastern Ribbonsnake	*Thamnophis sauritus*	SC	SC	Marsh, swamp, fen (bog). Eastern Ribbonsnake prefer to live in close proximity to water, particularly marshes and areas with shallow water where opportunities to hunt frogs and fish are possible (MNRF, 2015). *ESA Protection: N/A*	Potential habitat on the property exists for this species. Species not observed during 2016 Basking Turtle Surveys.
Eastern Small-footed Bat	*Myotis lleibii*	END	END	Generally occurs in mountainous or rocky regions where it has been noted to roost in large boulders and beneath slabs of rock and stones. Hibernation is typically confined to caves and abandoned mine adits. (Best and Jennings, 1997 and MNRF, 2014). *ESA Protection: Species and general habitat protection*	No suitable habitat available for the species.
Eastern Wood-pewee	*Contopus virens*	SC	SC	Typically associated with deciduous and mixed forests with little understory vegetation. Often found in clearings or on edges of deciduous and mixed forests (MNRF, 2015). *ESA Protection: N/A*	Potential habitat on the property exists for this species. Species observed within the property during 2016 Breeding Bird Surveys.
Golden-winged Warbler	*Vermivora chrysoptera*	SC	THR	Areas of early successional scrub surrounded by mature forests including dry uplands, swamp forests, and marshes (COSEWIC, 2006). *ESA Protection: N/A*	Potential habitat on the property exists for this species. Species not observed during 2016 Breeding Bird Surveys.
Grasshopper Sparrow	*Ammodramus savannarum*	SC	SC	A variety of agricultural fields, from planted cereals to cattle pastures for breeding and feeding. Natural grasslands such as alvars are also used by the species (COSEWIC, 2013) *ESA Protection: N/A*	Potential habitat on the property exists for this species. Species not observed during 2016 Breeding Bird Surveys.
Henslow's Sparrow	*Ammodramus henslowii*	END	END	Nests in large, open, usually moist to wet, often flat fields with a high graminoid to forb/shrub ratio. Vegetation must be dense and over 30cm in height. *ESA Protection: Species and general habitat protection*	No suitable habitat available for the species. Species not observed during 2016 Breeding Bird Surveys.
Least Bittern	*Ixobrychus exilis*	THR	THR	Least Bittern prefer large, freshwater marshes with dense aquatic vegetation (e.g. Cattails) with interspersed clumps of woody vegetation and open water (COSEWIC, 2001). *ESA Protection: Species and general habitat protection*	No suitable habitat available for the species. Species not observed during 2016 Breeding Bird Surveys.
Little Brown Myotis	*Myotis lucifugus*	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 2013a). *ESA Protection: Species and general habitat protection*	Potential roosting habitat on the property exists for this species.
Monarch Butterfly	*Danaus plexippus*	SC	SC	Caterpillars - Milkweed in meadows and open areas. Adults - Meadows and diverse habitats with a variety of wildflowers (MNRF, 2015). *ESA Protection: N/A*	No suitable habitat available for the species.

Common Name	Species Name	ESA	SARA	Key Habitats Used By Species[1]	Assessment
Northern Long-eared Myotis	*Myotis septentrionalis*	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. *ESA Protection: Species and general habitat protection*	Potential roosting habitat on the property exists for this species.
Northern Map Turtle	*Grapetemys geographica*	SC	SC	Northern Map Turtles prefer rivers and lakeshores with available emergent rocks and fallen trees for basking. Deep, slow-moving sections of rivers are utilized for hibernation (COSEWIC, 2002a). *ESA Protection: N/A*	No suitable habitat available for the species. Species not observed during 2016 Basking Turtle Surveys.
Olive-sided Flycatcher	*Contopus cooperi*	SC	THR	Natural forest openings, forest edges near natural openings (such as wetlands) or open to semi-open forest stands. Occasionally human made openings (such as clear cuts). Presence of tall snags and residual live trees is essential. (COSEWIC, 2007 and MNRF, 2015). *ESA Protection: N/A*	No suitable habitat available for the species. Species not observed during 2016 Breeding Bird Surveys.
Red-Headed Woodpecker	*Melanerpes erythrocephalus*	SC	THR	Oak and Beech Forests, grasslands, forest edges, orchards, pastures, riparian forests, roadsides, urban parks, golf courses, cemeteries, beaver ponds and burns (COSEWIC, 2007). *ESA Protection: N/A*	No suitable habitat available for the species. Species not observed during 2016 Breeding Bird Surveys.
Snapping Turtle	*Chelydra serpentina*	SC	SC	Snapping Turtle utilize a wide variety of aquatic habitat, but prefer shallow waters with abundant leaf litter. Females travel overland during the nesting season in search of suitable nesting sites such as gravel shoulders of roadways, dams, and aggregate pits (MNRF, 2015). *ESA Protection: N/A*	Potential habitat on the property exists for this species. Species observed within the property during 2016 Basking Turtle Surveys.
Tri-colored Bat	*Perimyotis subflavus*	END	END	Maternity roosts for the Tri-colored Bat in natural landscapes can be found in dead clusters of leaves on trees. In more modified landscapes, many maternity colonies are located in barns or similar human-made structures (COSEWIC 2013a). *ESA Protection: Species and general habitat protection*	Potential roosting habitat on the property exists for this species.
Whip-Poor-Will	*Caprimulgus vociferus*	THR	THR	Whip-poor-will prefer areas with a mix of open and forested habitat, open woodlands, or openings in mature forests (MNRF, 2015). *ESA Protection: Species and general habitat protection*	Potential habitat on the property exists for this species. Species not observed during 2016 Nocturnal Bird Surveys.
Wood Thrush	*Hylocichla mustelina*	SC	THR	Typically associated with moist mature deciduous and mixed forests with a well developed understory. *ESA Protection: N/A*	Potential habitat on the property exists for this species. Species not observed during 2016 Breeding Bird Surveys.

Bold Text indicates habitat for the species identified within the property limits.

NAR (Not at Risk)

1. Habitat as outlined within the Species at Risk in MNRF's Parry Sound District Excel file version 3, updated as of May 10, 2012, MNRF'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 (November 2, 2015)

Adams, C.E., and K.J. Lindsey. 2010. Urban wildlife management: second edition. CRC Press, Taylor & Francis Group. New York, NY, USA.

Cadman, M.E., D.A. Sutherland, G.G. Beck, D. Lepage, and A.R. Couturier. 2007. The atlas of the breeding birds of Ontario, 2001-2005. Bird Studies Canada, Environment Canada, Ontario Field Ornithologists, Ontario Ministry of Natural Resources, Ontario Nature. Toronto, ON, CAN.

COSEWIC. 2001. COSEWIC assessment and update status report on the Least Bittern in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. 10 pp. + v.

COSEWIC. 2002b. COSEWIC assessment and update status report on the Northern Map Turtle in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. 34 pp. + vi.

COSEWIC. 2005. COSEWIC assessment and update status report on the Blanding's Turtle in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. 40 pp. + viii.

COSEWIC. 2013a. COSEWIC assessment and update status report on the Little Brown Myotis, Northern Myotis, Tri-colored Bat. Committee on the Status of Endangered Wildlife in Canada. Ottawa.

COSEWIC. 2013b. COSEWIC assessment and update status report on the Bank Swallow. Committee on the Status of Endangered Wildlife in Canada. Ottawa. 48 pp. + ix.

Farrar, J.L. 1995. Trees in Canada. Fitzhenry and Whiteside Limited Markham, ON, CAN

Common Name	Species Name	ESA	SARA	Key Habitats Used By Species[1]	Assessment

Ministry of Natural Resources and Forestry – Fish and Wildlife Branch (MNRF). 2000. Significant Wildlife Habitat Technical Guide.
Ministry of Natural Resources and Forestry (MNRF). 2014. Eastern Small-footed Bat. Queen's Printer for Ontario. https://www.ontario.ca/environment-and-energy/eastern-small-footed-bat
Ministry of Natural Resources and Forestry (MNRF). 2015 http://www.ontario.ca/environment-and-energy/species-risk

Table 2. Vascular plant species list

AEC 15-289 Parkbridge - Craigleith EIS

			Vegetation Community[1]								Conservation Rank[2]		
FAMILY	**SCIENTIFIC NAME**	**COMMON NAME**	**FOCM2-2**	**THD**	**MEGM3**	**FODM3-1**	**FODM7-2**	**POND**	**FODR-1**	**SWTM2-1**	**S RANK**	**G RANK**	**SARO STATUS**
Aceraceae	Acer negundo	Manitoba Maple				X					G5	S5	
Aceraceae	Acer saccharum	Sugar Maple		X		X			X		G5	S5	
Alismataceae	Alisma plantago-aquatica	Common Water Plantain						X			G5	S5	
Anacardiaceae	Rhus typhina	Staghorn Sumac		X		X					G5	S5	
Anacardiaceae	Toxicodendron rydbergii	Rydberg's Poison Ivy			X	X	X				G5	S5	
Apiaceae	Cicuta maculata var. maculata	Spotted Water-hemlock					X			X	G5T5	S5	
Apiaceae	Daucus carota	Wild Carrot		X	X	X					GNR	SE5	
Apocynaceae	Vinca minor	Periwinkle		X							GNR	SE5	
Aristolochiaceae	Asarum canadense	Canada Wild-ginger							X		G5	S5	
Asclepiadaceae	Asclepias incarnata	Swamp Milkweed							X		G5	S5	
Asclepiadaceae	Asclepias syriaca	Common Milkweed		X	X						G5	S5	
Asteraceae	Achillea millefolium	Common Yarrow		X							G5	SE	
Asteraceae	Ambrosia psilostachya	Perennial Ragweed			X						G5	SE4	
Asteraceae	Antennaria neglecta	Field Pussytoes		X							G5	S5	
Asteraceae	Arctium minus	Common Burdock		X		X					GNR	SE5	
Asteraceae	Cirsium discolor	Field Thistle		X	X						G5	S3	
Asteraceae	Cirsium vulgare	Bull Thistle		X							GNR	SE5	
Asteraceae	Eutrochium maculatum var. maculatum	Spotted Joe Pye Weed	X								G5T5	S5	
Asteraceae	Inula helenium	Elecampane		X							GNR	SE5	
Asteraceae	Lactuca canadensis	Canada Lettuce		X		X					G5	S5	
Asteraceae	Tussilago farfara	Colt's-foot	X	X	X		X	X			GNR	SE5	
Asteraceae	Rudbeckia hirta var. hirta	Black-eyed Susan				X					G5T4T5	SU	
Asteraceae	Solidago caesia	Blue-stemmed Goldenrod					X				G5	S5	
Asteraceae	Solidago canadensis var. canadensis	Canada Goldenrod	X	X				X			G5T5	S5	
Asteraceae	Solidago flexicaulis	Zigzag Goldenrod				X	X		X		G5	S5	
Asteraceae	Solidago rugosa var. rugosa	Northern Rough-leaved Goldenrod	X								G5T5	S5	
Asteraceae	Symphyotrichum novae-angliae	New England Aster	X	X		X					G5	S5	
Asteraceae	Taraxacum officinale	Common Dandelion		X	X	X	X		X		G5	SE5	
Asteraceae	Tragopogon dubius	Yellow Goat's-beard		X	X						GNR	SE5	
Asteraceae	Symphyotrichum ericoides var. ericoides	White Heath Aster			X						G5T5	S5	
Asteraceae	Euthamia graminifolia	Grass-leaved Goldenrod	X		X			X			G5	S5	
Asteraceae	Onopordum acanthium	Scotch Cotton-thistle			X						GNR	SE4	
Asteraceae	Solidago altissima ssp. altissima	Eastern Late Goldenrod		X	X						GNR	S5	
Asteraceae	Symphyotrichum lateriflorum	Starved Aster		X							G5	S5	
Asteraceae	Symphyotrichum ontarionis var.	Ontario Aster		X							G5TNR	S4	

Table 2. Vascular plant species list

AEC 15-289 Parkbridge - Craigleith EIS

			Vegetation Community[1]								Conservation Rank[2]		
FAMILY	**SCIENTIFIC NAME**	**COMMON NAME**	**FOCM2-2**	**THD**	**MEGM3**	**FODM3-1**	**FODM7-2**	**POND**	**FODR-1**	**SWTM2-1**	**S RANK**	**G RANK**	**SARO STATUS**
	ontarionis												
Asteraceae	Eupatorium perfoliatum	Common Boneset						X			G5	S5	
Balsaminaceae	Impatiens capensis	Spotted Jewelweed							X	X	G5	S5	
Berberidaceae	Berberis vulgaris	European Barberry						X			GNR	SE5	
Berberidaceae	Caulophyllum thalictroides	Blue Cohosh		X		X			X		G4G5	S5	
Betulaceae	Betula papyrifera	Paper Birch	X	X		X		X	X		G5	S5	
Betulaceae	Ostrya virginiana	Eastern Hop-hornbeam							X		G5	S5	
Boraginaceae	Echium vulgare	Common Viper's-bugloss		X							GNR	SE5	
Brassicaceae	Alliaria petiolata	Garlic Mustard		X		X	X	X	X		GNR	SE5	
Brassicaceae	Brassica rapa	Field Mustard			X						GNR	SE5	
Brassicaceae	Lepidium latifolium	Broad-leaved Peppergrass			X						GNR	SE1	
Caprifoliaceae	Lonicera canadensis	Canada Fly Honeysuckle				X					G5	S5	
Caprifoliaceae	Lonicera tatarica	Tartarian Honeysuckle				X				X	GNR	SE5	
Caprifoliaceae	Viburnum opulus ssp. opulus	Cranberry Viburnum					X				GNR	SE3?	
Caryophyllaceae	Cerastium arvense ssp. arvense	Field Chickweed		X	X						G5T5	SE2	
Caryophyllaceae	Saponaria officinalis	Bouncing-bet			X						GNR	SE5	
Caryophyllaceae	Silene vulgaris	Maiden's Tears		X	X						GNR	SE5	
Celastraceae	Celastrus scandens	Climbing Bittersweet							X		G5	S5	
Chenopodiaceae	Chenopodium album	White Goosefoot			X						G5	SE5	
Cornaceae	Cornus alternifolia	Alternate-leaved Dogwood							X		G5	S5	
Cornaceae	Cornus racemosa	Gray Dogwood	X				X				G5?	S5	
Cornaceae	Cornus rugosa	Round-leaved Dogwood	X	X		X			X		G5	S5	
Cornaceae	Cornus stolonifera	Red-osier Dogwood		X			X	X			G5	S5	
Cupressaceae	Juniperus communis	Ground Juniper				X					G5	S5	
Cupressaceae	Juniperus virginiana	Eastern Red Cedar			X						G5	S5	
Cupressaceae	Thuja occidentalis	Eastern White Cedar	X	X				X	X		G5	S5	
Cyperaceae	Carex albursina	White Bear Sedge							X		G5	S5	
Cyperaceae	Carex arctata	Black Sedge	X					X	X		G5	S5	
Cyperaceae	Carex aurea	Golden-fruited Sedge	X								G5	S5	
Cyperaceae	Carex bebbii	Bebb's Sedge				X	X			X	G5	S5	
Cyperaceae	Carex interior	Inland Sedge								X	G5	S5	
Cyperaceae	Carex peckii	Peck's Sedge							X		G5	S5	
Cyperaceae	Carex pensylvanica	Pennsylvania Sedge							X		G5	S5	
Cyperaceae	Carex stipata	Awl-fruited Sedge	X	X				X			G5	S5	
Cyperaceae	Carex swanii	Downy Green Sedge						X			G5	S4	
Cyperaceae	Carex vulpinoidea	Fox Sedge		X							G5	S5	
Cyperaceae	Schoenoplectus acutus	Hard-stemmed Bulrush	X					X			G5	S5	
Cyperaceae	Scirpus atrocinctus	Black-girdle Bulrush						X		X	G5	S5	

Table 2. Vascular plant species list

AEC 15-289 Parkbridge - Craigleith EIS

			Vegetation Community[1]								Conservation Rank[2]		
FAMILY	**SCIENTIFIC NAME**	**COMMON NAME**	**FOCM2-2**	**THD**	**MEGM3**	**FODM3-1**	**FODM7-2**	**POND**	**FODR-1**	**SWTM2-1**	**S RANK**	**G RANK**	**SARO STATUS**
Dryopteridaceae	Cystopteris bulbifera	Bulblet Fern							X		G5	S5	
Dryopteridaceae	Dryopteris carthusiana	Spinulose Wood Fern							X		G5	S5	
Dryopteridaceae	Dryopteris marginalis	Marginal Wood Fern							X		G5	S5	
Dryopteridaceae	Matteuccia struthiopteris	Ostrich Fern				X					G5	S5	
Elaeagnaceae	Shepherdia canadensis	Canada Buffalo-berry	X	X		X		X			G5	S5	
Equisetaceae	Equisetum arvense	Field Horsetail		X	X		X		X		G5	S5	
Equisetaceae	Equisetum hyemale	Common Scouring-rush					X				G5	S5	
Equisetaceae	Equisetum variegatum	Variegated Horsetail	X								G5	S5	
Fabaceae	Amphicarpaea bracteata	American Hog-peanut		X			X				G5	S5	
Fabaceae	Lathyrus japonicus	Beach Pea		X	X						G5	S4	
Fabaceae	Lotus corniculatus	Garden Bird's-foot Trefoil						X			GNR	SE5	
Fabaceae	Medicago sativa	Alfalfa		X	X						GNR	SE5	
Fabaceae	Trifolium aureum	Yellow Clover		X							GNR	SE5	
Fabaceae	Trifolium pratense	Red Clover	X		X						GNR	SE5	
Fabaceae	Trifolium repens	White Clover	X	X	X			X			GNR	SE5	
Fabaceae	Vicia cracca	Tufted Vetch	X	X	X	X					GNR	SE5	
Fabaceae	Robinia pseudoacacia	Black Locust			X						G5	SE5	
Fagaceae	Fagus grandifolia	American Beech				X			X		G5	S4	
Fagaceae	Quercus rubra	Northern Red Oak				X			X		G5	S5	
Geraniaceae	Geranium robertianum	Herb-Robert							X		G5	S5	
Grossulariaceae	Ribes americanum	Wild Black Currant		X		X	X				G5	S5	
Grossulariaceae	Ribes cynosbati	Prickly Gooseberry				X					G5	S5	
Hydrophyllaceae	Hydrophyllum virginianum	Virginia Waterleaf		X	X	X	X		X		G5	S5	
Juglandaceae	Juglans cinerea	Butternut							X		G4	S3?	END
Juncaceae	Juncus effusus	Soft Rush						X			G5	S5	
Juncaceae	Juncus tenuis	Path Rush	X	X				X			G5	S5	
Lamiaceae	Ajuga reptans	Creeping Bugleweed						X			GNR	SE2	
Lamiaceae	Clinopodium vulgare	Field Basil	X	X	X	X					G5	S5	
Lamiaceae	Glechoma hederacea	Ground Ivy					X				GNR	SE5	
Lamiaceae	Nepeta cataria	Catnip		X			X				GNR	SE5	
Lamiaceae	Prunella vulgaris ssp. vulgaris	Self-heal		X		X	X				G5TU	SE3	
Lentibulariaceae	Utricularia cornuta	Horned Bladderwort						X			G5	S5	
Liliaceae	Asparagus officinalis	Garden Asparagus		X							G5?	SE5	
Liliaceae	Erythronium americanum	Yellow Trout-lily		X		X		X	X		G5	S5	
Liliaceae	Hemerocallis fulva	Orange Daylily		X							GNA	SE5	
Liliaceae	Maianthemum canadense	Wild Lily-of-the-valley							X		G5	S5	
Liliaceae	Maianthemum racemosum	False Solomon's-seal							X		G5	S5	
Liliaceae	Maianthemum stellatum	Star-flowered False Solomon's-				X	X				G5	S5	

Table 2. Vascular plant species list

AEC 15-289 Parkbridge - Craigleith EIS

			Vegetation Community[1]								Conservation Rank[2]		
FAMILY	**SCIENTIFIC NAME**	**COMMON NAME**	**FOCM2-2**	**THD**	**MEGM3**	**FODM3-1**	**FODM7-2**	**POND**	**FODR-1**	**SWTM2-1**	**S RANK**	**G RANK**	**SARO STATUS**
		seal											
Liliaceae	Polygonatum pubescens	Hairy Solomon's Seal				X	X		X		G5	S5	
Liliaceae	Scilla siberica	Siberian Squill		X							GNR	SE2	
Liliaceae	Trillium grandiflorum	White Trillium							X		G5	S5	
Lythraceae	Lythrum salicaria	Purple Loosestrife						X			G5	SE5	
Oleaceae	Forsythia suspensa	Weeping Forsythia		X							GNR	SE1	
Oleaceae	Fraxinus pennsylvanica	Green Ash		X	X	X	X	X	X		G5	S4	
Onagraceae	Circaea alpina	Small Enchanter's Nightshade				X	X		X	X	G5	S5	
Orchidaceae	Epipactis helleborine	Eastern Helleborine							X	X	GNR	SE5	
Poaceae	Agrostis gigantea	Redtop								X	G4G5	SE5	
Poaceae	Agrostis scabra	Rough Bentgrass	X					X			G5	S5	
Poaceae	Avena fatua	Common Wild Oats		X							GNR	SE3	
Poaceae	Bromus inermis	Awnless Brome		X	X	X					G5TNR	SE5	
Poaceae	Dactylis glomerata	Orchard Grass		X	X	X					GNR	SE5	
Poaceae	Elymus hystrix	Bottlebrush Grass		X							G5	S5	
Poaceae	Elymus repens	Creeping Wildrye			X						GNR	SE5	
Poaceae	Festuca rubra ssp. commutata	Red Fescue		X	X						G5TNR	SE1	
Poaceae	Glyceria x ottawensis	(Glyceria canadensis var. canadensis X Glyceria striata)					X				GNA	SNA	
Poaceae	Phalaris arundinacea	Reed Canary Grass						X			G5	S5	
Poaceae	Phleum pratense	Common Timothy		X	X	X		X			GNR	SE5	
Poaceae	Poa compressa	Canada Bluegrass				X		X			GNR	SE5	
Poaceae	Poa pratensis ssp. pratensis	Kentucky Bluegrass	X	X		X	X				G5T5	S5	
Poaceae	Glyceria grandis	Tall Mannagrass			X						G5	S4S5	
Primulaceae	Lysimachia ciliata	Fringed Loosestrife					X	X		X	G5	S5	
Ranunculaceae	Actaea pachypoda	White Baneberry				X			X		G5	S5	
Ranunculaceae	Actaea rubra	Red Baneberry							X		G5	S5	
Ranunculaceae	Anemone acutiloba	Sharp-lobed Hepatica							X		G5	S5	
Ranunculaceae	Ranunculus acris	Tall Buttercup		X		X					G5	SE5	
Rhamnaceae	Rhamnus cathartica	Common Buckthorn			X	X	X	X			GNR	SE5	
Rosaceae	Agrimonia gryposepala	Hooked Agrimony		X		X					G5	S5	
Rosaceae	Crataegus monogyna	English Hawthorn		X			X				G5	SE4	
Rosaceae	Fragaria virginiana	Wild Strawberry				X		X			G5	S5	
Rosaceae	Potentilla anserina ssp. anserina	Common Silverweed						X			GNR	S5	
Rosaceae	Prunus virginiana	Choke Cherry		X		X	X	X	X		G5	S5	
Rosaceae	Rosa blanda	Smooth Rose					X			X	G5	S5	
Rosaceae	Rubus idaeus ssp. strigosus	Wild Red Raspberry		X							G5T5	S5	
Rosaceae	Sorbus americana	American Mountain-ash				X					G5	S5	

Table 2. Vascular plant species list

AEC 15-289 Parkbridge - Craigleith EIS

			Vegetation Community[1]								Conservation Rank[2]		
FAMILY	**SCIENTIFIC NAME**	**COMMON NAME**	**FOCM2-2**	**THD**	**MEGM3**	**FODM3-1**	**FODM7-2**	**POND**	**FODR-1**	**SWTM2-1**	**S RANK**	**G RANK**	**SARO STATUS**
Rosaceae	Crataegus macrosperma	Big-fruit Hawthorn		X							G5	S5	
Rosaceae	Crataegus chrysocarpa var. chrysocarpa	Fireberry Hawthorn		X							G5TNR	S5	
Rubiaceae	Galium palustre	Marsh Bedstraw						X		X	G5	S5	
Salicaceae	Populus balsamifera	Balsam Poplar	X	X		X		X	X		G5	S5	
Salicaceae	Populus grandidentata	Large-tooth Aspen				X					G5	S5	
Salicaceae	Populus nigra	Black Poplar						X			G5	SE3	
Salicaceae	Populus tremuloides	Trembling Aspen				X					G5	S5	
Salicaceae	Salix alba	White Willow				X		X			G5	SE4	
Salicaceae	Salix amygdaloides	Peach-leaved Willow						X			G5	S5	
Salicaceae	Salix discolor	Pussy Willow						X			G5	S5	
Salicaceae	Salix eriocephala	Heart-leaved Willow						X			G5	S5	
Salicaceae	Salix interior	Sandbar Willow	X					X			GNR	S5	
Salicaceae	Salix purpurea	Basket Willow	X					X			G5	SE4	
Scrophulariaceae	Verbascum thapsus	Common Mullein			X						GNR	SE5	
Solanaceae	Solanum dulcamara	Climbing Nightshade		X		X					GNR	SE5	
Tiliaceae	Tilia americana	American Basswood		X			X		X		G5	S5	
Typhaceae	Typha angustifolia	Narrow-leaved Cattail						X			G5	SE5	
Ulmaceae	Ulmus americana	American Elm		X			X				G5?	S5	
Verbenaceae	Verbena x rydbergii	(Verbena hastata X Verbena stricta)	X	X							GNA	SNA	
Violaceae	Viola blanda	Sweet White Violet		X							G4G5	S5	
Violaceae	Viola pubescens var. pubescens	Downy Yellow Violet		X					X		G5T5	S5	
Violaceae	Viola sororia	Woolly Blue Violet		X		X					G5	S5	
Vitaceae	Parthenocissus quinquefolia	Virginia Creeper				X	X				G5	S4?	
Vitaceae	Vitis riparia	Riverbank Grape	X	X	X	X	X	X			G5	S5	

[1]See Figure 1 for vegetation community location and Section X.X for description
[2]Conservation Rank Information from Ministry of Natural Resources & Forestry, Natural Heritage Information Centre

Survey Dates & Observers: May 10, 2016 - S. Casutt & K. Zgurzynski; July 18, 2016 - S. Casutt & D. Stuart; September 16, 2016 - S. Casutt & M. Fuller

Table 3. Bird Species List

AEC 15-289 Parkbridge - Craigleith EIS

Family	Scientific Name	English Common Name	Point Count Stations A, B, C											Incidental *	Breeding Evidence [C]	Area Sensitive? **	Conservation Rank [D]		
			1	2	3	4	5	6	7	8	9	10	11				G-rank [E]	S-rank [F]	SARO Status [G]
Anatidae	*Anas platyrhynchos*	Mallard												X	Observed		G5	S5	
Ardeidae	*Botaurus lentiginosus*	American Bittern												X	Observed	Yes	G4	S4B	
Bombycillidae	*Bombycilla cedrorum*	Cedar Waxwing		H			H[A, C]	H[B]	H[A, C]	H[C]		H[A]			Possible		G5	S5B	
Cardinalidae	*Cardinalis cardinalis*	Northern Cardinal	T				S[A]				S[A]			X	Probable		G5	S5	
Cardinalidae	*Passerina cyanea*	Indigo Bunting	S[B]	S[B]		T	T		T			S[B]			Probable		G5	S4B	
Cathartidae	*Cathartes aura*	Turkey Vulture												X	Observed		G5	S5B	
Charadriidae	*Charadrius vociferus*	Killdeer												X	Observed		G5	S5B, S5N	
Columbidae	*Zenaida macroura*	Mourning Dove	S[C]	S[A]				S[C]		S[A]					Possible		G5	S5	
Corvidae	*Corvus brachyrhynchos*	American Crow	H[A,] FO[C]		H[C]				H[C]	FO[C]	H[C]	H[A], FO[C]	FO[B]	X	Possible		G5	S5B	
Corvidae	*Cyanocitta cristata*	Blue Jay	H[C]					H[B]		H[A]				X	Possible		G5	S5	
Emberizidae	*Melospiza melodia*	Song Sparrow	T	T	T	T	T	S	S	S			T	X	Probable		G5	S5B	
Emberizidae	*Spizella passerina*	Chipping Sparrow								S[B]					Possible		G5	S5B	
Emberizidae	*Spizella pusilla*	Field Sparrow	S[C]		S[C]								S[B]		Possible		G5	S4B	
Emberizidae	*Melospiza georgiana*	Swamp Sparrow					S[A]							X	Possible		G5	S5B	
Fringillidae	*Carduelis tristis*	American Goldfinch	S[C]	H[A], S[B]		H[A], T	FO[B, C]	P[C]	H[A], S[B]	H[A], T	S[C]	S[A]	S[C]	X	Probable		G5	S5B	
Hirundinidae	*Tachycineta bicolor*	Tree Swallow							FO[C]						Observed		G5	S4B	
Laridae	*Larus delawarensis*	Ring-billed Gull	FO[A]		FO[B]										Observed		G5	S5B,S4N	
Laridae	*Larus argentatus*	Herring Gull	FO[C]												Observed		G5	S5B,S5N	
Cardinalidae	Pheucticus ludovicianus	Rose-breasted Grosbeak		H[A]							S[B]		S[B]	X	Possible		G5	S4B	
Icteridae	*Agelaius phoeniceus*	Red-winged Blackbird	N[A, B]	S[B]		H[A, C], P[B]	H[A, C]	H[A, B]	T	S[A]			S[A]	X	Probable		G5	S4	
Icteridae	*Icterus galbula*	Baltimore Oriole		T		T	T			S[A]	S[A], P[B]		S[A]	X	Probable		G5	S4B	
Icteridae	*Molothrus ater*	Brown-headed Cowbird		P[A]						S[C]					Probable		G5	S4B	
Icteridae	*Quiscalus quiscula*	Common Grackle		FO[C]		H[B]								X	Possible		G5	S5B	
Mimidae	*Dumetella carolinensis*	Gray Catbird		S[A]	S[B]		S[A]	S[C]		S[B], H[C]				X	Possible		G5	S4B	
Mimidae	*Toxostoma rufum*	Brown Thrasher												X	Observed		G5	S4B	
Paridae	*Poecile atricapillus*	Black-capped Chickadee	H[B]	S[A]	S[B]	S[B]				H[A], S[C]	T	CF[C]		X	Probable		G5	S5	
Parulidae	*Dendroica coronata*	Yellow-rumped Warbler						S[A]						X	Possible		G5	S5B	

Table 3. Bird Species List

AEC 15-289 Parkbridge - Craigleith EIS

Family	Scientific Name	English Common Name	Point Count Stations A, B, C											Incidental *	Breeding Evidence [C]	Area Sensitive? **	Conservation Rank [D]		
			1	2	3	4	5	6	7	8	9	10	11				G-rank [E]	S-rank [F]	SARO Status [G]
Parulidae	*Dendroica petechia*	Yellow Warbler		S	T	T	T	S	T	S[B]			S[A]	X	Probable		G5	S5B	
Parulidae	*Dendroica pinus*	Pine Warbler												X	Observed	Yes	G5	S5B	
Parulidae	*Dendroica virens*	Black-throated Green Warbler												X	Observed	Yes	G5	S5B	
Parulidae	*Geothlypis trichas*	Common Yellowthroat		S[C]			S[C]	CF[C]	S[A]	S[A]				X	Confirmed		G5	S5B	
Parulidae	*Mniotilta varia*	Black-and-white Warbler										S[B]			Possible	Yes	G5	S5B	
Parulidae	*Setophaga ruticilla*	American Redstart		T	T	T	T	T	T	T	T	T	T	X	Probable	Yes	G5	S5B	
Parulidae	*Vermivora pinus*	Blue-winged Warbler		T						S[A]					Probable		G5	S4B	
Parulidae	*Vermivora ruficapilla*	Nashville Warbler					S[A]					S[A]			Possible		G5	S5B	
Phasianidae	*Meleagris gallopavo*	Wild Turkey												X	Observed		G5	S5	
Picidae	*Colaptes auratus*	Northern Flicker	S[C]							H[A]				X	Possible		G5	S4B	
Picidae	*Dryocopus pileatus*	Pileated Woodpecker									SC	H[C]	S[C]	X	Possible	Yes	G5	S5	
Picidae	*Picoides pubescens*	Downy Woodpecker		H[C]			H[B]		H[A]	H[C]	H[A], S[B]				Possible		G5	S5	
Sturnidae	*Sturnus vulgaris*	European Starling	H[A]					H[A]		H[A]					Possible		G5	SNA	
Troglodytidae	*Troglodytes aedon*	House Wren	S[A]	T	H[C]	T	S[A]	T	T	T	T	T	S[B]	X	Probable		G5	S5B	
Turdidae	*Turdus migratorius*	American Robin		H[A], S[C]	T[A, C], H[B]	H[B]	S[A]	AE[B]	S[A]	H[C]	H[A]	S[A]	S[A]	X	Probable		G5	S5B	
Tyrannidae	*Contopus virens*	Eastern Wood-pewee			S[C]	S[A]					T	T			Probable		G5	S4B	SC
Tyrannidae	*Sayornis phoebe*	Eastern Phoebe												X	Observed		G5	S5B	
Tyrannidae	*Empidonax minimus*	Least Flycatcher												X	Observed		G5	S4B	
Tyrannidae	*Myiarchus crinitus*	Great Crested Flycatcher			H[C]	S[A, B]									Possible		G5	S4B	
Tyrannidae	*Tyrannus tyrannus*	Eastern Kingbird			H[B]									X	Possible		G5	S4B	
Vireonidae	*Vireo gilvus*	Warbling Vireo						T	T	T					Probable		G5	S5B	
Vireonidae	*Vireo olivaceus*	Red-eyed Vireo	T	T	T	H[A], S[C]	T		S[A]		T	T	T		Probable		G5	S5B	

* Incidental observation during amphibian and turtle surveys May & June 2016, and Vegetation Survey September 2016

** According to Appendix C of the Significant Wildlife Habitat Technical Guide (MNRF, 2000)

Surveys Conditions:

[A]June 10, 2016; Start Time 0552hr/ End Time 0910hr; Start Temperature +9°C/ End Temperature +10°C; Wind B0; Cloud Cover 0%; Precipitation Null; Observer S.Casutt

[B]June 17, 2016; Start Time 0545hr/ End Time 0745hr; Start Temperature +15°C/ End Temperature +17°C; Wind B0; Cloud Cover 0%; Precipitation Null; Observer S.Casutt

[C] June 29, 2016; Start Time 0555hr/ End Time 0815hr; Start Temperature +17°C/ End Temperature +20°C; Wind B1; Cloud Cover 90%; Precipitation Null; Observer S.Casutt

Table 3. Bird Species List

AEC 15-289 Parkbridge - Craigleith EIS

			Point Count Stations A, B, C													Conservation Rank [D]		
Family	**Scientific Name**	**English Common Name**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**Incidental ***	**Breeding Evidence [C]**	**Area Sensitive? ****	**G-rank [E]**	**S-rank [F]**	**SARO Status [G]**

[C]OBBA Breeding Evidence Codes:

H - Species observed in its breeding season in suitable nesting habitat

C - Call heard (male or female), in suitable nesting habitat in nesting season.

S - Singing male present or breeding calls heard, in suitable nesting habitat in nesting season.

N - Nest Building or excavation of nest hole

P - Pair observed in suitable nesting habitat in nesting season

CF - Adult carrying food for young

VO - Vocalization

T - Permanent territory Presumed through registration of territorial behaviour

FO - Fly Over

FY - Recently fledged or downy young (including incapable of sustaining flight)

AE - Adult leaving or entering nest site in circumstances indicated occupied nest

[D] Conservation Rank - from OMNRF, NHIC, SAR and SARO Lists 2014

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

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

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

[H] Observed off property

Table 4. Amphibian Species Observed **AEC 15-289 Parkbridge - Craigleith EIS**

	Common Name	Spring Peeper	Wood Frog	American Toad	Gray Tree Frog	Northern Green Frog	Western Chorus Frog
Sampling Date	Scientific Name	*Pseudacris crucifer*	*Lithobates sylvaticus*	*Anaxyrus americanus*	*Hyla versicolor*	*Lithobates clamitans*	*Pseudacris triseriata*
04-20-2016[3]	On-site (Stn1)[1]	3	3				2(10-20)
	On-site (Stn2)	1(1)					
	On-site (Stn3)						
05-19-2016[4]	On-site (Stn1)	3			3	1(2-5)	
	On-site (Stn2)						
	On-site (Stn3)						
06-19-2016[5]	On-site (Stn1)				2(10)	2(15)	
	On-site (Stn2)						
	On-site (Stn3)						
Conservation Rank	S Rank	S5	S5	S5	S5	S5	S3[2]
	SARO Status						
	COSEWIC Status						THR[2]

[1]See Figure 2 for location

[2]Candian Shield/Great Lakes St. Lawrence Population

Observation Conditions:

[3] Date: April 20, 2016; Survey Time: 20:32 - 20:54; Air Temperature: 12^0C; Wind: B0/na; Cloud Cover: 15%; Precipitation: nil; Observed S.Casutt & M. Fuller

[4] Date: May 19, 2016; Survey Time: 22:52 - 23:50; Air Temperature 12^0C; Wind B0/na; Cloud Cover 0%; Precipitation nil; Observer S.Casutt

[5] Date: June 19, 2016; Survey Time: 23:06 - 23:45; Air Temperature: 20^0C; Wind: B0/na; Cloud Cover: 90%; Precipitation: nil; Observer S.Casutt

Table 5. Turtle Species Observed **AEC 15-289 Parkbridge - Craigleith EIS**

Sampling Date	Search Duration	Turtle Species Observed (number of individuals)	Location of Turtle Species Observed	Observation Notes
04-23-2016[1]	1h25min	N/A	N/A	Spring peeper calling in pond
05-02-2016[2]	1hr	N/A	N/A	Rain and overcast day previous
05-10-2016[3]	1hr45min	Snapping Turtle (1)	0554108 4929868	Turtle in shallow water close to shoreline, foraging.
05-17-2016[4]	1hr50min	N/A	N/A	American Bittern observed along shoreline
05-24-2016[5]	1hr40min	N/A	N/A	Pond conditions drying along shallow areas
06-01-2016[6]	1hr40min	N/A	N/A	Eastern Wood-pewee observed calling from pond

Location: Pond in north-east quadrant UTM 0554073 4929891

Observation Conditions:

[1] Date: April 23, 2016; Time: 12:03 - 13:28; Air Temp: 6^0C; Wind: B1/NW; Cloud Cover: 0%; Precipitation: nil; Obs. S.Casutt

[2] Date: May 02, 2016; Time: 15:30 - 16:30; Air Temp 12^0C; Wind B1/NW; Cloud Cover 0%; Precipitation nil; Obs. S.Casutt & B. Baker

[3] Date: May 10, 2016; Time: 13:06 - 14:50; Air Temp: 18^0C; Wind: 1/NE; Cloud Cover: 0%; Precipitation: nil; Obs. S.Casutt

[4] Date: May 17, 2016; Time: 11:10 - 13:00; Air Temp: 12°C; Wind: B1/NW; Cloud Cover: 0%; Precipitation: nil, Obs. S.Casutt

[5] Date: May 24, 2016; Time: 14:10 - 15:50; Air Temp: 27°C; Wind: B0/na; Cloud Cover: 0%; Precipitation: nil; Obs. S.Casutt

[6] Date: June 1, 2016; Time: 11:40 - 13:20; Air Temp: 21°C; Wind: B1/SE; Cloud Cover: 0%; Precipitation: nil; Obs. S.Casutt

Significant Wildlife Habitat Criteria Schedule for Ecoregion 6E

Table 6.1 Seasonal Concentrations of Areas of Animals

Wildlife Habitat	Wildlife Species	Candidate SWH		Confirmed SWH	Assessment
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	
Waterfowl Stopover and Staging Areas (Terrestrial) **Rationale:** Habitat important to migrating waterfowl.	American Black Duck Wood Duck Green-winged Teal Blue-winged Teal Mallard Northern Pintail Northern Shoveler American Wigeon Gadwall	CUM1 CUT1 Plus evidence of annual spring flooding from melt water or run-off within these Ecosites.	Fields with sheet water during Spring (mid-March to May). • Fields flooding during springmelt and run-off provide important invertebrate foraging habitat for migrating waterfowl. • Agricultural fields with waste grains are commonly used by waterfowl, these are not considered SWH unless they have spring sheet water available. Information Sources • Anecdotal information from the landowner, adjacent landowners or local naturalist clubs may be good information in determining occurrence. • Reports and other information available from Conservation Authorities • Sites documented through waterfowl planning processes (eg. EHJV implementation plan) • Field Naturalist Clubs • Ducks Unlimited Canada • Natural Heritage Information Centre (NHIC) Waterfowl Concentration Area	Studies carried out and verified presence of an annual concentration of any listed species, evaluation methods to follow "Bird and Bird Habitats: Guidelines for Wind Power Projects" • 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.	Habitat in Study Area does not meet criteria related to wildlife species and annual spring flooding. No further evaluation undertaken.
Waterfowl Stopover and Staging Areas (Aquatic) **Rationale:** Important for local and migrant waterfowl populations during the spring or fall migration or both periods combined. Sites identified are usually only one of a few in the eco-district.	Canada Goose Cackling Goose Snow Goose American Black Duck Northern Pintail Northern Shoveler American Wigeon Gadwall Green-winged Teal Blue-winged Teal Hooded Merganser Common Merganser Lesser Scaup Greater Scaup Long-tailed Duck Surf Scoter White-winged Scoter Black Scoter Ring-necked duck Common Goldeneye Bufflehead Redhead Ruddy Duck Red-breasted Merganser Brant Canvasback Ruddy Duck	MAS1 MAS2 MAS3 SAS1 SAM1 SAF1 SWD1 SWD2 SWD3 SWD4 SWD5 SWD6 SWD7	• Ponds, marshes, lakes, bays, coastal inlets, and watercourses used during migration. Sewage treatment ponds and storm water ponds do not qualify as a SWH, however a reservoir managed as a large wetland or pond/lake does qualify. • These habitats have an abundant food supply (mostly aquatic invertebrates and vegetation in shallow water) Information Sources • Environment Canada. • Naturalist clubs often are aware of staging/stopover areas. • OMNRF Wetland Evaluations indicate presence of locally and regionally significant waterfowl staging. • Sites documented through waterfowl planning processes (eg. 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: • 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.	Habitat in Study Area does not meet key criteria related to listed species. No further evaluation undertaken.

Shorebird Migratory Stopover Area **<u>Rationale:</u>** High quality shorebird stopover habitat is extremely rare and typically has a long history of use.	Greater Yellowlegs Lesser Yellowlegs Marbled Godwit Hudsonian Godwit Black-bellied Plover American Golden-Plover Semipalmated Plover Solitary Sandpiper Spotted Sandpiper Semipalmated Sandpiper Pectoral Sandpiper White-rumped Sandpiper Baird's Sandpiper Least Sandpiper Purple Sandpiper Stilt Sandpiper Short-billed Dowitcher Red-necked Phalarope Whimbrel Ruddy Turnstone Sanderling Dunlin	BBO1 BBO2 BBS1 BBS2 BBT1 BBT2 SDO1 SDS2 SDT1 MAM1 MAM2 MAM3 MAM4 MAM5	• Shorelines of lakes, rivers and wetlands, including beach areas, bars and seasonally flooded, muddy and un-vegetated shoreline habitats. • Great Lakes coastal shorelines, including groynes and other forms of armour rock lakeshores, are extremely important for migratory shorebirds in May to mid-June and early July to October. • Sewage treatment ponds and storm water ponds do not qualify as a SWH. <u>Information Sources</u> • Western hemisphere shorebird reserve network. • Canadian Wildlife Service (CWS) Ontario Shorebird Survey. • Bird Studies Canada • Ontario Nature • Local birders and naturalist clubs • Natural Heritage Information Center (NHIC) Shorebird Migratory Concentration Area	Studies confirming: • Presence of 3 or more of listed species and > 1000 shorebird use days during spring or fall migration period. (shorebird use days are the accumulated number of shorebirds counted per day over the course of the fall or spring migration period) • Whimbrel stop briefly (<24hrs) during spring migration, any site with >100 Whimbrel used for 3 years or more is significant. • The area of significant shorebird habitat includes the mapped ELC shoreline ecosites plus a 100m radius area • Evaluation methods to follow "Bird and Bird Habitats: Guidelines for Wind Power Projects" • SWHMiSTIndex #8 provides development effects and mitigation measures.	Habitat in Study Area does not meet key criteria related to exposed shorelines and ELC codes. No further evaluation undertaken.
Raptor Wintering Area **<u>Rationale:</u>** Sites used by multiple species of individuals and used annually are most significant	Rough-legged Hawk Red-tailed Hawk Northern Harrier American Kestrel Snowy Owl **<u>Special Concern:</u>** Short-eared Owl Bald Eagle	<u>Hawks/Owls:</u> Combination of ELC Community Series; need to have present one Community Series from each land class; Forest: FOD, FOM, FOC. Upland: CUM; CUT; CUS; CUW. <u>Bald Eagle:</u> Forest community Series: FOD, FOM, FOC, SWD, SWM or SWC on shoreline areas adjacent to large rivers or adjacent to lakes with open water (hunting area).	• The habitat provides a combination of fields and woodlands that provide roosting, foraging and resting habitats for wintering raptors. • Raptor wintering sites (hawk/owl) need to be > 20 ha with a combination of forest and upland. • Least disturbed sites, idle/fallow or lightly grazed field/meadow (>15ha) with adjacent woodlands • Field area of the habitat is to be wind swept with limited snow depth or accumulation. • Eagle sites have open water, large trees and snags available for roosting <u>Information Sources:</u> • OMNRF Ecologist or Biologist Field Naturalist Clubs • Natural Heritage Information Center (NHIC) Raptor Winter Concentration Area • Data from Bird Studies Canada • Results of Christmas Bird Counts Reports and other information available from Conservation Authorities.	Studies confirm the use of these habitats by: • One or more Short-eared Owls or; One or more Bald Eagles or; At least 10 individuals and two of the listed hawk/owl species. • To be significant a site must be used regularly (3 in 5 years) for a minimum of 20 days by the above number of birds. • The habitat area for an Eagle winter site is the shoreline forest ecosites directly adjacent to the prime hunting area • Evaluation methods to follow "Bird and Bird Habitats: Guidelines for Wind Power Projects" • SWHMiST Index #10 and #11 provides development effects and mitigation measures.	Meadow and forest communities may provide suitable habitat for Raptor species. Studies were not completed to determine if the Study Area provides habitat for the listed wintering raptor species. See Sections 5.2.4 & 7.2.4 for further assessment.

Bat Hibernacula **<u>Rationale;</u>** Bat hibernacula are rare habitats in all Ontario landscapes.	Big Brown Bat Tri-coloured Bat	Bat Hibernacula may be found in these ecosites: CCR1 CCR2 CCA1 CCA2 (Note: buildings are not considered to be SWH)	• Hibernacula may be found in caves, mine shafts, underground foundations and Karsts. • Active mine sites should not be considered as SWH • The locations of bat hibernacula are relatively poorly known. <u>Information Sources</u> • OMNRF for possible locations and contact for local experts • Natural Heritage Information Center (NHIC) Bat Hibernaculum Ministry of Northern • Development and Mines for location of mine shafts. • Clubs that explore caves (eg. Sierra Club) • University Biology Departments with bat experts.	• All sites with confirmed hibernating bats are SWH. • The habitat area includes a 200m radius around the entrance of the hibernaculum, for most development types and 1000m for wind farms • Studies are to be conducted during the peak swarming period (Aug. – Sept.). Surveys should be conducted following methods outlined in the "Bats and Bat Habitats: Guidelines for Wind Power Projects. • SWHMiST Index #1 provides development effects and mitigation measures.	Habitat in Study Area does not meet key criteria related to ELC codes. No further evaluation undertaken.
Bat Maternity Colonies **<u>Rationale:</u>** Known locations of forested bat maternity colonies are extremely rare in all Ontario landscapes.	Big Brown Bat Silver-haired Bat	Maternity colonies considered SWH are found in forested Ecosites. All ELC Ecosites in ELC Community Series: FOD FOM SWD SWM	• Maternity colonies can be found in tree cavities, vegetation and often in buildlings (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 <u>Information Sources</u> • OMNRF for possible locations and contact for local experts • University Biology Departments with bat experts.	• Maternity Colonies with confirmed use by; • >10 Big Brown Bats© • >5 Adult Female Silver-haired Bats • The area of the habitat includes the entire woodland or a forest stand ELC Ecosite or an Ecoelement containing the maternity colonies. • Evaluation methods for maternity colonies should be conducted following methods outlined in the "Bats and Bat Habitats: Guidelines for Wind Power Projects". • SWHMiST Index #12 provides development effects and mitigation measures.	Forest communities in the Study Area are likely to provide roosting habitat for bat species. Field investigations identified FODM3-1 community as candidate for bat maternity colonies. See Sections 5.2.1 & 7.2.1 for further assessment.
Turtle Wintering Areas **<u>Rationale:</u>** Generally sites are the only known sites in the area. Sites with the highest number of individuals are most significant.	Midland Painted Turtle **<u>Special Concern:</u>** Northern Map Turtle Snapping Turtle	Snapping and Midland Painted Turtles; ELC Community Classes; SW, MA, OA and SA, ELC Community Series; FEO and BOO Northern Map Turtle; Open Water areas such as deeper rivers or streams and lakes with current can also be used as over-wintering habitat.	• For most turtles, wintering areas are in the same general area as their core habitat. Water 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. <u>Information Sources</u> • EIS studies carried out by Conservation Authorities. • Local field naturalists and experts, as well as university herpetologists may also know where to find some of these sites. • OMNRF Ecologist or Biologist • Field Naturalist clubs • Natural Heritage Information Center (NHIC)	• Presence of 5 over-wintering Midland Painted Turtles is significant. • One or more Northern Map Turtle or Snapping Turtle over-wintering within a wetland is significant. • The mapped ELC ecosite area with the over wintering turtles is the SWH. If the hibernation site is within a stream or river, the deep-water pool where the turtles are over wintering is the SWH. • Over wintering areas may be identified by searching for congregations (Basking Areas) of turtles on warm, sunny days during the fall (Sept. – Oct.) or spring (Mar. – May) • Congregation of turtles is more common where wintering areas are limited and therefore significant • SWHMiST Index #28 provides development effects and mitigation measures for turtle wintering habitat.	Pond feature in the Study Area was confirmed to host Snapping Turtle and would provide suitable depths for wintering conditions. See Sections 5.2.2 & 7.2.2 for further assessment.

Reptile Hibernaculum Rationale; Generally sites are the only known sites in the area. Sites with the highest number of individuals are most significant.	**<u>Snakes:</u>** Eastern Gartersnake Northern Watersnake Northern Red-bellied Snake Northern Brownsnake Smooth Green Snake Northern Ring-necked Snake **<u>Special Concern:</u>** Milksnake Eastern Ribbonsnake **<u>Lizard:</u>** **<u>Special Concern</u>** (Southern Shield population)**:** Five-lined Skink	For all snakes, habitat may be found in any ecosite other than very wet ones. Talus, Rock Barren, Crevice, Cave, and Alvar sites may be directly related to these habitats. Observations or congregations of snakes on sunny warm days in the spring or fall is a good indicator. For Five-lined Skink, ELC Community Series of FOD and FOM and Ecosites: FOC1 FOC3	• For snakes, hibernation takes place in sites located below frost lines in burrows, rock crevices and other natural or naturalized locations. The existence of features that go below frost line; such as rock piles or slopes, old stone fences, and abandoned crumbling foundations assist in identifying candidate SWH. • Areas of broken and fissured rock are particularly valuable since they provide access to subterranean sites below the frost line • Wetlands can also be important over-wintering habitat in conifer or shrub swamps and swales, poor fens, or depressions in bedrock terrain with sparse trees or shrubs with sphagnum moss or sedge hummock ground cover. • Five-lined skink prefer mixed forests with rock outcrop openings providing cover rock overlaying granite bedrock with fissures . <u>Information Sources</u> • In spring, local residents or landowners may have observed the emergence of snakes on their property (e.g. old dug wells). • Reports and other information available from Conservation Authorities. • Field Naturalists clubs • University herpetologists • Natural Heritage Information Center (NHIC) • OMNRF ecologist or biologist may be aware of locations of wintering skinks	Studies confirming: • Presence of snake hibernacula used by a minimum of five individuals of a snake sp. or; individuals of two or more snake spp. • Congregations of a minimum of five individuals of a snake sp. or; individuals of two or more snake spp. near potential hibernacula (eg. foundation or rocky slope) on sunny warm days in Spring (Apr/May) and Fall (Sept/Oct) • <u>Note:</u> If there are Special Concern Species present, then site is SWH • <u>Note:</u> Sites for hibernation possess specific habitat parameters (e.g. temperature, humidity, etc.) and consequently are used annually, often by many of the same individuals of a local population (i.e. strong hibernation site fidelity). Other critical life processes (e.g. mating) often take place in close proximity to hibernacula. The feature in which the hibernacula is located plus a 30 m radius area is the SWH • 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.	Forested areas, especially along the Nipissing Ridge, may provide suitable hibernaculum habitat. See Sections 5.2.5 and 7.2.5 for further assessment.
Colonially - Nesting Bird Breeding Habitat (Bank and Cliff) **<u>Rationale:</u>** Historical use and number of nests in a colony make this habitat significant. An identified colony can be very important to local populations. All swallow population are declining in Ontario.	Cliff Swallow Northern Rough-winged Swallow (this species is not colonial but can be found in Cliff Swallow colonies)	Eroding banks, sandy hills, borrow pits, steep slopes, and sand piles. Cliff faces, bridge abutments, silos, barns. Habitat found in the following ecosites: CUM1 CUT1 CUS1 BLO1 BLS1 BLT1 CLO1 CLS1 CLT1	• Any site or areas with exposed soil banks, undisturbed or naturally eroding that is not a licensed/permitted aggregate area. • Does not include man-made structures (bridges or buildings) or recently (2 years) disturbed soil areas, such as berms, embankments, soil or aggregate stockpiles. • Does not include a licensed/permitted Mineral Aggregate Operation. <u>Information Sources</u> • Reports and other information available from Conservation Authorities. • Ontario Breeding Bird Atlas • Bird Studies Canada; *NatureCounts* http://www.birdscanada.org/birdmon/ • Field Naturalist Clubs.	Studies confirming: • Presence of 1 or more nesting sites with 8or 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	Habitat in Study Area does not meet key criteria. Listed species not identified during field investigations. No further evaluation undertaken.

Colonially - Nesting Bird Breeding Habitat (Tree/Shrubs) Rationale: Large colonies are important to local bird population, typically sites are only known colony in area and are used annually.	Great Blue Heron Black-crowned Night-Heron Great Egret Green Heron	SWM2 SWM3 SWM5 SWM6 SWD1 SWD2 SWD3 SWD4 SWD5 SWD6 SWD7 FET1	• Nests in live or dead standing trees in wetlands, lakes, islands, and peninsulas. Shrubs and occasionally emergent vegetation may also be used. • Most nests in trees are 11 to 15 m from ground, near the top of the tree. <u>Information Sources</u> • Ontario Breeding Bird Atlas, colonial nest records. • Ontario Heronry Inventory 1991 available from Bird Studies Canada or NHIC (OMNRF). • Natural Heritage Information Center (NHIC) Mixed Wader Nesting Colony • Aerial photographs can help identify large heronries. • Reports and other information available from CAs. • MNRF District Offices. • Local naturalist clubs.	Studies confirming: • Presence of 5 or more active nests of Great Blue Heron or other listed species. • The habitat extends from the edge of the colony and a minimum 300m radius or extent of the Forest Ecosite containing the colony or any island <15.0ha with a colony is the SWH • Confirmation of active heronries are to be achieved through site visits conducted during the nesting season (April to August) or by evidence such as the presence of fresh guano, dead young and/or eggshells • SWHMiST Index #5 provides development effects and mitigation measures.	Habitat in Study Area does not meet key criteria related to ELC codes. No further evaluation undertaken.
Colonially - Nesting Bird Breeding Habitat (Ground) **<u>Rationale;</u>** Colonies are important to local bird population, typically sites are only known colony in area and are used annually.	Herring Gull Great Black-backed Gull Little Gull Ring-billed Gull Common Tern Caspian Tern Brewer's Blackbird	Any rocky island or peninsula (natural or artificial) within a lake or large river (two-lined on a 1;50,000 NTS map). Close proximity to watercourses in open fields or pastures with scattered trees or shrubs (Brewer's Blackbird) MAM1 – 6; MAS1 – 3; CUM CUT CUS	• Nesting colonies of gulls and terns are on islands or peninsulas associated with open water or in marshy areas. • Brewers Blackbird colonies are found loosely on the ground in low bushes in close proximity to streams and irrigation ditches within farmlands. <u>Information Sources</u> • Ontario Breeding Bird Atlas , rare/colonial species records. • Canadian Wildlife Service • Reports and other information available from CAs. • Natural Heritage Information Center (NHIC) Colonial Waterbird Nesting Area • MNRF District Offices. • Field Naturalist clubs.	Studies confirming: • Presence of > 25 active nests for Herring Gulls or Ring-billed Gulls, >5 active nests for Common Tern or >2 active nests for Caspian Tern. • Presence of 5 or more pairs for Brewer's Blackbird. • Any active nesting colony of one or more Little Gull, and Great Black-backed Gull is significant. • The edge of the colony and a minimum 150m radius area of habitat, or the extent of the ELC ecosites containing the colony or any island <3.0ha with a colony is the SWH • Studies would be done during May/June when actively nesting. Evaluation methods to follow "Bird and Bird Habitats: Guidelines for Wind Power Projects" • SWHMiSTcxlix Index #6 provides development effects and mitigation measures.	Habitat in Study Area does not meet key criteria. Listed species not identified during field investigations. No further evaluation undertaken.

Migratory Butterfly Stopover Areas **<u>Rationale:</u>** Butterfly stopover areas are extremely rare habitats and are biologically important for butterfly species that migrate south for the winter.	Painted Lady Red Admiral <u>Special Concern</u> Monarch	Combination of ELC Community Series; need to have present one Community Series from each land class: <u>Field:</u> CUM CUT CUS <u>Forest:</u> FOC FOD FOM CUP Anecdotally, a candidate site for butterfly stopover will have a history of butterflies being observed.	A butterfly stopover area will be a minimum of 10 ha in size with a combination of field and forest habitat present, and will be located within 5 km of Lake Ontario. • The habitat is typically a combination of field and forest, and provides the butterflies with a location to rest prior to their long migration south • The habitat should not be disturbed, fields/meadows with an abundance of preferred nectar plants and woodland edge providing shelter are requirements for this habitat. • Staging areas usually provide protection from the elements and are often spits of land or areas with the shortest distance to cross the Great Lakes <u>Information Sources</u> • OMNRF (NHIC) • Agriculture Canada in Ottawa may have list of butterfly experts. • Field Naturalist Clubs • Toronto Entomologists Association • Conservation Authorities	Studies confirm: • The presence of Monarch Use Days (MUD) during fall migration (Aug/Oct). MUD is based on the number of days a site is used by Monarchs, multiplied by the number of individuals using the site. Numbers of butterflies can range from 100-500/day, significant variation can occur between years and multiple years of sampling should occur. • Observational studies are to be completed and need to be done frequently during the migration period to estimate MUD. • MUD of >5000 **or** >3000 with the presence of Painted Ladies or Red Admiral's is to be considered significant. • SWHMiST Index #16 provides development effects and mitigation measures.	Property does not meet key requirement related to proximity to Lake Ontario.
Landbird Migratory Stopover Areas **<u>Rationale:</u>** Sites with a high diversity of species as well as high numbers are most significant.	All migratory songbirds. Canadian Wildlife Service Ontario website. All migratory songbirds. Canadian Wildlife Service Ontario website:	All Ecosites associated with these ELC Community Series; FOC FOM FOD SWC SWM SWD	Woodlots need to be >10 ha in size and within 5 km of Lake Ontario. • If multiple woodlands are located along the shoreline those Woodlands <2km from Lake Ontario are more significant • Sites have a variety of habitats; forest, grassland and wetland complexes. • The largest sites are more significant • Woodlots and forest fragments are important habitats to migrating birds, these features located along the shore and located within 5km of Lake Ontario are Candidate SWH . <u>Information Sources</u> • Bird Studies Canada • Ontario Nature • Local birders and naturalist club • Ontario Important Bird Areas (IBA) Program	Studies confirm: • Use of the habitat by >200 birds/day and with >35 spp with at least 10 bird spp. recorded on at least 5 different survey dates. This abundance and diversity of migrant bird species is considered above average and significant. • Studies should be completed during spring (Apr./May) and fall (Aug/Oct) migration using standardized assessment techniques. Evaluation methods to follow "Bird and Bird Habitats: Guidelines for Wind Power Projects" • SWHMiST Index #9 provides development effects	Property does not meet key requirement related to proximity to Lake Ontario.

Deer Yarding Areas **<u>Rationale:</u>** Winter habitat for deer is considered to be the main limiting factor for northern deer populations. In winter, deer congregate in "yards" to survive severe winter conditions. Deer yards typically have a long history of annual use by deer, yards typically represent 10-15% of an areas summer range.	White-tailed Deer	Note: OMNRF to determine this habitat. ELC Community Series providing a thermal cover component for a deer yard would include; FOM, FOC, SWM and SWC. Or these ELC Ecosites; CUP2 CUP3 FOD3 CUT	• Deer yarding areas or winter concentration areas (yards) are areas deer move to in response to the onset of winter snow and cold. This is a behavioural response and deer will establish traditional use areas. The yard is composed of two areas referred to as Stratum I and Stratum II. Stratum II covers the entire winter yard area and is usually a mixed or deciduous forest with plenty of browse available for food. Agricultural lands can also be included in this area. Deer move to these areas in early winter and generally, when snow depths reach 20 cm, most of the deer will have moved here. If the snow is light and fluffy, deer may continue to use this area until 30 cm snow depth. In mild winters, deer may remain in the Stratum II area the entire winter. • The Core of a deer yard (Stratum I) is located within the Stratum II area and is critical for deer survival in areas where winters become severe. It is primarily composed of coniferous trees (pine, hemlock, cedar, spruce) with a canopy cover of more than 60%cxciv. • OMNRF determines deer yards following methods outlined in "Selected Wildlife and Habitat Features: Inventory Manual" • Woodlots with high densities of deer due to artificial feeding are not significant.	No Studies Required: • Snow depth and temperature are the greatest influence on deer use of winter yards. Snow depths > 40cm for more than 60 days in a typically winter are minimum criteria for a deer yard to be considered as SWH. • Deer Yards are mapped by OMNRF District offices. Locations of Core or Stratum 1 and Stratum 2 Deer yards considered significant by OMNRF will be available at local MNRF offices or via Land Information Ontario (LIO). • Field investigations that record deer tracks in winter are done to confirm use (best done from an aircraft). Preferably, this is done over a series of winters to establish the boundary of the Stratum I and Stratum II yard in an "average" winter. MNRF will complete these field investigations. • If a SWH is determined for Deer Wintering Area or if a proposed development is within Stratum II yarding area then Movement Corridors are to be considered as outlined in Table 1.4.1 of this Schedule. • SWHMiST Index #2 provides development effects and mitigation measures.	The property is not mapped as core/Stratum 1 deeryard by the MNRF (Allan *et al*. 2005). No browse lines or signs of intensive browsing of shrubs/saplings characteristic of core deer yard habitat observed. No further evaluation undertaken.
Deer Winter Congregation Areas **<u>Rationale:</u>** Deer movement during winter in the southern areas of Ecoregion 6E are not constrained by snow depth, however deer will annually congregate in large numbers in suitable woodlands to reduce or avoid the impacts of winter conditions.	White-tailed Deer	All Forested Ecosites with these ELC Community Series; FOC FOM FOD SWC SWM SWD Conifer plantations much smaller than 50 ha may also be used.	• Woodlots will typically be >100 ha in size. Woodlots <100ha may be considered as significant based on MNRF studies or assessment. • Deer movement during winter in the southern areas of Ecoregion 6E are not constrained by snow depth, however deer will annually congregate in large numbers in suitable woodlands . • If deer are constrained by snow depth refer to the Deer Yarding Area habitat 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□. <u>Information Sources</u> • MNRF District Offices • LIO/NRVIS	Studies confirm: • Deer management is an MNRF responsibility, deer winter congregation areas considered significant will be mapped by MNRF • Use of the woodlot by white-tailed deer will be determined by MNRF, all woodlots exceeding the area criteria are significant, unless determined not to be significant by MNRF • Studies should be completed during winter (Jan/Feb) when >20cm of snow is on the ground using aerial survey techniques, ground or road surveys. or a pellet count deer density survey. • If a SWH is determined for Deer Wintering Area or if a proposed development is within Stratum II yarding area then Movement Corridors are to be considered as outlined in Table 1.4.1 of this Schedule. • SWHMiST Index #2 provides development effects and mitigation measures.	N/A – OMNRF to determine this habitat.

Table 6.2 - Rare Vegetation Communities

Rare Vegetation Community	Candidate SWH			Confirmed SWH	Assessment
	ELC Ecosite Code	Habitat Description	Detailed Information and Sources	Defining Criteria	
Cliffs and Talus Slopes **Rationale:** Cliffs and Talus Slopes are extremely rare habitats in Ontario.	Any ELC Ecosite within Community Series: TAO TAS TAT CLO CLS CLT	A Cliff is vertical to near vertical bedrock >3m in height. A Talus Slope is rock rubble at the base of a cliff made up of coarse rocky debris	Most cliff and talus slopes occur along the Niagara Escarpment. Information Sources • The Niagara Escarpment Commission has detailed information on location of these habitats. • OMNRF District • Natural Heritage Information Center (NHIC) has location information available on their website • Field Naturalist clubs • Conservation Authorities	• Confirm any ELC Vegetation Type for Cliffs or Talus Slopes • SWHMiST Index #21 provides development effects and mitigation measures.	Habitat in Study Area does not meet key criteria. No further evaluation undertaken.
Sand Barren **Rationale;** Sand barrens are rare in Ontario and support rare species. Most Sand Barrens have been lost due to cottage development and forestry	ELC Ecosites: SBO1 SBS1 SBT1 Vegetation cover varies from patchy and barren to continuous meadow (SBO1), thicket-like (SBS1), or more closed and treed (SBT1). Tree cover always ≤ 60%	Sand Barrens typically are exposed sand, generally sparsely vegetated and caused by lack of moisture, periodic fires and erosion. Usually located within other types of natural habitat such as forest or savannah. Vegetation can vary from patchy and barren to tree covered, but less than 60%.	A sand barren area >0.5ha in size. Information Sources • MNRF Distircts. • Natural Heritage Information Center (NHIC) has location information available on their website. • Field Naturalist clubs • Conservation Authorities	• Confirm any ELC Vegetation Type for Sand Barrens • Site must not be dominated by exotic or introduced species (<50% vegetative cover are exotic sp.) • SWHMiST Index #20 provides development effects and mitigation measures.	Habitat in Study Area does not meet key criteria. No further evaluation undertaken.

Alvar **Rationale;** Alvars are extremely rare habitats in Ecosregion 6E. Most alvars in Ontario are in Ecoregions 6E and 7E. Alvars in 6E are small and highly localized just north of the Palaeozoic-Precambrian contact.	ALO1 ALS1 ALT1 FOC1 FOC2 CUM2 CUS2 CUT2-1 CUW2 **Five Alvar Species:** 1) *Carex crawei* 2) *Panicum philadelphicum* 3) *Eleocharis compressa* 4) *Scutellaria parvula* 5) *Trichostema brachiatum* These indicator species are very specific to Alvars within Ecoregion 6E	An alvar is typically a level, mostly unfractured calcareous bedrock feature with a mosaic of rock pavements and bedrock overlain by a thin veneer of soil. The hydrology of alvars is complex, with alternating periods of inundation and drought. Vegetation cover varies from sparse lichen-moss associations to grasslands and shrublands and comprising a number of characteristic or indicator plants. Undisturbed alvars can be phyto- and zoogeographically diverse, supporting many uncommon or are relict plant and animal species. Vegetation cover varies from patchy to barren with a less than 60% tree cover	An Alvar site > 0.5 ha in size. Information Sources • Alvars of Ontario (2000), Federation of Ontario Naturalists. • Ontario Nature – Conserving Great Lakes Alvars. • Natural Heritage Information Center (NHIC) has location information available on their website • OMNRF Districts • Field Naturalist clubs. • Conservation Authorities.	• Field studies that identify four of the five **Alvar Indicator Species** at a Candidate Alvar site is Significant. • Site must not be dominated by exotic or introduced species (<50% vegetative cover are exotic sp.). • The alvar must be in excellent condition and fit in with surrounding landscape with few conflicting land uses • SWHMiST Index #17 provides development effects and mitigation measures.	Habitat in Study Area does not meet key criteria. No further evaluation undertaken.
Old Growth Forest **Rationale;** Due to historic logging practices, extensive old growth forest is rare in the Ecoregion. Interior habitat provided by old growth forests is required by many wildlife species.	Forest Community Series: FOD FOC FOM SWD SWC SWM	Old Growth forests are characterized by heavy mortality or turnover of over-storey trees resulting in a mosaic of gaps that encourage development of a multi-layered canopy and an abundance of snags and downed woody debris.	Woodland areas 30 ha or greater in size or with at least 10 ha interior habitat assuming 100 m buffer at edge of forest. Information Sources • OMNRF Forest Resource Inventory mapping • OMNRF Districts. • Field Naturalist clubs • Conservation Authorities • Sustainable Forestry Licence (SFL) companies will possibly know locations through field operations. • Municipal forestry departments	Field Studies will determine: • If dominant trees species of the are >140 years old, then the area containing these trees is 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 eco-element within an ecosite that contains the old growth characteristics is the SWH. • Determine ELC vegetation types for the forest area containing the old growth characteristics • SWHMiST Index #23 provides development effects and mitigation measures.	Forest communities in Study Area do not meet key criteria related to Woodland areas 30 ha or greater in size or with at least 10 ha interior habitat. No further evaluation undertaken.
Savannah **Rationale:** Savannahs are extremely rare habitats in Ontario.	TPS1 TPS2 TPW1 TPW2 CUS2	A Savannah is a tallgrass prairie habitat that has tree cover between 25 – 60%.	No minimum size to site. Site must be restored or a natural site. Remnant sites such as railway right of ways are not considered to be SWH. Information Sources • Natural Heritage Information Center (NHIC) has location information available on their website • OMNRF Districts • Field Naturalist clubs. • Conservation Authorities.	Field studies confirm one or more of the Savannah indicator species listed in Appendix N should be present. Note: Savannah plant spp. list from Ecoregion 6E should be used. • Area of the ELC Ecosite is the SWH. • Site must not be dominated by exotic or introduced species (<50% vegetative cover are exotic sp.). • SWHMiST Index #18 provides development effects and mitigation measures.	Habitat in Study Area does not meet key criteria. No further evaluation undertaken.

Tallgrass Prairie **Rationale:** Tallgrass Prairies are extremely rare habitats in Ontario.	TPO1 TPO2	A Tallgrass Prairie has ground cover dominated by prairie grasses. An open Tallgrass Prairie habitat has < 25% tree cover.	No minimum size to site. Site must be restored or a natural site. Remnant sites such as railway right of ways are not considered to be SWH. Information Sources • Natural Heritage Information Center (NHIC) has location information available on their website • OMNRF Districts • Field Naturalist clubs. Conservation Authorities.	Field studies confirm one or more of the Prairie indicator species listed in Appendix N should be present. Note: Prairie plant spp. list from Ecoregion 6E should be used • Area of the ELC Ecosite is the SWH. • Site must not be dominated by exotic or introduced species (<50% vegetative cover are exotic sp.). • SWHMiST Index #19 provides development effects and mitigation measures.	Habitat in Study Area does not meet key criteria. No further evaluation undertaken.
Other Rare Vegetation Communities **Rationale:** Plant communities that often contain rare species which depend on the habitat for survival.	Provincially Rare S1, S2 and S3 vegetation communities are listed in Appendix M of the SWHTG. Any ELC Ecosite Code that has a possible ELC Vegetation Type that is Provincially Rare is Candidate SWH.	Rare Vegetation Communities may include beaches, fens, forest, marsh, barrens, dunes and swamps.	ELC Ecosite codes that have the potential to be a rare ELC Vegetation Type as outlined in appendix M The OMNRF/NHIC will have up to date listing for rare vegetation communities. Information Sources • Natural Heritage Information Center (NHIC) has location information available on their website • OMNRF Districts • Field Naturalist clubs. • Conservation Authorities.	Field studies should confirm if an ELC Vegetation Type is a rare vegetation community based on listing within Appendix M of SWHTG. • Area of the ELC Vegetation Type polygon is the SWH. • SWHMiST Index #37 provides development effects and mitigation measures.	Habitat in Study Area does not meet key criteria. No further evaluation undertaken.

6.3 - Specialized Habitat for Wildlife

Wildlife Habitat	Wildlife Species	Candidate SHW		Confirmed SWH	Assessment
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	
Waterfowl Nesting Area **Rationale;** Important to local waterfowl populations, sites with greatest number of species and highest number of individuals are significant.	American Black Duck Northern Pintail Northern Shoveler Gadwall Blue-winged Teal Green-winged Teal Wood Duck Hooded Merganser Mallard	All upland habitats located adjacent to these wetland ELC Ecosites are Candidate SWH: MAS1 MAS2 MAS3 SAS1 SAM1 SAF1 MAM1 MAM2 MAM3 MAM4 MAM5 MAM6 SWT1 SWT2 SWD1 SWD2 SWD3 SWD4 **Note: includes adjacency to Provincially Significant Wetlands**	A waterfowl nesting area extends 120 m from a wetland (> 0.5 ha) or a wetland (>0.5ha) and any small wetlands (0.5ha) within 120m or a cluster of 3 or more small (<0.5 ha) wetlands within 120 m of each individual wetland where waterfowl nesting is known to occur. • Upland areas should be at least 120 m wide so that predators such as racoons, skunks, and foxes have difficulty finding nests. • Wood Ducks and Hooded Mergansers utilize large diameter trees (>40cm dbh) in woodlands for cavity nest sites. Information Sources • Ducks Unlimited staff may know the locations of particularly productive nesting sites. • OMNRF Wetland Evaluations for indication of significant waterfowl nesting habitat. • Reports and other information available from Conservation Authorities.	Studies confirmed: • Presence of 3 or more nesting pairs for listed species excluding Mallards, or; • Presence of 10 or more nesting pairs for listed species including Mallards. • Any active nesting site of an American Black Duck is considered significant. • Nesting studies should be completed during the spring breeding season (April - June). Evaluation methods to follow "Bird and Bird Habitats: Guidelines for Wind Power Projects" • A field study confirming waterfowl nesting habitat will determine the boundary of the waterfowl nesting habitat for the SWH, this may be greater or less than 120 m from the wetland and will provide enough habitat for waterfowl to successfully nest. • SWHMiST Index #25 provides development effects and mitigation measures.	Habitat in Study Area does not meet defining criteria. Appropriate surveys were conducted to determine use. No further evaluation undertaken.

Bald Eagle and Osprey Nesting, Foraging and Perching Habitat **<u>Rationale;</u>** Nest sites are fairly uncommon in Eco-region 6E and are used annually by these species. Many suitable nesting locations may be lost due to increasing shoreline development pressures and scarcity of habitat.	Osprey **Special Concern** Bald Eagle	ELC Forest Community Series: FOD, FOM, FOC, SWD, SWM and SWC directly adjacent to riparian areas – rivers, lakes, ponds and wetlands	Nests are associated with lakes, ponds, rivers or wetlands along forested shorelines, islands, or on structures over water. • Osprey nests are usually at the top a tree whereas Bald Eagle nests are typically in super canopy trees in a notch within the tree's canopy. • Nests located on man-made objects are not to be included as SWH (e.g. telephone poles and constructed nesting platforms). <u>Information Sources</u> • Natural Heritage Information Center (NHIC) compiles all known nesting sites for Bald Eagles in Ontario. • MNRF values information (LIO/NRVIS) will list known nesting locations. Note: data from NRVIS is provided as a point and does not represent all the habitat. • Nature Counts, Ontario Nest Records Scheme data. • OMNRF Districts. • Check the Ontario Breeding Bird Atlas or Rare Breeding Birds in Ontario for species documented • Reports and other information available from Conservation Authorities. • Field Naturalists clubs	Studies confirm the use of these nests by: • One or more active Osprey or Bald Eagle nests in an area. • Some species have more than one nest in a given area and priority is given to the primary nest with alternate nests included within the area of the SWH. • For an Osprey, the active nest and a 300 m radius around the nest or the contiguous woodland stand is the SWH , maintaining undisturbed shorelines with large trees within this area is important . • For a Bald Eagle the active nest and a 400-800 m radius around the nest is the SWH. , Area of the habitat from 400-800m is dependent on site lines from the nest to the development and inclusion of perching and foraging habitat • To be significant a site must be used annually. When found inactive, the site must be known to be inactive for > 3 years or suspected of not being used for >5 years before being considered not significant. • Observational studies to determine nest site use, perching sites and foraging areas need to be done from mid March to mid August. • Evaluation methods to follow "Bird and Bird Habitats: Guidelines for Wind Power Projects" • SWHMiST Index #26 provides development effects and mitigation measures	Habitat in Study Area does not meet key criteria. No nests of the listed species were identified during field investigations. No further evaluation undertaken.

Woodland Raptor Nesting Habitat **<u>Rationale:</u>** Nests sites for these species are rarely identified; these area sensitive habitats and are often used annually by these species.	Northern Goshawk Cooper's Hawk Sharp-shinned Hawk Red-shouldered Hawk Barred Owl Broad-winged Hawk	May be found in all forested ELC Ecosites. May also be found in SWC, SWM, SWD and CUP3	All natural or conifer plantation woodland/forest stands >30ha with >10ha of interior habitat. Interior habitat determined with a 200m buffer • Stick nests found in a variety of intermediate-aged to mature conifer, deciduous or mixed forests within tops or crotches of trees. Species such as Coopers hawk nest along forest edges sometimes on peninsulas or small off-shore islands. • In disturbed sites, nests may be used again, or a new nest will be in close proximity to old nest. <u>Information Sources</u> • OMNRF Districts. • Check the Ontario Breeding Bird Atlas or Rare Breeding Birds in Ontario for species documented. • Check data from Bird Studies Canada. • Reports and other information available from Conservation Authorities.	Studies confirm: • Presence of 1 or more active nests from species list is considered significant. • Red-shouldered Hawk and Northern Goshawk – A 400m radius around the nest or 28 ha area of habitat is the SWH . (the 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.	Forested areas within the Study Area do not meet key criteria related to forests >30ha with >10ha of interior habitat. No stick nests were identified during the field investigations. No further evaluation undertaken.
Turtle Nesting Areas **<u>Rationale;</u>** These habitats are rare and when identified will often be the only breeding site for local populations of turtles.	Midland Painted Turtle <u>Special Concern Species</u> Northern Map Turtle Snapping Turtle	Exposed mineral soil (sand or gravel) areas adjacent (<100m) or within the following ELC Ecosites: MAS1 MAS2 MAS3 SAS1 SAM1 SAF1 BOO1 FEO1	• Best nesting habitat for turtles are close to water and away from roads and sites less prone to loss of eggs by predation from skunks, raccoons or other animals. • For an area to function as a turtle-nesting area, it must provide sand and gravel that turtles are able to dig in and are located in open, sunny areas. Nesting areas on the sides of municipal or provincial road embankments and shoulders are not SWH. • Sand and gravel beaches adjacent to undisturbed shallow weedy areas of marshes, lakes, and rivers are most frequently used. <u>Information Sources</u> • Use Ontario Soil Survey reports and maps to help find suitable substrate for nesting turtles (well-drained sands and fine gravels). • Check the Ontario Herpetofaunal Summary Atlas records or other similar atlases for uncommon turtles; location information may help to find potential nesting habitat for them. • Natural Heritage Information Center (NHIC) • Field Naturalist clubs	Studies confirm: • Presence of 5 or more nesting Midland Painted Turtles • One or more Northern Map Turtle or Snapping Turtle nesting is a SWH. • The area or collection of sites within an area of exposed mineral soils where the turtles nest, plus a radius of 30-100m around the nesting area dependant on slope, riparian vegetation and adjacent land use is the SWH. • Travel routes from wetland to nesting area are to be considered within the SWH as part of the 30-100m area of habitat. • Field investigations should be conducted in prime nesting season typically late spring to early summer. Observational studies observing the turtles nesting is a recommended method. • SWHMiST Index #28 provides development effects and mitigation measures for turtle nesting habitat.	Potential areas suitable for nesting turtles were identified within the Study Area. See Sections 5.2.3 & 7.2.3 for further assessment.

Seeps and Springs **Rationale;** Seeps/Springs are typical of headwater areas and are often at the source of coldwater streams.	Wild Turkey Ruffed Grouse Spruce Grouse White-tailed Deer Salamander spp.	Seeps/Springs are areas where ground water comes to the surface. Often they are found within headwater areas within forested habitats. Any forested Ecosite within the headwater areas of a stream could have seeps/springs.	Any forested area (with <25% meadow/field/pasture) within the headwaters of a stream or river system. • Seeps and springs are important feeding and drinking areas especially in the winter will typically support a variety of plant and animal species Information Sources • 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.	Field Studies confirm: • 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	One seep identified in Study Area. Habitat in Study Area does not meet defining criteria related to 2 or more seeps/springs. No further evaluation undertaken.
Amphibian Breeding Habitat (Woodland). **Rationale:** These habitats are extremely important to amphibian biodiversity within a landscape and often represent the only breeding habitat for local amphibian populations	Eastern Newt Blue-spotted Salamander Spotted Salamander Gray Treefrog Spring Peeper Western Chorus Frog Wood Frog	All Ecosites associated with these ELC Community Series; FOC FOM FOD SWC SWM SWD Breeding pools within the woodland or the shortest distance from forest habitat are more significant because they are more likely to be used due to reduced risk to migrating amphibians	• Presence of a wetland, pond or woodland pool (including vernal pools) >500m2 (about 25m diameter) within or adjacent (within 120m) to a woodland (no minimum size). Some small wetlands may not be mapped and may be important breeding pools for amphibians. • Woodlands with permanent ponds or those containing water in most years until mid-July are more likely to be used as breeding habitat Information Sources • Ontario Herpetofaunal Summary Atlas (or other similar atlases) for records • Local landowners may also provide assistance as they may hear spring-time choruses of amphibians on their property. • OMNRF District. • OMNRF wetland evaluations • Field Naturalist clubs • Canadian Wildlife Service • Amphibian Road Call Survey • Ontario Vernal Pool Association: http://www.ontariovernalpools.org	Studies confirm; • Presence of breeding population of 1 or more of the listed newt/salamander species or 2 or more of the listed frog species with at least 20 individuals (adults or eggs masses) or 2 or more of the listed frog species with Call Level Codes of 3. • A combination of observational study and call count surveys will be required during the spring (March-June) when amphibians are concentrated around suitable breeding habitat within or near the woodland/wetlands. • The habitat is the wetland area plus a 230m radius of woodland area. If a wetland area is adjacent to a woodland, a travel corridor connecting the wetland to the woodland is to be included in the habitat. • SWHMiST Index #14 provides development effects and mitigation measures.	Pond feature in Study Area is located directly adjacent to forest communities. Field investigations reveal a high diversity and abundance of amphibian species. See Sections 5.2.6 & 7.2.6 for further assessment.

Amphibian Breeding Habitat (Wetlands) **<u>Rationale;</u>** Wetlands supporting breeding for these amphibian species are extremely important and fairly rare within Central Ontario landscapes.	Eastern Newt American Toad Spotted Salamander Four-toed Salamander Blue-spotted Salamander Gray Treefrog Western Chorus Frog Northern Leopard Frog Pickerel Frog Green Frog Mink Frog Bullfrog	ELC Community Classes SW, MA, FE, BO, OA and SA. Typically these wetland ecosites will be isolated (>120m) from woodland ecosites, however larger wetlands containing predominantly aquatic species (e.g. Bull Frog) may be adjacent to woodlands.	• Wetlands>500m2 (about 25m diameter), supporting high species diversity are significant; some small or ephemeral habitats may not be identified on MNRF mapping and could be important amphibian breeding habitats. • Presence of shrubs and logs increase significance of pond for some amphibian species because of available structure for calling, foraging, escape and concealment from predators. • Bullfrogs require permanent water bodies with abundant emergent vegetation. <u>Information Sources</u> • Ontario Herpetofaunal Summary Atlas (or other similar atlases) • Canadian Wildlife Service Amphibian Road Surveys and Backyard Amphibian Call Count. • OMNRF Districts and wetland evaluations • Reports and other information available from Conservation Authorities.	Studies confirm: • Presence of breeding population of 1 or more of the listed newt/salamander species or 2 or more of the listed frog/toad species with at least 20 individuals (adults or eggs masses) or 2 or more of the listed frog/toad species with Call Level Codes of 3. **or;** Wetland with confirmed breeding Bullfrogs are significant. • The ELC ecosite wetland area and the shoreline are the SWH. • A combination of observational study and call count surveys will be required during the spring (March-June) when amphibians are concentrated around suitable breeding habitat within or near the wetlands. • 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.	Pond feature is not isolated from woodland ecosites and is therefore considered as Amphibian Breeding for Woodland communities.
Woodland Area-Sensitive Bird Breeding Habitat **<u>Rationale:</u>** Large, natural blocks of mature woodland habitat within the settled areas of Southern Ontario are important habitats for area sensitive interior forest song birds.	Yellow-bellied Sapsucker Red-breasted Nuthatch Veery Blue-headed Vireo Northern Parula Black-throated Green Warbler Blackburnian Warbler Black-throated Blue Warbler Ovenbird Scarlet Tanager Winter Wren **Special Concern:** Cerulean Warbler Canada Warbler	All Ecosites associated with these ELC Community Series; FOC FOM FOD SWC SWM SWD	Habitats where interior forest breeding birds are breeding, typically large mature (>60 yrs old) forest stands or woodlots >30 ha, • Interior forest habitat is at least 200 m from forest edge habitat. <u>Information Sources</u> • Local bird clubs. • Canadian Wildlife Service (CWS) for the location of forest bird monitoring. • Bird Studies Canada conducted a 3-year study of 287 woodlands to determine the effects of forest fragmentation on forest birds and to determine what forests were of greatest value to interior species • Reports and other information available from Conservation Authorities.	Studies confirm: • Presence of nesting or breeding pairs of 3 or more of the listed wildlife species. • Note: any site with breeding 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.	Forest communities in Study Area do not contain any interior habitat. Breeding bird surveys confirmed only one individual of the listed species (*i.e.,* Black-throated Green Warbler) observed within the Study Area. Breeding was not confirmed, only observed incidentally once. No further evaluation undertaken.

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

Wildlife Habitat	Wildlife Species	Candidate SHW		Confirmed SWH	Assessment
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	
Marsh Breeding Bird Habitat **Rationale;** Wetlands for these bird species are typically productive and fairly rare in Southern Ontario landscapes.	American Bittern Virginia Rail Sora Common Moorhen American Coot Pied-billed Grebe Marsh Wren Sedge Wren Common Loon Sandhill Crane Green Heron Trumpeter Swan **Special Concern:** Black Tern Yellow Rail	MAM1 MAM2 MAM3 MAM4 MAM5 MAM6 SAS1 SAM1 SAF1 FEO1 BOO1 For Green Heron: All SW, MA and CUM1 sites.	• Nesting occurs in wetlands. • All wetland habitat is to be considered as long as there is shallow water with emergent aquatic vegetation present. • For Green Heron, habitat is at the edge of water such as sluggish streams, ponds and marshes sheltered by shrubs and trees. Less frequently, it may be found in upland shrubs or forest a considerable distance from water. Information Sources • OMNRF District and wetland evaluations. • Field Naturalist clubs • Natural Heritage Information Center (NHIC) Records. • Reports and other information available from Conservation Authorities. • Ontario Breeding Bird Atlas.	Studies confirm: • Presence of 5 or more nesting pairs of Sedge Wren or Marsh Wren or **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	Habitat in Study Area does not meet criteria related to ELC codes. No further evaluation undertaken.
Open Country Bird Breeding Habitat Sources Defining Criteria **Rationale;** This wildlife habitat is declining throughout Ontario and North America. Species such as the Upland Sandpiper have declined significantly the past 40 years based on CWS (2004) trend records.	Upland Sandpiper Grasshopper Sparrow Vesper Sparrow Northern Harrier Savannah Sparrow **Special Concern** Short-eared Owl	CUM1 CUM2	Large grassland areas (includes natural and cultural fields and meadows) >30 ha • Grasslands not Class 1 or 2 agricultural lands, and not being actively used for farming (i.e. no row cropping or intensive hay or livestock pasturing in the last 5 years). • Grassland sites considered significant should have a history of longevity, either abandoned fields, mature hayfields and pasturelands that are at least 5 years or older. • The Indicator bird species are area sensitive requiring larger grassland areas than the common grassland species. Information Sources • Agricultural land classification maps, Ministry of Agriculture. • Local bird clubs. • Ontario Breeding Bird Atlas • Reports and other information available from Conservation Authorities.	Field Studies confirm: • Presence of nesting or breeding of 2 or more of the listed species. • A field with 1 or more breeding Short-eared Owls 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	CUM communities in Study Area do not meet criteria related to size (*i.e.,* >30 ha). No further evaluation undertaken.

Shrub/Early Successional Bird Breeding Habitat **<u>Rationale:</u>** This wildlife habitat is declining throughout Ontario and North America. The Brown Thrasher has declined significantly over the past 40 years based on CWS (2004) trend records.	Indicator Spp: Brown Thrasher Clay-coloured Sparrow Common Spp. Field Sparrow Black-billed Cuckoo Eastern Towhee Willow Flycatcher **Special Concern:** Yellow-breasted Chat Golden-winged Warbler	CUT1 CUT2 CUS1 CUS2 CUW1 CUW2 Patches of shrub ecosites can be complexed into a larger habitat for some bird species	Large field areas succeeding to shrub and thicket habitats>10haclxiv in size. • Shrub land or early successional fields, not class 1 or 2 agricultural lands, not being actively used for farming (i.e. no row-cropping, haying or live-stock pasturing in the last 5 years). • Shrub thicket habitats (>10 ha) are most likely to support and sustain a diversity of these species. • Shrub and thicket habitat sites considered significant should have a history of longevity, either abandoned fields or pasturelands. <u>Information Sources</u> • Agricultural land classification maps, Ministry of Agriculture. • Local bird clubs. • Ontario Breeding Bird Atlas • Reports and other information available from Conservation Authorities.	Field Studies confirm: • Presence of nesting or breeding of 1 of the indicator species and at least 2 of the common species. • A habitat with breeding 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.	Habitat in Study Area does not technically meet key criteria related to ELC codes. However, the THD communities in Study Area are immature and could presently be utilized as a shrub community. Field studies confirm that the THD communities do not meet criteria for nesting or breeding of the listed species. No further evaluation undertaken.
Terrestrial Crayfish **<u>Rationale:</u>** Terrestrial Crayfish are only found within SW Ontario in Canada and their habitats are very rare.	Chimney or Digger Crayfish; (Fallicambarus fodiens) Devil Crayfish or Meadow Crayfish; (Cambarus Diogenes)	MAM1 MAM2 MAM3 MAM4 MAM5 MAM6 MAS1 MAS2 MAS3 SWD SWT SWM CUM1 with inclusions of above meadow marsh or swamp ecosites can be used by terrestrial crayfish.	Wet meadow and edges of shallow marshes (no minimum size) should be surveyed for terrestrial crayfish. • Constructs burrows in marshes, mudflats, meadows, the ground can’t be too moist. Can often be found far from water. • Both species are a semi-terrestrial burrower which spends most of its life within burrows consisting of a network of tunnels. Usually the soil is not too moist so that the tunnel is well formed. <u>Information Sources</u> • Information sources from “Conservation Status of Freshwater Crayfishes” by Dr. Premek Hamr for the WWF and CNF March 1998	Studies Confirm: • Presence of 1 or more individuals of species listed or their chimneys (burrows) in suitable meadow marsh, swamp or moist terrestrial sites • Area of ELC ecosite or an ecoelement area of meadow marsh or swamp within the larger ecosite area is the SWH. • Surveys should be done April to August in temporary or permanent water. Note the presence of burrows or chimneys are often the only indicator of presence, observance or collection of individuals is very difficult • SWHMiST Index #36 provides development effects and mitigation measures.	Does not meet criteria related to location in SW Ontario.
Special Concern and Rare Wildlife Species **<u>Rationale:</u>** These species are quite rare or have experienced significant population declines in Ontario.	All Special Concern and Provincially Rare (S1-S3, SH) plant and animal species. Lists of these species are tracked by the Natural Heritage Information Centre.	All plant and animal element occurrences (EO) within a 1 or 10km grid. Older element occurrences were recorded prior to GPS being available, therefore location information may lack accuracy	When an element occurrence is identified within a 1 or 10 km grid for a Special Concern or provincially Rare species; linking candidate habitat on the site needs to be completed to ELC Ecosites <u>Information Sources</u> • Natural Heritage Information Centre (NHIC) will have Special Concern and Provincially Rare (S1-S3, SH) species lists with element occurrences data. • NHIC Website “Get Information” : http://nhic.mnr.gov.on.ca • Ontario Breeding Bird Atlas • Expert advice should be sought as many of the rare spp. have little information available about their requirements.	Studies Confirm: • Assessment/inventory of the site for the identified special concern or rare species needs to be completed during the time of year when the species is present or easily identifiable. • The area of the habitat to the finest ELC scale that protects the habitat form and function is the SWH, this must be delineated through detailed field studies. The habitat needs be easily mapped and cover an important life stage component for a species e.g. specific nesting habitat or foraging habitat. • SWHMiST Index #37 provides development effects and mitigation measures.	Special Concern species observed within Study Area. See Sections 5.2.7 & 7.2.7 for further assessment.

6.5 - Animal Movement Corridors

Wildlife Habitat	Wildlife Species	Candidate SHW		Confirmed SWH	Assessment
		ELC Ecosite	Habitat Criteria and Information Sources	Defining Criteria	
Amphibian Movement Corridors **Rationale;** Movement corridors for amphibians moving from their terrestrial habitat to breeding habitat can be extremely important for local populations.	Eastern Newt American Toad Spotted Salamander Four-toed Salamander Blue-spotted Salamander Gray Treefrog Western Chorus Frog Northern Leopard Frog Pickerel Frog Green Frog Mink Frog Bullfrog	Corridors may be found in all ecosites associated with water. • Corridors will be determined based on identifying the significant breeding habitat for these species in Table 1.1	Movement corridors between breeding habitat and summer habitat. • 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. Information Sources • MNRF District Office. • Natural Heritage Information Center (NHIC). • Reports and other information available from Conservation Authorities. • Field Naturalist Clubs.	• Field Studies must be conducted at the time of year when species are expected to be migrating or entering breeding sites. • Corridors should consist of native vegetation, with several layers of vegetation. • Corridors unbroken by roads, waterways or bodies, and undeveloped areas are most significant • Corridors should have at least 15m of vegetation on both sides of waterway or be up to 200m wide of woodland habitat and with gaps <20mcxlix . • Shorter corridors are more significant than longer corridors, however amphibians must be able to get to and from their summer and breeding habitat. • SWHMiST Index #40 provides development effects and mitigation measures	Forest communities in Study Area may be used as a movement corridor for some species of amphibians. See Sections 5.2.8 & 7.2.8 for further assessment.
Deer Movement Corridors **Rationale:** Corridors important for all species to be able to access seasonally important life-cycle habitats or to access new habitat for dispersing individuals by minimizing their vulnerability while travelling.	White-tailed Deer	Corridors may be found in all forested ecosites. A Project Proposal in Stratum II Deer Wintering Area has potential to contain corridors.	Movement corridor must be determined when **Deer Wintering Habitat** is confirmed as SWH from Table 1.1 of this schedule. • 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). Information Sources • MNRF District Office. • Natural Heritage Information Center (NHIC). • Reports and other information available from Conservation Authorities. • Field Naturalist Clubs.	• Studies must be conducted at the time of year when deer are migrating or moving to and from winter concentration areas. • Corridors that lead to a deer wintering habitat should be unbroken by roads and residential areas. • Corridors should be at least 200m wide with gaps <20mcxlix 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	No deer wintering habitat. No further evaluation undertaken.

6.6 - Exceptions for EcoRegion 6E

EcoDistrict	Wildlife Habitat and Species	Candidate			Confirmed SWH	Assessment
		Ecosites	**Habitat Description**	**Habitat Criteria and Information**	**Defining Criteria**	
6E-14 **Rationale:** The Bruce Peninsula has an isolated and distinct population of black bears. Maintenance of large woodland tracts with mast-producing tree species is important for bears.	**Mast Producing Areas** Black Bear	All Forested habitat represented by ELC Community Series: FOM FOD	• Black bears require forested habitat that provides cover, winter hibernation sites, and mast-producing tree species. • Forested habitats need to be large enough to provide cover and protection for black bears	Woodland ecosites >30ha with mast-producing tree species, either soft (cherry) or hard (oak and beech), Information Sources Important forest habitat for black bears may be identified by OMNRF.	All woodlands > 30ha with a 50%composition of these ELC Vegetation Types are considered significant: FOM1-1 FOM2-1 FOM3-1 FOD1-1 FOD1-2 FOD2-1 FOD2-2 FOD2-3 FOD2-4 FOD4-1 FOD5-2 FOD5-3 FOD5-7 FOD6-5 SWHMiST Index #3 provides development effects and mitigation measures.	Habitat on property does not criteria related to size of woodland (*i.e.,* >30ha), and tree species. No further evaluation undertaken.
6E- 17 **Rationale:** Sharp-tailed grouse only occur on Manitoulin Island in Eco-region 6E, Leks are an important habitat to maintain their population	**Lek** **Sharp-tailed Grouse**	CUM CUS CUT	• The lek or dancing ground consists of bare, grassy or sparse shrubland. There is often a hill or rise in topography. • Leks are typically a grassy field/meadow >15ha with adjacent shrublands and >30ha with adjacent deciduous woodland. Conifer trees within 500m are not tolerated.	Grasslands (field/meadow) are to be >15ha when adjacent to shrubland and >30ha when adjacent to deciduous woodland. • Grasslands are to be undisturbed with low intensities of agriculture (light grazing or late haying) • Leks will be used annually if not destroyed by cultivation or invasion by woody plants or tree planting Information Sources • OMNRF district office • Bird watching clubs • Local landowners • Ontario Breeding Bird Atlas	Studies confirming lek habitat are to be completed from late March to June. • Any site confirmed with sharp-tailed grouse courtship activities is considered significant • The field/meadow ELC ecosites plus a 200 m radius area with shrub or deciduous woodland is the lek habitat • SWHMiST Index #32 provides development effects and mitigation measures	Does not meet criteria related to Manitoulin Island.

CRITERIA	STANDARDS	ASSESSMENT
Woodland Size Criteria		
• Size refers to the aerial (spatial) extent of the woodland (irrespective of ownership) • Woodland areas are considered to be generally continuous even if intersected by narrow gaps 20m or less in width between crown edges. • Size value is related to the scarcity of woodland in the landscape derived on a municipal basis with consideration of the differences in woodland coverage among physical sub-units (e.g., watersheds, biophysical regions). • Size criteria should also account for differences in landscape-level physiography (e.g., moraines, clay planes) and community vegetation types.	Where woodlands cover: • Is less than about 5% of land cover, woodlands 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	• An aerial overview of the Town of Blue Mountains land cover estimates that woodlands cover approximately **15-30%** of land in the Township. Therefore, the Natural Heritage Reference Manual (NHRM) (MNRF.2010) recommends that continuous patches of woodland cover in the Town of Blue Mountains larger than **20ha** should be considered. • The woodland within the property is part of the continuous woodland that extends to the south and east of the property. The total area of the continuous woodland is approximately 166ha. Therefore, the woodland present in the property **forms part of and is continuous with a patch of woodland that covers more than 20ha of the surrounding landscape**. • ***Therefore, based on size criteria – forest cover of the property would be considered significant woodland in the context of the PPS.***
Ecological Function Criteria		
Woodland Interior		
• Interior Habitat more than 100m from the edge (as measured from the limits of a continuous woodland as defined above) is important for some species. • For purposes of this criterion, a maintained public road	Woodlands should be considered significant if they have: • Any interior habitat where woodlands cover less than about 15% of the land cover • **2 ha or more of interior habitat where woodlands cover about 15-30% of the land cover** • 8 ha or more of interior habitat where	• The continuous woodland contains > 2ha of interior habitat. • The woodland on the property does not contain any interior habitat. • ***Therefore, based on the woodland interior criteria – forest cover of the property would not be considered significant woodland in the context of the PPS.***

CRITERIA	STANDARDS	ASSESSMENT
would create an edge even if the opening was not wider than 20m and did not create a separate woodland.	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	
Proximity to Other Woodlands or Other Habitats		
• Woodlands that overlap, abut or are close to other significant natural heritage features or areas could be considered more valuable or significant than those that are not. • Patches close to each other are of greater mutual benefit and value to wildlife.	Woodlands should be considered significant if: • **A portion of the woodland is located within a specific distance (e.g., 30m) of a significant natural feature** or **fish habitat likely receiving ecological benefit from the woodland** and the **entire woodland meets the minimum area threshold** (e.g., 0.5-20ha, depending on circumstance)	• Fish habitat function of two watercourses on the property benefit from woodland cover (shade, nutrient input, bank stabilizations, etc). • Entire woodland meets minimum area threshold. • ***Therefore, based on the proximity to other woodlands or other habitats criteria – forest cover of the property would be considered part of significant woodland in the context of the PPS.***
Linkages		
• Linkages are important connections providing for movement between habitats. • Woodlands that are located between other significant features or areas can be considered to perform an important linkage function as "stepping stones" for movement between habitats.	Woodlands should be considered significant if they: • Are located within a defined natural heritage system or provide a **connecting link between two other significant features, each of which is within a specified distance (e.g., 120m**) and **meets minimum area thresholds** (e.g., 1-20ha, depending on circumstance)	• Woodland on the property is located within a defined natural heritage system (Grey County Official Plan. 2013) (Niagara Escarpment Plan. 2015). • Woodland on the property provides animal movement corridor between two significant features (*i.e.*, watercourses); • **Entire woodland meets minimum area threshold.** • ***Therefore, based on potential habitat linkages criteria - forest cover of the property would be considered part of significant woodland in the context of the PPS.***
Water Protection		
• Source water protection is important. • Natural hydrological processes should be maintained.	Woodlands should be considered significant if they: • Are located within a sensitive or threatened watershed or a **specific distance (e.g., 50m or top of valley bank if greater)** or a sensitive groundwater discharge, sensitive recharge, sensitive headwater area, watercourse or **fish habitat and meet minimum area thresholds** (e.g., 0.5-10ha,	• Woodland on the property is located within a significant groundwater recharge area and highly vulnerable aquifer (Grey County Official Plan. 20XX). • Fish habitat has been identified within the woodland on the property. • Seep feature identified within woodland on the property. • **Entire woodland meets minimum area threshold.** • ***Therefore, based on the water protection criteria -forest***

CRITERIA	STANDARDS	ASSESSMENT
	depending on circumstance)	***cover of the property would be considered part of significant woodland in the context of the PPS.***
Woodland Diversity		
• 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.	Woodlands should be considered significant if they have: • 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)	• Woodland on the property contains native forest tree species that have declined significantly (*i.e.*, Butternut). • **Entire woodland meets minimum area threshold.** • ***Therefore, based on woodland diversity criteria -forest cover of the property would be considered part of significant woodland in the context of the PPS.***
Uncommon Characteristics Criteria		
• Woodlands that are uncommon in terms of species composition, cover type, age or structure should be protected. • Older woodlands (i.e., woodlands greater than 100 years old) are particularly valuable for several reasons, including their contributions to genetic, species and ecosystem diversity.	Woodlands should be considered significant if they have: • A unique species composition or the site is represented by less than 5% overall in woodland area and meets minimum area thresholds (e.g., 0.5ha, 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 100m^2 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	• Woodland on the property contains compositions and structures of types common within the planning area. • Woodland on the property does not contain vegetation communities ranked as provincially significant by the NHIC. • Woodland on the property contains habitat of a rare (S2) woodland species (*i.e.*, Butternut). • Woodland on the property does not show characteristics of older woodlands. • **Entire woodland meets minimum area threshold.** • ***Therefore, based on uncommon characteristics criteria - forest cover of the property would be considered part of significant woodland in the context of the PPS.***

CRITERIA	STANDARDS	ASSESSMENT
	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 m^2/ha in trees that are at least 40cm in diameter	
Economic and Social Function Values Criteria		
• Woodlands that have high economic or social values through particular site characteristics or deliberate management should be protected.	Woodlands should be considered significant if they have: • High productivity in terms of economically viable products together with continuous native natural attributes and meet minimum area thresholds (e.g., 2-20ha, 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)	• Woodland on the property does not generate economically viable forest products. • No formal recreational use of property of adjacent lands. • Woodland on the property not identified as providing education, cultural or historical value. • Economic and social values do not compel identification as significant.

APPENDICES

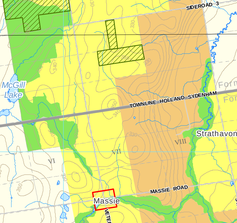
Appendix A: Niagara Escarpment Plan
Appendix B: Grey County Official Plan
Appendix C: Town of Blue Mountains Official Plan
Appendix D: Agency Correspondence
Appendix E: Butternut Health Assessment Report
Appendix F: NHIC and OBBA Information

APPENDIX A

Niagara Escarpement Plan

Niagara Escarpment Plan

MAP 6



COUNTY OF GREY

MUNICIPALITY OF GREY HIGHLANDS
TOWN OF THE BLUE MOUNTAINS
TOWNSHIP OF CHATSWORTH
MUNICIPALITY OF MEAFORD (PART)

LEGEND

- Escarpment Natural Area
- Escarpment Protection Area
- Escarpment Rural Area
- Mineral Resource Extraction Area
- Escarpment Recreation Area
- Urban Area
- Minor Urban Centre
- Public Land (in Parks and Open Space System)
- Policy Amendments to the Niagara Escarpment Plan

NOTE: The Niagara Escarpment Plan designation boundaries shown on this map are approximate and subject to confirmation through site inspection and the application of the "Interpretation of Boundaries" section of the Niagara Escarpment Plan.

SCALE 1:50000

Miles 1 0.5 0 1 2 3

Kilometres 1 0.5 0 1 2 3 4

BASE MAP LEGEND

ROADS

- Expressway
- Provincial Highway
- County or Regional
- Local Municipal

BOUNDARIES

- County or Regional Municipality
- Township, Local and Area Municipality
- Former Township

OTHER

- Railway
- Abandoned Railway
- Contour (10m Interval)
- Lot and Concession Boundary

THE NIAGARA ESCARPMENT PLAN 2005
APPROVED and ORDERED June 1, 2005
O.C. # 912/2005

Amendments Consolidated to 2015

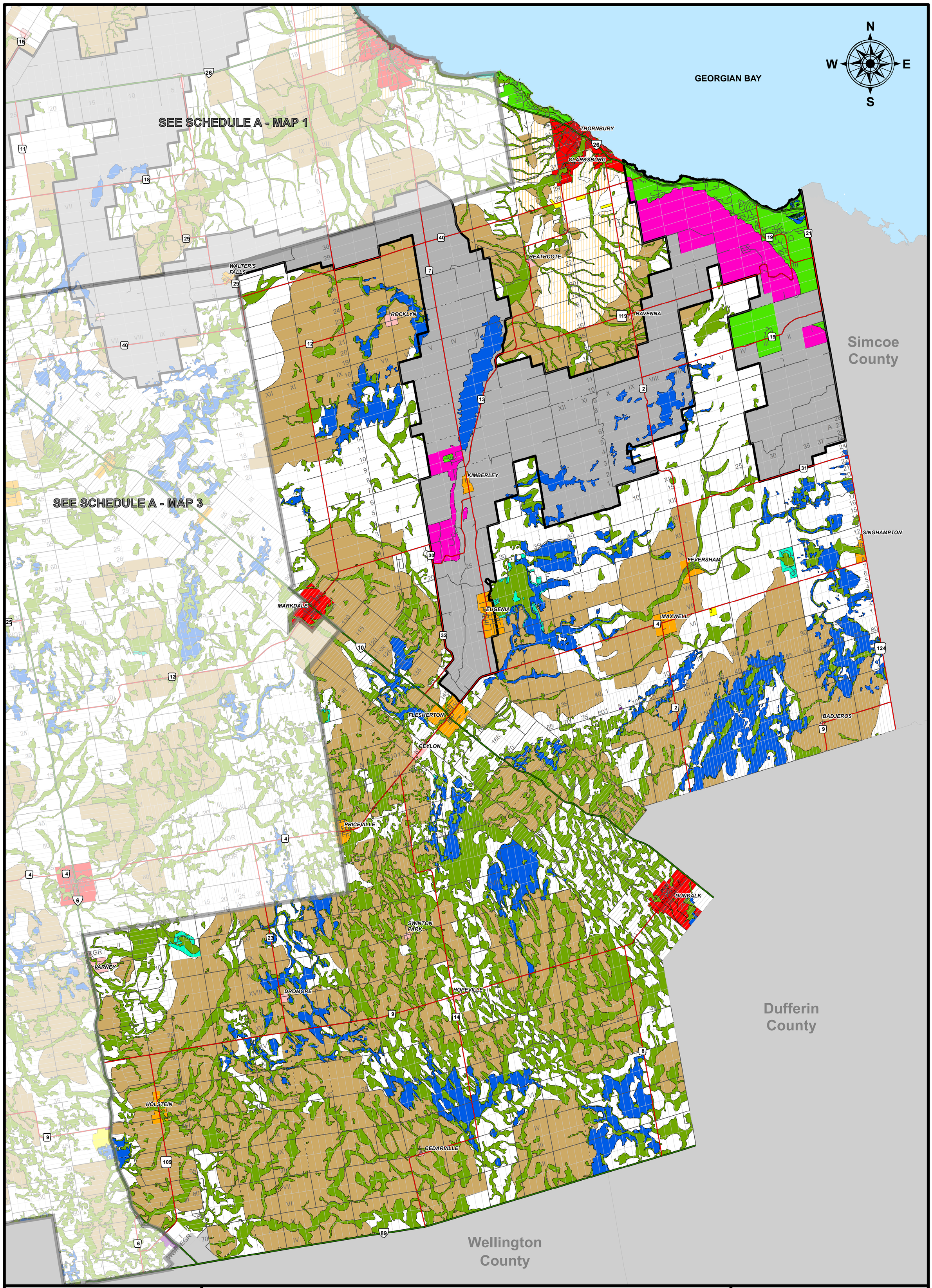
Vector Base Map Data supplied by the Ontario Ministry of Natural Resources, Natural Resources & Values Information System (NRVIS) 1:10 000 Database.

Map Compiled and Produced by the Geographic Information Systems (GIS) Department of the Niagara Escarpment Commission, Ministry of Natural Resources.

Ontario

APPENDIX B

County of Grey Official Plan



THE COUNTY OF GREY
OFFICIAL PLAN

SCHEDULE A
Land Use Designations

MAP 2

LEGEND

- Provincial Highway
- County Road
- Local Road
- Seasonal Road
- Agricultural
- Special Agriculture
- Rural
- Primary Settlement Area *
- Secondary Settlement Area *
- Tertiary Settlement Area *
- Inland Lakes & Shoreline
- Recreational Resort Area
- Space Extensive Commercial
- Space Extensive Industrial
- Hazard Lands
- Provincially Significant Wetlands
- Niagara Escarpment Plan Boundary **
- Niagara Escarpment Development Control Area
- Escarpment Recreation Area

* *refer to Secondary Schedules for further detail.*

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

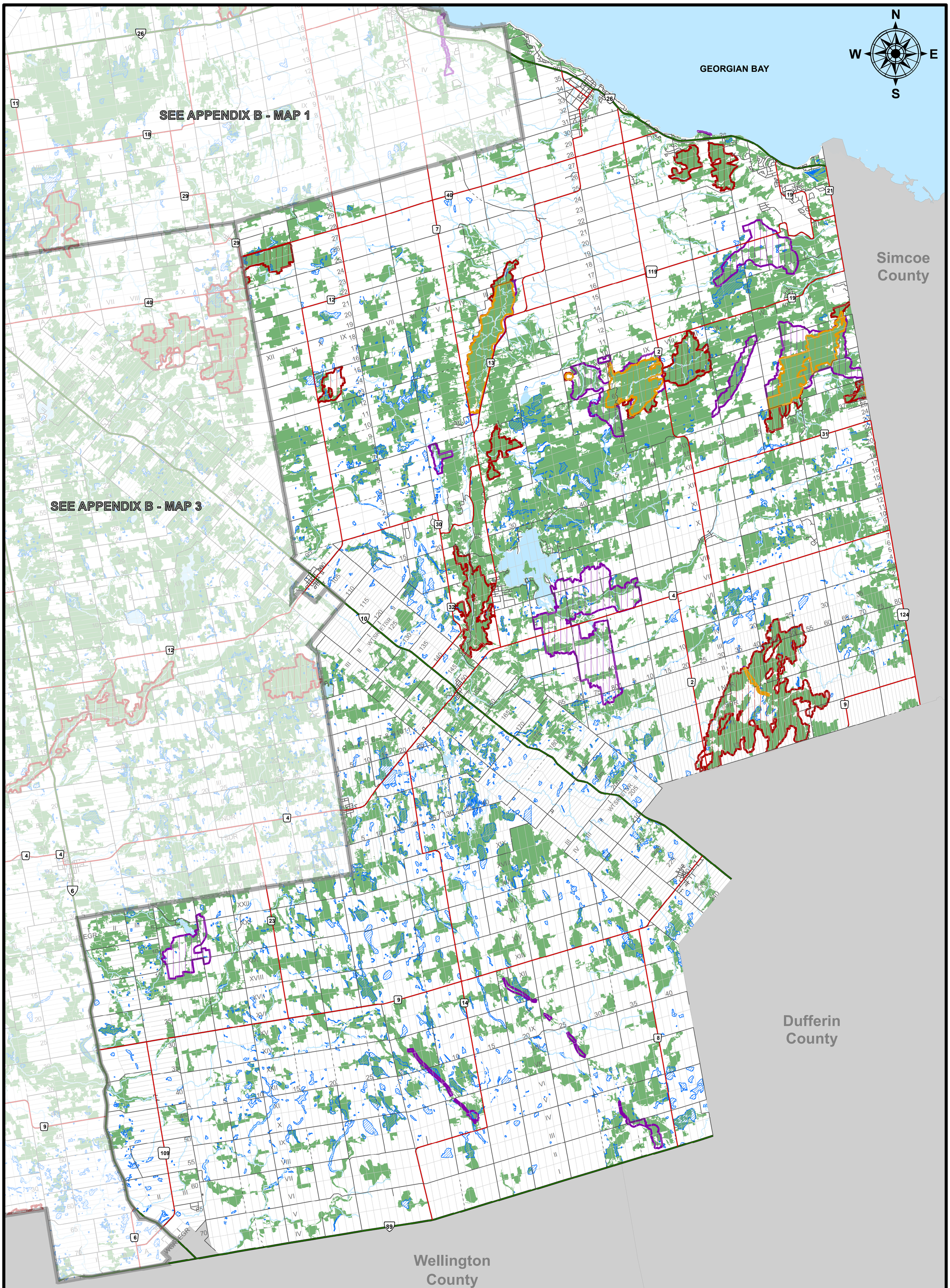
SCALE 1: 95,000

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

AUTHOR: Grey County Planning and Development
FILE NAME: GR_OP_SchedA_Map2eastX36.mxd
APPLICATION: ArcMap
DATE: Consolidated to June 25, 2013
PROJECTION: UTM zone 17N / NAD83
SOURCE: Teranet / Ontario Ministry of Natural Resources

INTERACTIVE MAP: maps.grey.ca
DOWNLOAD PDF: grey.ca

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



Grey County

THE COUNTY OF GREY
OFFICIAL PLAN

APPENDIX B
Constraint Mapping

MAP 2

LEGEND

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

SCALE 1: 95,000

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

AUTHOR:	Grey County Planning and Development
FILE NAME:	GR_OP_ApdxB_Map2eastX36.mxd
APPLICATION:	ArcMap
DATE:	Consolidated to June 25, 2013
PROJECTION:	UTM zone 17N / NAD83
SOURCE:	Teranet / Ontario Ministry of Natural Resources

INTERACTIVE MAP: maps.grey.ca
DOWNLOAD PDF: grey.ca

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

APPENDIX C

Town of Blue Mountains Official Plan

The Blue Mountains
Official Plan Schedule 'A-4'
Craigleith and Swiss Meadows

Designations

- Agricultural
- Commercial Corridor
- Craigleith Village Commercial
- Craigleith Village HSFPSW
- Escarpment
- Future Secondary Plan Area
- Craigleith Village Residential
- Hazard
- Institutional Area
- Major Open Space
- Recreational Commercial Area
- Recreational Ski
- Residential Recreational Area
- Resort Commercial
- Rural
- Special Agricultural
- Wetlands
- Niagara Escarpment Plan Boundary

0 500 1,000 Metres

N W E S

Subject to Section B3.7.6.7
Subject to Section B3.7.6.8
Subject to Section B3.7.6.9
Subject to Section B3.7.6.4
Subject to Section B3.7.6.11
Subject to Section B3.15.8.2
Subject to Section B3.15.8.1
Subject to Section B3.7.6.3
Subject to Section B3.7.6.6
Subject to Section B3.7.6.10
Subject to Section B3.11.6.1
Subject to Section B3.7.6.12
Subject to Section B3.11.6.1
Subject to Section B3.7.6.13

See Schedule A-5

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

Download PDF: www.thebluemountains.ca

June 2016

APPENDIX D

Agency Correspondence

Stephanie Casutt

From: Andrew Sorensen [a.sorensen@greysauble.on.ca]
Sent: 05-20-2016 11:47
To: Stephanie Casutt
Cc: Melissa Fuller
Subject: RE: Terms of Reference - 161 Lakeshore Rd, Craigleith
Attachments: EIS Guidelines approved Nov19_2009.pdf

Hi Stephanie:

The draft terms of reference is generally acceptable. I have provided a copy of the Bruce County EIS Guidelines that we typically use as a guideline for these studies for Bruce and Grey.

Best Regards,

Andrew J. Sorensen
Environmental Planning Co-ordinator
Grey Sauble Conservation Authority
#237897 Inglis Falls Road, RR#4, Owen Sound, ON N4K 5N6
Phone: 519-376-3076 ext. 227 Fax: 519-371-0437
www.greysauble.on.ca a.sorensen@greysauble.on.ca

From: Stephanie Casutt [mailto:scasutt@azimuthenvironmental.com]
Sent: May-09-16 11:50 AM
To: Andrew Sorensen <a.sorensen@greysauble.on.ca>
Cc: Melissa Fuller <MFuller@Azimuthenvironmental.Com>
Subject: Terms of Reference - 161 Lakeshore Rd, Craigleith

Hello Andy,

Azimuth has been retained to complete an Environmental Impact Study (EIS) for a property located at 161 Lakeshore Rd and the adjacent property at 208 Lakeshore Rd (Figure 1 and 2). The property is of a mixed-use nature, with evidence of past agricultural practices. Forest communities exist along the watercourse and the slope that runs east-west throughout the property, where 13 Butternut have been identified. A pond of approximately 0.5ha in size is located in the eastern portion of the property, where amphibian breeding habitat has been confirmed during spring 2016 field investigations.

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

- Contact the Ontario Ministry of Natural Resources to acquire current background information regarding Species at Risk (SAR);
- Conduct field surveys to document existing natural heritage features, functions, and species:

- Three-season vegetation surveys;
- Two dawn breeding bird surveys;
- Two evening bird surveys (Whip-poor-will, Common Nighthawk);
- Five turtle surveys using the MNRF's Blanding's Turtle Basking Survey protocol;
- Three amphibian surveys;
- Visual survey of potential bat roosting habitat within buildings.

- Conduct Butternut Health Assessment for the 13 identified Butternut;
- Evaluate vegetation communities using protocols of the Ecological Land Classification for Southern Ontario (Lee *et al*. 1998. Ecological land classification for southern Ontario: first approximation and its applications. SCSS Field Guide FG-02);
- Conduct a SAR screening assessment in accordance with Ontario's *Endangered Species Act*;
- Document aquatic features and fish habitat on the property;
- Prepare aerial photography based mapping of the environmental features identified on and adjacent to the property showing areas of environmental constraint to development;
- Overlay the proposed development plan on environmental features/constraints mapping to illustrate potential direct and indirect impacts;
- Assess the environmental impacts of the proposed development plan and provide recommendations for mitigation; and
- Prepare an EIS report describing the impact assessment and identifying environmental policy and regulation conformity of the proposed development. This report would include an evaluation of the potential of the site to function as significant habitat for EHNS.

At this time, we are asking that GSCA provide comment on the proposed TOR for the abovementioned property. Please do not hesitate to contact me to discuss further.

Regards,

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

1.0 Authorizing County of Bruce Official Plan Section

The authorization to require the submission of an Environmental Impact Study is found in Section 6.19 'Other Information to be Submitted in Support of a Planning Application' of the County of Bruce Official Plan. Section 6.19 states that:

.1 As per Subsection 22(5) (Other Information) and/or Subsection 34(10.2) (Other Information) and/or Subsection 51(18) (Other Information) and/or Subsection 53(3) (Other Information) of the Planning Act R.S.O. 1990, c.p.13, as amended to March 30, 2007 a person, public body or applicant shall provide together with an amendment or application, in addition to the information prescribed by the Planning Act, or Regulations thereto, any or all of the following Assessments, Evaluations, Reports, Statements, Studies or Plans as requested by the Province of Ontario, County of Bruce, any lower tier municipality or any agency at the sole discretion of the County of Bruce.

Note: Other Reports, Assessments, or Studies may be required. Please contact your Area Planner for more information.

2.0 Purpose of an Environmental Impact Study (EIS)

The purpose of an Environmental Impact Study (EIS) is to identify natural features and functions and assess the potential positive and negative environmental impacts, opportunities for enhancement and impact avoidance, and mitigation measures for a development proposal.

It is not the intent of the EIS to duplicate similar study requirements i.e., Environmental Assessment, MEA Class EA etc. of other agencies. The EIS requirements and review process should be coordinated with other agencies requirements so that environmental analyses and recommendations can be addressed through one study process.

The EIS will assess impacts that are anticipated from the proposed development application on natural heritage features, functions, and linkages including but not limited to:

- Fish and aquatic habitat
- Wetland
- Woodlands
- Valleylands
- Wildlife habitat
- Environmentally Significant Areas (ESA's)
- Areas of Natural and Scientific Interest (ANSI's)
- Species and Habitats of Endangered and Threatened Species
- Groundwater recharge and discharge areas
- Well Head Protection Areas and Intake Zones
- Karst
- Water quality and quantity
- Flood and erosion hazards of streams and valleylands
- Flood, erosion and dynamic beach hazards associated with the Great Lakes and inland lake shorelines
- Natural Heritage Areas

The proponent of a given development has a financial responsibility to fulfill the requirements established by the Province, the County and the municipality for an Environmental Impact Study. The EIS will contain recommendations that discuss whether or not the impacts of the proposed development are acceptable or not, and measures to maintain, mitigate or enhance the natural heritage features and functions of the site. This includes management and mitigation of impacts that are unavoidable. We expect that the results of the analysis to be based on good science that is technically defensible and that adequately protects the features and functions on the site.

Through this process it is anticipated that development proposals will be modified to reduce impacts where possible. The EIS will be reviewed for technical accuracy and extent of impacts. **The completion of an EIS does not assure the approval of a development proposal.** An EIS provides the mechanism for assessing impacts. Additional modification of development proposals may result during review, if the development concept is deemed to be acceptable. Accepting, modifying or rejecting development proposals in and adjacent to natural areas will take place after the EIS is completed and submitted. In general, the natural areas of concern to the Province, County, and local municipality are those designated as natural heritage features in the Official Plan. Other natural heritage features not specifically identified may be identified as also requiring an EIS.

3.0 When is an Environmental Impact Study Required

Section 4.3.9 of the County of Bruce Official Plan states that:

> *In order to achieve County objectives for the protection of the natural environment, development proponents shall be required to prepare an EIS for any proposal that is:*
>
> *a) in, or within 120 metres of, a provincially significant wetland;*
> *b) in, or within 60 metres of, a locally significant wetland;*
> *c) in, or within 120 metres of, the habitat of threatened or endangered species;*
> *d) in, or within 50 metres of, a significant woodland, significant valleyland, significant wildlife habitat, deer wintering areas, Area of Natural and Scientific Interest (ANSI);*
> *e) in, or within 30 metres of, fish habitat;*
> *f) within a 2 year time of travel (WHPA– B) for Wellhead Protection Areas or within a 2 hour time of travel (IPZ-2) for Intake Protection Zones;*
> *g) within areas of karst topography;*
> *regardless if any of the above appear on Schedules to this Plan or are identified by the proponent and/or review agencies.*

The EIS shall be prepared prior to any development approvals and any site alteration (except as may be necessary for the preparation of pre-development studies or surveys) or development. In considering the loss of functions or features, particularly with regard to wetlands and fish habitat, the proponent is also advised to consult with the First Nations to determine potential impacts on resource utilization and other cultural values.

An EIS shall be completed by a qualified professional and consist of:

- *a) a description of the purpose of the undertaking, the duration of impacts to the site, as well as the possible effects of the proposed undertaking;*
- *b) a description and statement of the rationale for:*
  - *i) the undertaking;*
  - *ii) the alternative methods of carrying out the undertaking; and,*
  - *iii) the alternatives to the undertaking.*
- *c) a description of:*
  - *i) the environment that will be affected or that might reasonably be expected to be affected, directly or indirectly;*
  - *ii) the effects that will be caused or that might reasonably be expected to be caused to the environment; and*
  - *iii) the actions that are necessary or that may reasonably be expected to be necessary to prevent, change, mitigate or remedy the effects or the effects that might reasonably be expected upon the environment by the undertaking.*
- *d) an evaluation of the undertaking's advantages and disadvantages.*

The County may allow for the waiving of the requirement for the preparation of an EIS when:

a) a development is subject to a duplicate or similar environmental assessment process; or
b) a development is minor in nature; or
c) the site conditions for a development are such that the preparation of an EIS would serve no useful purpose for the protection of the significant environmental features.

The County may seek outside independent advice as to whether the proposed development is minor in nature OR advice as to whether an EIS would serve any useful purpose OR advice as to the adequacy of a duplicate environmental assessment process.

Notwithstanding the above, other factors or circumstances may trigger the requirement for an EIS including guidelines of the Natural Heritage Reference Manual and/or Significant Wildlife Habitat Technical Guide.

4.0 Pre-Submission Consultation/Scoping a Environmental Impact Study

Prior to undertaking the EIS it is highly recommended that a Terms of Reference (TOR) be developed, as this will chart the direction the Study should take. The TOR for the Study would determine at a minimum the scope and range of issues that would need to be evaluated to the satisfaction of the County, local municipality, Conservation Authorities and interested agencies. As such, the County would like to be consulted very early in the process.

This consultation would facilitate discussion related to identification of issues that must be considered, potential impacts, level of public participation (if considered necessary), a site visit (if considered necessary) and other regulatory requirements. Further it would allow the proponent to be aware of the expectations of the various agencies as well as conversely providing the County with an opportunity to better understand what is being proposed. Ultimately it would also give the County and its partners a better premise on which to evaluate the Study.

Given the number of data gaps with respect to natural heritage in the County, there is an onus on the EIS to provide a comprehensive assessment and consider the full range of potential natural heritage issues at both the site-specific scale and in the broader landscape context.

In cases where there are data gaps and the proposed development is significant (e.g., not a simple lot severance), the Terms of Reference shall err on the side of caution and require studies to verify for the presence of significant natural heritage features and/or functions both within the subject lands and also in the broader landscape context.

The parties developing the Terms of Reference shall be familiar with the available data and also understand the special timing requirements for certain types of ecological assessments. In addition to consideration for all on-site issues, there should also be consideration for local and larger scale natural heritage linkages in the landscape.

NOTE: *While it is preferred that the requirement for an EIS be identified at the time of pre-submission consultation, this does not preclude the potential that the need for an EIS may be identified during the subsequent review of the development application.*

5.0 Peer Review of an Environmental Impact Study /Costs for Peer Review

A Peer Review (an independent scientific review) of the EIS may be required depending upon the scale and nature of the development proposal. Reference should be made to the County of Bruce “Guideline for Peer Review” document.

The proponent should be aware that both the cost of the EIS and a Peer Review is to be borne by the proponent.

6.0 Guideline

If a Site Specific Scoping of a Terms of Reference for the Environmental Impact Study are not developed prior to the undertaking of the study the following minimum information shall be provided:

PART 1 – General Background

6.1 Approach to an EIS

Under the Provincial Policy Statement (PPS, 2005) and the County of Bruce Official Plan, development or site alteration adjacent to (and in some cases within) natural hazard lands and significant natural heritage areas can only occur if an EIS proves to the satisfaction of the County, local municipality and the reviewing agencies that the proposed development will have no negative impacts on the environmental features and associated functions of the subject lands.

It should be acknowledged that any type of site alteration or development is likely to have some impact on the environmental features and associated functions of the subject lands and potentially on adjacent lands.

The EIS should be evaluating, with the best available information and to the best of the consultant's professional opinion: (a) whether or not these impacts are likely to compromise the short and long-term sustainability of the features and associated functions, and (b) if the site development / alteration provides opportunities for enhancing or improving the natural feature and / or functions.

Prior to an assessment of the anticipated impacts of the proposed development, the EIS shall also analyze the existing natural heritage features and functions of the site. This is done in order to understand what natural heritage features/functions are required in order to maintain the existing ecosystem function given that the development may result in changes to the site. This analysis should include a review of linkages between natural features to ensure that life cycles can continue to be completed and that genetic exchanges can occur throughout the landscape.

The EIS shall provide sufficient information to enable an informed decision/recommendation by the agencies, planners and decision makers on whether the proposal meets the intent and policies of the Official Plan(s) and the PPS.

Notably, an EIS is not normally required where new infrastructure subject to the *Planning Act* is authorized under the environmental assessment process (which has its own impact assessment process).

6.2 How the Process Works

The following outlines the basic Steps in the Process:

Step	Task
A	Pre-Submission Consultation between County, local municipality, agencies, and proponent
B	Development of EIS Terms of Reference by proponent consultant
C	Approval of EIS Terms of Reference by County and/or local municipality and agencies
D	Completion of EIS by proponent consultant
E	Submission of EIS to County
F	Review of EIS by County and/or local municipality and agencies. Independent Peer Review may be required
G	Approval of EIS, Approved with Modifications to EIS, Refusal of EIS
H	Submission of Planning Applications (if required) by proponent

PART 2 – Environmental Impact Study Requirements

6.3 Executive Summary

Include a summary that contains a short description of the proposed development, the anticipated effects on the environment and all recommendations.

6.4 Description of Undertaking

The EIS shall clearly state up front: i) what type of site alteration or development is being proposed; ii) the nature of adjacent land uses and their location; and iii) the nature of sub-regional lands uses and their location.

i) Site specific information shall include:

- existing/proposed roads;
- existing/proposed lot lines;
- existing/proposed building envelopes;
- existing/proposed driveways or laneways;
- existing/proposed septic system(s), well(s) or waterline locations;
- existing/proposed land use;
- existing/proposed lot grading, erosion/sediment control and/or stormwater proposals;
- existing/proposed vegetation and enhancement;
- existing/proposed watercourse crossings or alterations;
- proposed timing for construction/development (including phasing, if appropriate).

Reference should also be made to the Submission Requirements on the Development Application for any further site specific information requirements.

ii) Information for adjacent lands (all lands within 120 metres of the development proposal) shall include:

- the existing use or type of development;
- lot lines;
- driveways/laneways;
- roadways;
- watercourses, waterbodies, ditches, swales;
- building envelopes;
- Eco-Site description as per Ecological Land Classification (ELC) for Southern Ontario (Lee et al. 1998) derived from field investigation, background information or air photo interpretation.

iii) Information on the nature of sub-regional lands (all lands within 1 km of the development site) shall include Eco-Site description derived from field investigation, background information or air photo interpretation.

6.5 Policy, Legal and Administrative Framework

This section of the EIS shall describe the policy and legal framework within which the development/project may be implemented. Therefore Federal, Provincial, County, Municipal, Conservation Authority etc. requirements relevant to the proposed development must be highlighted. Regulations, standards and guidelines applicable to the development shall also be referred to.

6.6 Inventory of Existing Conditions (Biophysical Inventory)

This section shall include all the information obtained from various background and secondary sources as well as assessments from remote sensing (i.e., ortho-rectified air photo interpretation) and site-specific field studies. The EIS shall explain and justify the level of investigation undertaken, and also ensure required field studies are undertaken within the appropriate timing windows and that the specific conditions (i.e., dates, methods) for field studies are documented in the EIS.

Background data sources may include:

- current ortho-rectified air photos;
- existing mapping from the conservation authority and/or Ontario Ministry of Natural Resources (OMNR);
- the Ontario Breeding Bird Atlas (OBBA), Ontario Herpetofaunal Atlas, the Ontario Mammal Atlas;
- information obtained from previous studies such as life science inventories, natural areas inventories, local watershed plans, etc.;
- relevant reports prepared for/by other agencies ;
- local naturalists.

Unless specified during the EIS Terms of Reference consultation, the biophysical inventory shall identify, in text and mapping, the following:

- known natural heritage designations within and beyond the site (e.g. Areas of Natural & Scientific Interest (ANSI's), Provincially Significant Wetlands (PSWs), Locally Significant Wetlands (LSWs), Environmentally Sensitive Areas (ESAs), habitats of endangered and threatened species, habitats of significant wildlife, fish habitat);
- natural heritage features i.e., significant woodlands and functions present on the site and within the landscape;
- specific location of boundaries or edges of identified features or functions;
- existing interconnections or corridors with adjacent natural features;
- identification of hazard lands.

For each type of field assessment undertaken the Study shall include:

(1) number, date, time, and weather conditions during surveys;
(2) names of surveyors and qualifications;
(3) a full list species present and estimates of on-site abundance;
(4) the global, national, provincial, regional, and local priority ranks for each species (as appropriate); and
(5) the location of each significant species associated with the appropriate vegetation community (or stream segment), and for Species at Risk (SAR) the location specified in Universal Transverse Mercator (UTM) coordinates.

It is critical that field studies, particularly for breeding birds and breeding amphibians, as well as fish surveys, be undertaken within the appropriate timing window, as specified below.

GEOLOGY & SOILS: A description of the soils, landforms and surficial geology based on a review of available mapping and literature. Topographical information should be provided on constraints mapping. Any feature staking that has been done to date (e.g. staking the top and/or toe of the valley slope) should also be indicated as well as the calculated hazard land limits (e.g. floodplain analysis, geotechnical review of slope stability and watercourse erosion, meander belt width analysis, etc.).

HYDROLOGY/HYDROGEOLOGY: Identify any hydrological or hydrogeological resources and issues, including surface water features, recharge/discharge zones, groundwater quality and quantity, groundwater elevations and flow directions, connections between groundwater and surface water features. More in-depth information (i.e., boreholes, surface flow measurements) may be required, depending on the scope, scale and issues identified for the proposal.

A pre-development water balance shall be completed for the site in order to assess the quantity and quality of existing water budget components on the site. If there are existing natural heritage features on the subject property, including wetlands, woodlands, and watercourses, then a more detailed feature-based water balance shall be conducted to determine existing flow paths and contributions to these features.

TERRESTRIAL & AQUATIC RESOURCES: A biophysical inventory and analysis of both terrestrial and aquatic communities, physical functions and processes that occur on and beyond the site that will be affected, or that might reasonably be expected to be affected, either directly or indirectly.

Vegetation Communities Survey & Reporting: A survey of vegetation community types shall be undertaken during the main growing season and over three seasons (spring, summer and fall). Community description outlines may be qualitative, but should follow the Ecological Land Classification for Southern Ontario (Lee et al. 1998) to Vegetation Community Type, or contain an equivalent or greater level of structural and floristic detail. The report shall present both a description of the communities and vegetation maps superimposed preferably on an air photo or a base map of scale no greater than 1:5,000 that shows contours and watercourses and the location of natural heritage features.

Any known historical or current management activities (e.g., selective harvesting within a woodlot for firewood) within the natural areas on site shall also be described.

Vascular Plants Survey & Reporting: A complete list of all vascular plants observed on the site shall be assembled. Status of globally, nationally, provincially, regionally and locally rare vascular plant species (using the most current status lists) should be noted and associated with specific ELC communities. The extent of habitat for each species of conservation concern shall be outlined and survey dates should be indicated. Local status lists should include Johnson (1990) and the publication 'Rare and Endangered Species of Grey and Bruce Counties' (2001).

Wildlife Surveys & Reporting: Habitat, den sites, nesting, breeding, migratory stopover, nursery, overwintering areas and other locations shall be identified. Other wildlife functions shall be identified and assessed, and, where appropriate, mapped. Wildlife functions include, but are not limited to, waterfowl staging areas, fish spawning or nursery habitat, hepetofaunal breeding or hibernacula areas, wintering grounds, areas that provide temporary shelter or feeding areas for migratory wildlife, areas that provide critical life cycle habitat, and wildlife corridors.

> Breeding bird surveys shall be carried out between May and July following the Ontario Breeding Bird Atlas Protocol (OBBA, 2001). A minimum of 2 visits to the site is recommended at least 15 days apart during the breeding season. All initial visits are to be completed by the end of the third week of June. In addition to the general requirements for reporting laid out above, reports with breeding bird surveys should include a full list of bird species present and on-site abundance and an annotated assessment of confirmed, probable or possible breeding birds (based on breeding codes) and the number of territories.
>
> Herpetofaunal Surveys: Salamander surveys may require agency approval. A frog and toad survey shall be carried out according to either the Marsh Monitoring Protocol or the North American Amphibian Protocol. Surveys for snakes and turtles may be incidental to other surveys (i.e., searches under debris and searches of basking sites early in the season). At three surveys shall be conducted in spring at least 15 days apart in order to capture the full range of possible amphibians using the site. The first survey should generally occur between April 15 and April 30, the second between May 15 and May 30 and the third survey should occur between June 15 and June 30. In addition to the general requirements for reporting laid out above, reports with herpetofaunal surveys should include specific notes on the weather encountered during surveys.

Aquatic Communities & Habitats Survey & Reporting: Ideally assessments should be conducted at a time when water is present and when fish may be using these streams for spawning purposes. Aquatic surveys should follow the Ontario Stream Assessment Protocol (OSAP). A scientific collector's permit must be obtained from OMNR for most surveys.

The technical information may include: fisheries and/or watershed management plan objectives; fisheries habitat inventory, fish habitat assessment and stream analysis, fish community and habitat assessment requirements for ephemeral streams. Ideally, assessments should be conducted in May or early June to document if water is present at a time when fish may be using these streams for spawning purposes.

Fish must be identified to species level. Where pike/muskellunge may use a stream, assessments may also be required as soon as ice is out (usually early April). Assessments may also be undertaken at other times of the year as project limitations dictate but ideally are coupled with additional observations in other seasons.

Assessments should identify current functions of the channel as fish habitat and make a determination of the potential for harmful alteration, disruption or destruction (HADD) (as per Section 35(1) of the *Fisheries Act*) for the works under consideration.

In addition to the general requirements for reporting laid out above, reports with aquatic surveys should include the locations and abundance of any observed spawning redds and relevant species, the length of surveyed site and an indication of the catch per unit effort; and a description and analysis of the existing habitat and any restoration or enhancement opportunities.

Benthic Surveys shall follow a defined quantitative protocol as outlined in OSAP, the Ontario Benthic Biomonitoring Network (OBBN) and/or Biomap (Biological Monitoring and Assessment Program). Regardless of the protocol, organisms must be identified to the lowest practical taxonomic level.

6.7 Assessment of Existing Conditions

This section shall include an analysis of the inter-relationship, sensitivity and significance of the biophysical information collected as per Section 10.0 'Inventory of Existing Conditions'. The Assessment shall provide an overview of the existing ecosystem both within the subject site and as it relates to the larger local and regional ecosystem. For example, the linkages/inter-dependencies between features, such as between the groundwater and vegetation communities or the groundwater and surface water relationships shall be described. The investigation of the existing features shall extend beyond the subject site and include adjacent areas.

NOTE: In cases where permission from adjacent landowners for access to lands is refused, the EIS shall document the method by which data was collected without entry onto a property (e.g. orthophotos, previous studies etc.).

When analyzing the features and their inter-relationships, reference shall be made to the PPS when determining 'significance'. In addition, the analysis shall include all natural heritage features identified through any local municipal Natural Heritage System (NHS) Study and/or County NHS (either mapping or through policy and related criteria and/or guidelines). The Natural Heritage Reference Manual and Significant Wildlife Technical Guide or their successors should also be consulted when analyzing natural heritage features and functions.

The Assessment should also refer to the most current lists from: Species at Risk in Ontario (SARO), the Committee on the Status of Endangered Wildlife in Canada (COSEWIC), Natural Heritage Information Centre (NHIC) records, species of conservation concern lists, and any local / regional lists such as Johnson (1990), Oldham (1993) and 'Rare and Endangered Species of Grey and Bruce Counties' (2001).

6.8 Impact Assessment

The impact assessment shall identify specifically, in writing and with maps as appropriate:

- the extent of the proposed vegetation removal, and the size and types of vegetation communities being removed (i.e., direct impacts);
- activities associated with the proposal that are expected to have environmental impacts (e.g., work on stream banks, tree-cutting, earth-moving, excavation and post-construction activities);
- surrounding natural heritage features or areas, and potential impacts to those;
- other features as requested through the EIS pre-submission consultation;
- a site plan (if appropriate) showing:
    - the proposed building envelope(s);
    - septic areas and/or proposed stormwater management (if required);

- proposed infrastructure such as driveways, roads or parking lots.

While the mapping and main discussion shall focus on the recommended or preferred plan, the EIS shall also include discussion of alternative forms that the development might take.

The impact assessment shall describe the significance of any negative or positive effects, both short and long-term, as well as on-site and off-site. The assessment should discuss:

- direct on-site effects (*i.e.*, direct loss of feature or habitat);
- description of the nature, extent and duration of potential impacts to the site, adjacent lands and potential cumulative effects;
- impacts on areas identified as part of a local Natural Heritage System, including ecological linkages and corridors;
- effects on surface drainage systems (such as ponding, erosion, changes in volume of surface runoff, changes in water quality, timing and intensity of surface flow, associated impacts to natural features and functions, pre- to post-development water balance changes);
- effects on groundwater (such as reduced surface water recharge to groundwater, changes in groundwater contribution to natural features, impedance of groundwater movement, impacts to groundwater discharge areas, construction-related impacts to aquifer integrity, groundwater contamination, and redirection of groundwater flow);
- effects on the aquatic and fish habitats;
- effects on adjacent areas, including transported effects such as sedimentation;
- effects on the key characteristics of the natural area including loss of habitat, change in habitat, edge effects and impacts to sensitive species or communities;
- effects on local connectivity, and fragmentation and isolation of habitat;
- effects of occupancy (*i.e.*, increased disturbance and indirect impact from increased access, pets, lighting, noise, encroachment, etc.);
- effects on the use of the natural heritage feature, function, or area by people (e.g., recreational or educational uses).

Furthermore, a post-development feature-based water balance shall be required for woodlots, wetlands and watercourses. The post-development scenario shall be compared to the existing condition and mitigation measures will be required in order to maintain existing flow regimes on a monthly basis for both groundwater and surface water.

An explanation of the methods used to determine the effects on the environment must be included.

6.9 Impact Avoidance, Impact Mitigation, Proposed Enhancement of Existing Feature

The avoidance of negative impacts on natural heritage should always be selected over an enhancement or mitigation measure where possible. Measures to enhance the natural heritage feature or function should also be explored. Ways of avoiding negative impacts for both the proposed development, and the identified alternatives to the proposal, must be listed and evaluated. Where negative impacts are unavoidable, a range of mitigating measures to reduce or minimize impacts shall be evaluated. In some cases, opportunities for enhancement can be identified even in the absence of related impacts.

The Study shall include, but is not limited to:

- a description of the municipal requirements, standards, such as setbacks that will effect the development proposal and could impact the ability to maintain appropriate buffers, etc.;
- a preliminary grading plan indicating both existing and proposed grades for services and building envelopes that demonstrates grading can be accommodated without impacts to natural features;
- an evaluation of as many feasible mitigating measures as possible;
- a detailed description of the proposed mitigating measures, and their anticipated benefit;
- the extent of any remaining impacts discussed;
- Identification of opportunities for the enhancement of the natural heritage feature, function, or area resulting from positive effects.

If the impacts cannot be mitigated, then the form of development that is proposed may need to be revised in order to make the desired use more compatible. It is possible however, that the area may be so ecologically sensitive that no form of development is compatible.

6.10 Monitoring Requirements

Monitoring enables planning agencies, through development agreements, to require subsequent changes to site conditions if the environmental effects are found to exceed predicted effects or targets, or if there are identifiable negative effects that were not anticipated or mitigated for.

Where mitigation is achieved through avoidance of negative impacts, a simplified monitoring plan to ascertain the success of the project is all that may be required. In these situations, the predicted net effects after mitigation may be negligible, and only the assumptions need to be tested. However, where mitigation is achieved by methods or measures to minimize but not to eliminate environmental effects, the predicted net effects after mitigation will be described and a monitoring plan designed to measure those effects may be required.

The Natural Heritage Reference Manual produced by the Ministry of Natural Resources (OMNR 1999) states that monitoring may be required where: (1) the large scale of a development or the sensitivity of the key functions are such that effects may be difficult to predict and/or are relatively untested or unproven in the field; (2) the mitigation technology proposed is not proven in Ontario; or (3) there are some long-term operations associated with a development that could facilitate some future or ongoing refinement to the mitigation strategy.

Depending on specific circumstances, monitoring may be required in pre-construction, construction /operation and post construction periods. Details of the monitoring program will be specific to the development proposal and will be determined through review of the development application and the EIS.

It may be determined at the EIS pre-submission consultation that a monitoring plan may be needed to measure the proponent's compliance to implement mitigating measures, and the adequacy of the mitigation measures. If a monitoring plan is requested, the proponent must include an outline of how the mitigating measure will be monitored.

6.11 Recommendations

The EIS shall describe preferred methods or measures to avoid or mitigate any negative impacts, and suggest positive changes and enhancements to the natural heritage of both the site itself and the general area. The recommendations must also state the preferred alternative proposal and discuss why it is the best alternative. The onus shall be on the proponent to demonstrate how over the long term any mitigative measures proposed are to be implemented. Modifications to the original proposal to achieve the preferred mitigating measures and enhancement should be outlined. Such modifications include:

- modification to the concept plan or site plan
- construction requirement or constraint
- an integral component of detailed designs or site plans, such as surface water/stormwater management plan, erosion control plan, tree protection plan, rehabilitation/landscape management plan, or wildlife management plan
- appropriate buffers/setbacks
- other environmental protection measures.

The EIS will reach a conclusion on the significance of impacts of the proposal, and the alternative proposal, with and without the implementation of the proposed mitigation measures.

6.12 References

The Study shall include a section on all Literature Cited.

6.13 Appendices

Appendices attached to the back of the Study shall include:

- People contacted during the Study, or referenced in the Study;
- Qualifications of Study team members;
- All background data collected including filed collection records, flora and fauna species lists by area and by date of inventory, borehole/water level reading data, flow measurements, water quality data sheets, calculations etc.;
- A copy of the study Terms of Reference or letter to the proponent from the Conservation Authority or County planner that summarizes the scope of the EIS.

7.0 References

Bruce-Grey Plant Committee (Owen Sound Field Naturalists). 2001. Rare and Endangered Species of Grey & Bruce Counties. Owen Sound: Stan Brown Printers Limited. ISBN 0-9680279-4-6

County of Bruce Official Plan. 1997. Approved by Minister of Municipal Affairs September 1998. Approved by the Ontario Municipal Board November 1999.

Johnson, J. 1990. Vascular flora of three regions comprising Bruce and Grey Counties, Ontario with emphasis on rare taxa. Ontario Ministry of Natural Resources.

Lee, H., W.D. Bakowsky, J.L. Riley, J. Bowles, M. Puddister, P. Ulrig 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.

Manual of Implementation Guidelines for the Wetlands Policy Statement. November 1992. Ontario Ministry of Natural Resources/Ontario Ministry of Municipal Affairs.

OMNR, June 1999. Natural Heritage Reference Manual, For Policy 2.3 of the Provincial Policy Statement. Ontario Ministry of Natural Resources.

OMNR. 2000. Significant Wildlife Habitat Technical Guidelines. Ontario Ministry of Natural Resources.

Province of Ontario. 2005. Provincial Policy Statement. Ministry of Municipal Affairs and Housing. Toronto.

Stephanie Casutt

From: Rhodes-Munk, Judy (MNRF) [Judy.Rhodes-Munk@ontario.ca]
Sent: 06-20-2016 11:00
To: Stephanie Casutt
Cc: Watt, Rick (MNRF)
Subject: RE: Terms of Reference for Craigleith Property EIS

Hello Stephanie:

Thank you for consulting with the NEC with regard to the Terms of Reference for the EIS being prepared for the Craigleith property at 161 and 208 Lakeshore Rd.

The Niagara Escarpment Plan (NEP) does not permit development in identified habitat of endangered (regulated) plant or animal species (2.8.1). The NEP states that development shall be designed so as to minimize the impact upon wildlife habitat, in particular habitats of endangered (not regulated), rare, special concern, and threatened plant or animal species, as identified by on-site evaluation (2.8.2). You have noted numerous surveys that will be completed. I suggest that the property also be assessed for Barn Swallow habitat (buildings, culverts) as it is a Threatened species listed on the NHIC website for the area.

The Grey County Official Plan identifies the wooded areas on the property as Significant Woodlands so the impact on the woodlands should be assessed. The objective of the Wooded Areas Development Criteria of the NEP (2.7) is to ensure that new development should preserve as much as possible of the wooded areas. Part 2.7.3 requires that existing tree cover or other stabilizing vegetation will be maintained on slopes in excess of 25%.

The NEP contains policies to ensure that new development does not have a negative impact on water quality or quantity (2.6). Development shall locate outside wetlands (2.6.10). We will be interested in the boundaries of any wetland communities identified through ELC. Appropriate setbacks from wetland and aquatic features should be identified.

Slopes greater than 25% should be identified as a constraint. The NEP (2.5.5) does not permit structures of any kind on slopes in excess of 25%. Appropriate setbacks should be identified from the brow and toe of the slope (2.5.2) and vegetation protected on the slope.

Feel free to contact me if you have any questions during the preparation of the EIS.

Judy Rhodes-Munk
Planner
Niagara Escarpment Commission
99 King Street East, PO Box 308
Thornbury, ON N0H 2P0
Ph 519-599-3464
Fx 519-599-6326
www.escarpment.org

"To enable us to serve you better, please call ahead to make an appointment."

From: Stephanie Casutt [mailto:scasutt@azimuthenvironmental.com]
Sent: May 30, 2016 2:42 PM
To: Rhodes-Munk, Judy (MNRF)
Subject: Terms of Reference for Craigleith Property EIS

Hello Judy,

Azimuth Environmental Consulting (Azimuth) has been retained to complete an Environmental Impact Study (EIS) for a property located at 161 Lakeshore Rd and the adjacent property at 208 Lakeshore Rd (please see attached mapping). The property is of a mixed-use nature, with evidence of past agricultural practices. Forest communities exist along the watercourse and the slope that runs east-west throughout the property, where 13 Butternut have been identified. A pond of approximately 0.5ha in size is located in the eastern portion of the property, where amphibian breeding habitat has been confirmed during spring 2016 field investigations.

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

- Contact the Ontario Ministry of Natural Resources to acquire current background information regarding Species at Risk (SAR);
- Conduct field surveys to document existing natural heritage features, functions, and species:
    - Three-season vegetation surveys;
    - Two dawn breeding bird surveys;
    - Two evening bird surveys (Whip-poor-will, Common Nighthawk);
    - Five turtle surveys using the MNRF's Blanding's Turtle Basking Survey protocol;
    - Three amphibian surveys;
    - Visual survey of potential bat roosting habitat within buildings.

- Conduct Butternut Health Assessment for the 13 identified Butternut;
- Evaluate vegetation communities using protocols of the Ecological Land Classification for Southern Ontario (Lee *et al*. 1998. Ecological land classification for southern Ontario: first approximation and its applications. SCSS Field Guide FG-02);
- Conduct a SAR screening assessment in accordance with Ontario's *Endangered Species Act*;
- Document aquatic features and fish habitat on the property;
- Prepare aerial photography based mapping of the environmental features identified on and adjacent to the property showing areas of environmental constraint to development;
- Overlay the proposed development plan on environmental features/constraints mapping to illustrate potential direct and indirect impacts;
- Assess the environmental impacts of the proposed development plan and provide recommendations for mitigation; and
- Prepare an EIS report describing the impact assessment and identifying environmental policy and regulation conformity of the proposed development.

Based on regulation mapping, the entire property falls within the Escarpment Recreational Area as per the Niagara Escarpment Plan (NEP). Based on the information provided to you (e.g. Terms of References, site mapping), at this time, we are asking that NEC provide comment on the proposed TOR for the abovementioned property. Please do not hesitate to contact me to discuss further.

Regards,

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: 04-25-2016 14:52
To: 'jodi.benvenuti@ontario.ca'
Cc: Brad Baker; Melissa Fuller
Subject: MNRF SAR Information Request
Attachments: 15-289 MNRF SAR Information Request.pdf; Species Occurence_OBBA_NHIC.pdf; Butternut_15-289.pdf; Grey GIS Fogel Craigleith Aerial.pdf

Good Afternoon Ms. Benvenuti,

Azimuth has been retained to complete and Environmental Impact Study (EIS) for a property located at 161 Lakeshore Road in Craigleith (see map attached).

I have attached a letter requesting information regarding Species at Risk in the area. I have listed the species we are currently considering in the study, and would appreciate feedback on the matter.

If you have any questions regarding this project please do not hesitate to contact us.

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

AZIMUTH ENVIRONMENTAL CONSULTING, INC.
Environmental Assessments & Approvals

April 25, 2016 AEC 15-289

Ministry of Natural Resources
Midhurst District
2284 Nursery Road
Midhurst, Ontario
L0L 1X0

Attention: Jodi Benvenuti, Management Biologist

RE: Species at Risk Information Request for Property Located at 161 Lakeshore Road, Lot 21 Concession 2, in the Town of Blue Mountains, Grey County

Dear Ms. Benvenuti:

Azimuth Environmental Consulting (Azimuth) has been retained by Parkbridge Lifestyle Communities Inc. to prepare a Scoped Environmental Impact Study (EIS) for a proposed residential development at the above noted site (please see attached mapping). The purpose of this letter is to request additional information regarding Species at Risk (SAR) and any other sensitive areas associated with the study area, and to request any background information that may be relevant to our study.

EXISTING CONDITIONS

Grey County's Official Plan (OP), identifies the entire property as "Recreational', with designated Significant Woodlands documented under Appendix B (Constraints Mapping). Similarly, the Town of the Blue Mountains OP designates the property as "Residential Recreational Area" with Hazard Lands identified throughout. Air photo interpretation indicates that current land use consists mainly of agricultural uses along the north end. The southern portion of the property contains mainly fallow fields growing in with Staghorn sumac and other early successional species. Mixed deciduous forests are present along the slopes and the water course. The watercourse runs south-north through the property. Hedge rows border the fields throughout the property.

Based on available sources there are no PSW/ANSIs within or directly adjacent to the study area (closest PSW/ANSI feature is the Silver Creek Wetland Complex located approximately 800 meters east of the site).

A small pond feature (0.5ha, approximately) is located in the east side of the property. Based on the potential habitat for SAR turtles, Azimuth will be conducting turtle surveys following the Ontario Ministry of Natural Resources survey protocols for a restricted turtle species and Blanding's Turtles.

BACKGROUND SAR DATA

A search of the Ontario Breeding Bird Atlas has been completed. Square 17NK52 was queried and it was determined that several SAR bird species have been recorded demonstrating probable or confirmed breeding evidence within the 10 x 10 km data square, including Chimney Swift, Eastern Wood-pewee, Whip-poor-will, Common Nighthawk, Bank Swallow, Barn Swallow, Wood Thrush, Canada Warbler, Bobolink, and Eastern Meadowlark.

Available information from the Natural Heritage Information Centre (NHIC) indicates that SAR recorded within the 1 km of the study area includes Barn Swallow (Threatened), and Snapping Turtle (Special Concern).

In addition to external sources, Azimuth carried out an initial site survey where we documented the presence of 13 Butternut trees (see attached mapping). The survey was conducted by a certified Butternut Health Assessor who will also be carrying out health assessments for all identified Butternut.

In summary, based on information reviewed , the following are being considered in our assessment:

- Mammals: Little Brown Myotis (*Myotis lucifugus*), Northern Myotis (*Myotis septrentionalis*), and Eastern Small-footed Bat (*Myotis leibii*);
- Reptiles and Amphibians: Blanding's Turtle (*Emydoidea blandingii*), Eastern Hog-nosed Snake (*Heterodon platirhinos*), Eastern Musk Turtle (*Sternotherus odoratus*), Eastern Ribbonsnake (*Thamnophis sauritus*), Milksnake (*Lampropeltis triangulum*), and Snapping Turtle (*Chelydra serpentina*);
- Birds: Barn Swallow (*Hirundo rustica*), Bank Swallow (*Riparia riparia*), Bobolink (*Doliichonyx oryzivorus*), Canada Warbler (*Wilsonia carolinus*), Cerulean Warbler (*Setophaga cerulea*), Chimney Swift (*Chaetura pelagica*), Common Nighthawk (*Chordeiles minor*), Eastern Wood-pewee (*Contopus virens*), Eastern Meadowlark (*Sturnella magna*), Least Bittern (*Ixobrychus exilis*), Olive-sided fly catcher (*Contopus cooperi*), Wood Thrush (*Hylocichla mustelina*), and Whip-poor-will (*Caprimulgus vociferus*)
- Plants and Lichens: Butternut (*Juglans cinerea*); and,
- Insects: Monarch Butterfly (*Danaus plexippus*).

If the District's files contain additional or contradictory information, we would appreciate your input at this time.

It is generally our intention to append this correspondence in the resulting EIS. If restricted species occur in the area and the MNRF determines that these need to be considered in our review, please provide two copies of the response - one with the species name replaced with (Restricted Species) for inclusion within Azimuth's natural heritage review report, and the other retaining the identity of the species for Azimuth's internal use only.

Thank you very much for your assistance in this matter. If you have any questions regarding this project please do not hesitate to contact us.

Yours truly,

AZIMUTH ENVIRONMENTAL CONSULTING, INC.

Stephanie Casutt H.B.ES.
Terrestrial Ecologist

Attach: Study Area – 161 Lakeshore Road, Lot 21 Concession 2
Ontario Breeding Bird Atlas Data Summary (17NK52), NHIC 2016
Butternut Mapping

APPENDIX E

Butternut Health Assessment Report

Enclosures:

1. Information from the Ministry of Natural Resources and Forestry about Butternut and the *Endangered Species Act, 2007*
2. Butternut Health Assessor's Report
3. Original data forms
4. Electronic and printed copies of the Excel data spreadsheet (BHA Tree Analysis)

Ministry of Natural Resources and Forestry

Species At Risk
P.O. Box 7000, 300 Water Street
Peterborough ON K9J 8M5

Ministère des Richesses naturelles et des Forêts

Espèces en péril
C.P. 7000, 300, rue Water
Peterborough ON K9J 8M5

The enclosed Butternut Health Assessor's Report documents the results of the Butternut health assessment that was conducted by the designated Butternut Health Assessor (BHA) identified in the top section of the report. If there are other Butternut trees (of any size or age) at the site that may be affected by the activity and they are not identified in the enclosed BHA Report, they too must be assessed by a designated BHA.

Butternut is listed as an endangered species on the Species at Risk in Ontario List, and as such, it is protected under the *Endangered Species Act, 2007* (ESA) from being killed, harmed, or removed. If you are planning to undertake an activity that may affect Butternut, you may be eligible to follow the requirements set out in section 23.7 of Ontario Regulation 242/08 under the ESA, or you may need to seek an authorization under the ESA (e.g., a permit).

Please visit e-laws at the link provided below for the legal requirements of eligible activities under section 23.7 of Ontario Regulation 242/08 and conditions that must be fulfilled. Information about Butternut is also available at: http://www.ontario.ca/environment-and-energy/butternut-trees-your-property.

If you are eligible to kill, harm or take Butternut under section 23.7 of the regulation, your first step is to submit the BHA Report and the original data forms enclosed in this package to the local Ministry of Natural Resources and Forestry (MNRF) District Manager. Note that MNRF cannot accept photocopies or scanned electronic copies of the data forms.

Note regarding changes:

If the enclosed BHA Report does not identify which Butternut tree(s) are proposed to be killed, harmed, or taken in Table 1 (i.e., if "unknown" is indicated in the second last column of Table 1), or, if the information in the last two columns of Table 1 has changed since the date this BHA Report was produced, **do not make any edits to the BHA Report**. Instead, please attach a cover letter that identifies which Butternut tree(s) are proposed to be killed, harmed, or taken (by referencing the tree identification numbers) when you submit the enclosed BHA Report to the local MNRF District Manager.

The BHA Report must be submitted at least 30 days prior to registering an eligible activity to kill, harm, or remove a Butternut tree. During this 30 day period, no Butternut trees (of any category) may be killed, harmed, or removed, and MNRF may contact you for an opportunity to examine the trees. If MNRF chooses to examine the trees, a representative of MNRF will contact you using the information you supplied when you submitted the BHA Report.

If you are eligible to follow the rules in regulation under section 23.7, you may register your activity using the "Notice of Butternut Impact" form on the MNRF Registry **after the 30 day period has elapsed**.

If you are **not** eligible to follow the rules in regulation under section 23.7, please contact the local MNRF district office to determine whether you will need to seek an authorization (e.g., a permit). A link to the directory of MNRF offices is provided below.

Note that municipal by-laws and legislation other than the ESA may also be applicable to the removal or harming of trees.

Please retain this information and a copy of the BHA Report (including copies of all data forms) for your records, along with any other documentation you may receive from MNRF should an examination of the trees occur. If you have any questions, please contact your local MNRF district office.

Links:

Endangered Species Act, 2007:
http://www.e-laws.gov.on.ca/html/statutes/english/elaws_statutes_07e06_e.htm

Ontario Regulation 242/08 (refer to section 23.7):
http://www.e-laws.gov.on.ca/html/regs/english/elaws_regs_080242_e.htm

MNRF Office Locations:
https://www.ontario.ca/government/ministry-natural-resources-and-forestry-regional-and-district-offices

Butternut Health Assessor's Report Number: 172-001

Drew West – BHA #172
642 Welham Road
Barrie, Ontario
L4N 9A1
(705) 721-8451
drew@azimuthenvironmental.com

Parkbridge Lifesyle Communities Inc.
85 Theme Park Drive
Wasaga Beach, Ontario
L9Z 1X7
(705) 429-8630
rwagner@parkbridge.com

Site location: 161 Lakeshore Drive, Craigleith, Ontario

Date(s) of Butternut health assessment: July 5, 2016
Date BHA Report prepared: August 29, 2016

Map datum used: x☐ NAD83 ☐ WGS84

Total number of trees assessed in this BHA Report: 14

The assessed trees were numbered on site using white paint. The numbers at the site correspond to the tree numbers referenced in this report.

This BHA Report includes the following tables:

- Table 1: Butternut Trees Assessed
- Table 2: Trees Determined by BHA to be Butternut Hybrids
- Table 3: Summary of Assessment Results

Table 1: Butternut Trees Assessed

Tree #	UTM coordinates	Category[1] *(1, 2, or 3[2])*	dbh[3] (cm)	Cultivated? *(Y/N)*	Proposed to be: *(enter one: unknown[4], killed, harmed or taken)*	If tree is proposed to be killed, harmed, or taken, indicate reason tree is proposed to be killed, harmed or taken:
1	553781, 4930041	2	53	N	Unknown	

[1] The extent to which the tree is affected by Butternut Canker is presented in the Excel document titled, "BHA Tree Analysis" that accompanies this BHA Report.
[2] Category 3 trees are not eligible to be killed, harmed or taken under section 23.7 of Ontario Regulation 242/08.
[3] dbh: diameter at breast height, rounded to nearest cm (if tree is shorter than breast height, enter zero)
[4] In this column, "unknown" indicates that at the time of assessment, there are no proposals to kill, harm or take this tree that are known to the BHA.

Tree #	UTM coordinates	Category[1] (1, 2, or 3[2])	dbh[3] (cm)	Cultivated? (Y/N)	Proposed to be: (enter one: unknown[4], killed, harmed or taken)	If tree is proposed to be killed, harmed, or taken, indicate reason tree is proposed to be killed, harmed or taken:
2	553790, 4930069	2	47	N	Unknown	
3	553863, 4929950	1	42	N	Unknown	
4	553934, 4929880	2	90	N	Unknown	
5	554029, 4929856	2	45	N	Unknown	
6	554037, 4929858	2	47	N	Unknown	
7	554049, 4929858	2	24	N	Unknown	
8	554071, 4929845	2	31	N	Unknown	
9	554089, 4929862	2	42	N	Unknown	
10	554105, 4929850	2	25	N	Unknown	
11	554109, 4929839	2	30	N	Unknown	
12	554169, 4929784	2	53	N	Unknown	
13	554196, 4929792	1	22	N	Unknown	
14	554097, 4929788	2	45	N	Unknown	

Table 2: Trees Determined by BHA to be Butternut Hybrids

Tree #	UTM coordinates	Method used (genetic testing or field identification):
	N/A	

Table 3: Summary of Assessment Results

Result:	Total #:	Important information for persons planning activities that may affect Butternut:
Category 1	2	• A Category 1 tree is one that is affected by butternut canker to such an advanced degree that retaining the tree would not support the protection or recovery of butternut in the area in which the tree is located; and is considered “non-retainable”. • During the 30 day period that follows your submission of this BHA Report to the MNRF District Manager, no Butternut trees (of Category 1, 2, or 3) may be killed, harmed, or taken, and MNRF may contact you for an opportunity to examine the trees. • Category 1 trees may be killed, harmed or taken **after** the 30 day period that follows submission of this BHA Report to the MNRF District Manager, unless the results of an MNRF examination indicate that the assessment has not been conducted in accordance with the document entitled “Butternut Assessment Guidelines: Assessment of Butternut Tree Health for the Purposes of the *Endangered Species Act, 2007*”.
Category 2	12	• A Category 2 tree is one that is not affected by Butternut Canker, or is affected by Butternut Canker but the degree to which it is affected is not too advanced and retaining the tree could support the protection or recovery of butternut in the area in which the tree is located, and is considered “retainable”. • During the 30 day period that follows your submission of this BHA Report to the MNRF District Manager, no Butternut trees (of Category 1, 2, or 3) may be killed, harmed, or taken, and MNRF may contact you for an opportunity to examine the trees. • Activities that may kill, harm or take up to a **maximum of ten (10)** Category 2 trees may be eligible to follow the rules in section 23.7 of Ontario Regulation 242/08, in accordance with the conditions and requirements set out in the regulation. • Refer to e-Laws for the legal requirements of eligible activities under section 23.7 of Ontario Regulation 242/08 and conditions that must be fulfilled: http://www.e-laws.gov.on.ca/html/regs/english/elaws_regs_080242_e.htm • Activities that may kill, harm or take more than ten (10) Category 2 trees are not eligible to follow the rules in section 23.7 of Ontario Regulation 242/08. Contact the local MNRF district office for information on how to seek an ESA authorization (e.g., a permit) or consider an alternative that would be eligible for the regulation.
Category 3	0	• A Category 3 tree is one that may be useful in determining sources of resistance to Butternut Canker, and is considered “archivable”. • Category 3 trees are not eligible to be killed, harmed or taken under section 23.7 of Ontario Regulation 242/08. • Contact the local MNRF district office for information on how to seek an ESA authorization, or consider an alternative that will avoid killing, harming or taking any Category 3 trees.
Cultivated	0	• An activity that involves killing, harming, or taking a cultivated Butternut tree that was not required to be planted to fulfill a condition of an ESA permit or a condition of a regulation, may be eligible for the exemption provided by subsection 23.7 (11) of O. Reg. 242/08. • Prior to undertaking the activity, the owner or occupier of the land on which the Butternut is located (or person acting on their behalf) will need to determine whether the exemption for cultivated trees is applicable by determining whether or not the tree was cultivated as a result of the requirements for an exemption under O. Reg. 242/08 or a condition of a permit issued under the ESA. This information can be accessed by contacting the local MNRF district office. • The owner or occupier of the land on which the Butternut is located (or person acting on their behalf) is encouraged to append the details regarding whether the tree was planted to satisfy a requirement (e.g., the permit number or registration number) to this BHA Report for their records.
Hybrid	0	• Hybrid Butternut trees are not protected under the ESA, but their removal may be subject to municipal by-laws and other legislation.

Butternut Health Assessor's Comments:

-Trees 12 and 13 not on property and landowner will not develop within 25 metres of trees.

-Landowner may apply to have trees 5, 6, 14 removed in the future. Site plan may incorporate these trees for retention if possible.

This concludes the summary of the BHA Report. A complete BHA Report must also include:

1. All original (hard copy) data forms (i.e., all completed sets of Form 1 and Form 2), and
2. Electronic and printed copies of the Excel data analysis spreadsheet.

APPENDIX F

NHIC and OBBA Information

[Francais]

Ontario

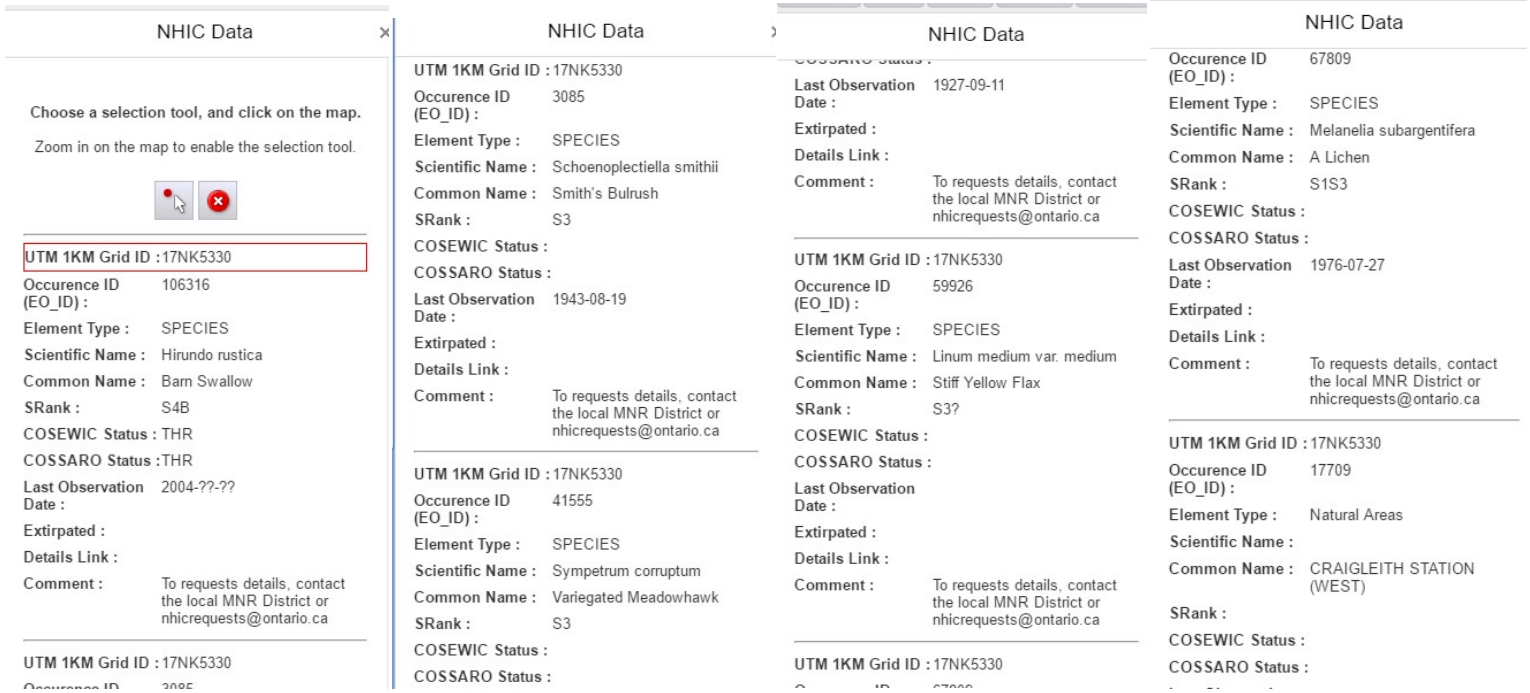
Ministry of Natural Resources and Forestry

Make A Map: Natural Heritage Areas

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

About | Bookmarks | Map Layers | Find Information | NHIC Data | Markup & Printing

NHIC Data | Pan | Zoom In | Zoom Out | Initial View | Previous Extent | Next Extent | Help



NHIC Data

Choose a selection tool, and click on the map.

Zoom in on the map to enable the selection tool.

UTM 1KM Grid ID :	17NK5330
Occurence ID (EO_ID) :	106316
Element Type :	SPECIES
Scientific Name :	Hirundo rustica
Common Name :	Barn Swallow
SRank :	S4B
COSEWIC Status :	THR
COSSARO Status :	THR
Last Observation Date :	2004-??-??
Extirpated :	
Details Link :	
Comment :	To requests details, contact the local MNR District or nhicrequests@ontario.ca

UTM 1KM Grid ID :	17NK5330

NHIC Data

UTM 1KM Grid ID :	17NK5330
Occurence ID (EO_ID) :	3085
Element Type :	SPECIES
Scientific Name :	Schoenoplectiella smithii
Common Name :	Smith's Bulrush
SRank :	S3
COSEWIC Status :	
COSSARO Status :	
Last Observation Date :	1943-08-19
Extirpated :	
Details Link :	
Comment :	To requests details, contact the local MNR District or nhicrequests@ontario.ca

UTM 1KM Grid ID :	17NK5330
Occurence ID (EO_ID) :	41555
Element Type :	SPECIES
Scientific Name :	Sympetrum corruptum
Common Name :	Variegated Meadowhawk
SRank :	S3
COSEWIC Status :	
COSSARO Status :	

NHIC Data

Last Observation Date :	1927-09-11
Extirpated :	
Details Link :	
Comment :	To requests details, contact the local MNR District or nhicrequests@ontario.ca

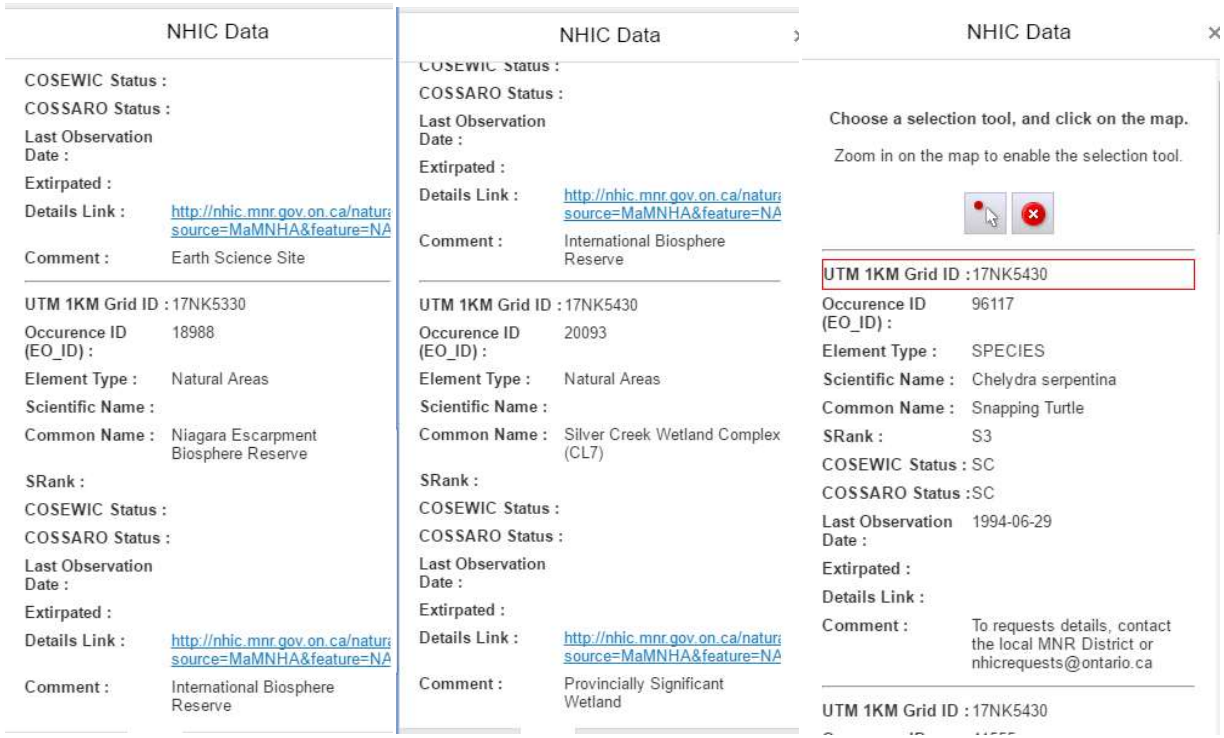
UTM 1KM Grid ID :	17NK5330
Occurence ID (EO_ID) :	59926
Element Type :	SPECIES
Scientific Name :	Linum medium var. medium
Common Name :	Stiff Yellow Flax
SRank :	S3?
COSEWIC Status :	
COSSARO Status :	
Last Observation Date :	
Extirpated :	
Details Link :	
Comment :	To requests details, contact the local MNR District or nhicrequests@ontario.ca

UTM 1KM Grid ID :	17NK5330

NHIC Data

Occurence ID (EO_ID) :	67809
Element Type :	SPECIES
Scientific Name :	Melanelia subargentifera
Common Name :	A Lichen
SRank :	S1S3
COSEWIC Status :	
COSSARO Status :	
Last Observation Date :	1976-07-27
Extirpated :	
Details Link :	
Comment :	To requests details, contact the local MNR District or nhicrequests@ontario.ca

UTM 1KM Grid ID :	17NK5330
Occurence ID (EO_ID) :	17709
Element Type :	Natural Areas
Scientific Name :	
Common Name :	CRAIGLEITH STATION (WEST)
SRank :	
COSEWIC Status :	
COSSARO Status :	

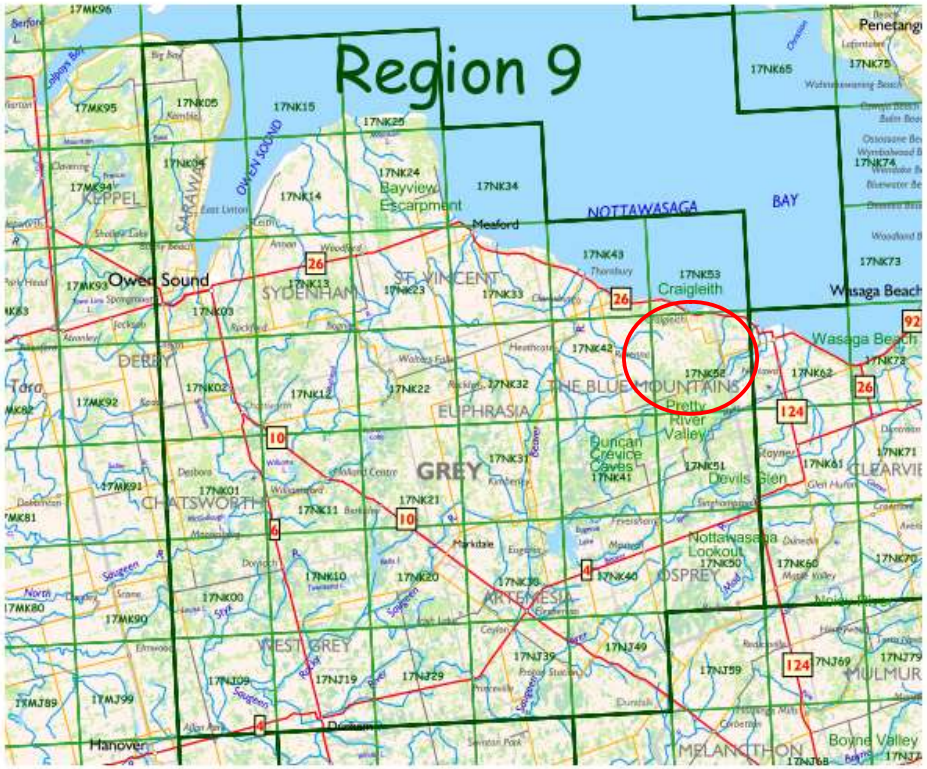

NHIC Data
COSEWIC Status :
COSSARO Status :
Last Observation Date :
Extirpated :
Details Link : http://nhic.mnr.gov.on.ca/natura source=MaMNHA&feature=NA
Comment : Earth Science Site
UTM 1KM Grid ID : 17NK5330
Occurence ID (EO_ID) : 18988
Element Type : Natural Areas
Scientific Name :
Common Name : Niagara Escarpment Biosphere Reserve
SRank :
COSEWIC Status :
COSSARO Status :
Last Observation Date :
Extirpated :
Details Link : http://nhic.mnr.gov.on.ca/natura source=MaMNHA&feature=NA
Comment : International Biosphere Reserve
NHIC Data
COSEWIC Status :
COSSARO Status :
Last Observation Date :
Extirpated :
Details Link : http://nhic.mnr.gov.on.ca/natura source=MaMNHA&feature=NA
Comment : International Biosphere Reserve
UTM 1KM Grid ID : 17NK5430
Occurence ID (EO_ID) : 20093
Element Type : Natural Areas
Scientific Name :
Common Name : Silver Creek Wetland Complex (CL7)
SRank :
COSEWIC Status :
COSSARO Status :
Last Observation Date :
Extirpated :
Details Link : http://nhic.mnr.gov.on.ca/natura source=MaMNHA&feature=NA
Comment : Provincially Significant Wetland
NHIC Data
Choose a selection tool, and click on the map.
Zoom in on the map to enable the selection tool.
UTM 1KM Grid ID : 17NK5430
Occurence ID (EO_ID) : 96117
Element Type : SPECIES
Scientific Name : Chelydra serpentina
Common Name : Snapping Turtle
SRank : S3
COSEWIC Status : SC
COSSARO Status : SC
Last Observation Date : 1994-06-29
Extirpated :
Details Link :
Comment : To requests details, contact the local MNR District or nhicrequests@ontario.ca
UTM 1KM Grid ID : 17NK5430

Ontario Breeding Bird Atlas
2001-2005

GSC Network Peterborough

Ontario

Published December 2000



Square Summary (17NK52)

#species (1st atlas)				#species (2nd atlas)				#hours		#pc done	
poss	prob	conf	total	poss	prob	conf	total	1st	2nd	road	offrd
9	17	78	104	46	34	21	101	96	79	44	6

Region summary (#9: Grey)

#squares	#sq with data		#species		#pc done	target #pc
	1st	2nd	1st	2nd		
36	36	35	165	169	815	450

Target number of point counts in this square: 19 road side, 6 off road (5 in deciduous forest, 1 in mixed forest). Please try to ensure that each off-road station is located such that the entire 100m radius circle is within the prescribed habitat.

SPECIES	Code		%	
	1st	2nd	1st	2nd
Canada Goose	FY	FY	61	97
Wood Duck	FY	P	66	85
Gadwall			8	5
American Wigeon ‡			2	0
American Black Duck	FY		33	11
Mallard	FY	P	97	97
Blue-winged Teal	FY		80	34
Northern Pintail ‡			5	0
Green-winged Teal			0	8
Ring-necked Duck ‡			2	0
Hooded Merganser			25	51
Common Merganser	P		44	51
Red-breast Merganser	FY		19	14
Ruddy Duck †			2	0
Ring-necked Pheasant			16	2
Ruffed Grouse	FY	NE	86	88
Wild Turkey		S	0	85
Common Loon			63	62
Pied-billed Grebe			36	45
American Bittern			47	42
Least Bittern †			8	5
Great Blue Heron §	H		97	80

SPECIES	Code		%	
	1st	2nd	1st	2nd
Cooper's Hawk		H	19	48
Northern Goshawk			22	14
Red-should Hawk †			22	28
Broad-winged Hawk			25	31
Red-tailed Hawk	NE	H	97	100
American Kestrel	FY	H	91	94
Merlin			11	17
Virginia Rail			75	60
Sora	S		44	37
Common Moorhen			13	8
Coot/Moorhen			0	2
Killdeer	NE	A	100	97
Rock Dove	FY	H	94	94
Spotted Sandpiper	NE		100	71
Upland Sandpiper	DD	T	75	40
Common Snipe	NE	S	94	82
American Woodcock	FY	H	97	71
Ring-billed Gull §			2	14
Herring Gull §	AE		30	22
Black Tern † §			5	2
Common Tern ‡§			5	2
Mourning Dove	FY	P	100	100

SPECIES	Code		%	
	1st	2nd	1st	2nd
North Saw-whet Owl			33	14
Common Nighthawk			33	20
Whip-poor-will			25	14
Chimney Swift	P		58	34
Ruby-thr Hummingbird	P	P	88	88
Belted Kingfisher	FY		97	88
Red-headed Woodpecker †	D		52	14
Yellow-bellied Sapsucker	NY	T	94	97
Downy Woodpecker	AE	S	100	91
Hairy Woodpecker	AE	S	94	91
Black-backed Woodpecker ‡			2	0
Northern Flicker	AE	S	100	97
Pileated Woodpecker	P	H	75	82
Olive-sided Flycatcher ‡			5	2
Eastern Wood-Pewee	FY	T	94	97
Yellow-bellied Flycatcher			8	2
Alder Flycatcher	FY	S	72	74
Willow Flycatcher		T	30	42
Least Flycatcher	FY	S	97	97
Eastern Phoebe	P	NY	94	94
Gr Crested Flycatcher	AE	FY	97	97
Eastern Kingbird	AE	NB	100	100

Great Egret †			2	2
Green Heron §	A	H	83	65
Black-crown N.-Heron † §	H		25	5
Turkey Vulture	FY	NY	91	88
Osprey ‡			2	17
Northern Harrier	A		86	74
Sharp-shinned Hawk			33	48

Yellow-billed Cuckoo			30	14
Black/Yell-billed Cuckoo		S	0	31
Black-billed Cuckoo	T	H	69	68
Eastern Screech-Owl	S	S	91	80
Great Horned Owl	FY		97	62
Barred Owl ‡			2	11
Long-eared Owl ‡			2	2

Loggerhead Shrike †			25	0
Yellow-throated Vireo			38	22
Blue-headed Vireo			16	42
Warbling Vireo	FY	T	97	100
Red-eyed Vireo	FY	T	100	100
Blue Jay	FY	FY	100	100
American Crow	FY	FY	100	100

next page >>

Ontario Breeding Bird Atlas - Summary Sheet for Square 17NK52 (page 2 of 2)

SPECIES	Code		%	
	1st	2nd	1st	2nd
Common Raven		P	11	88
Horned Lark	FY	S	83	60
Purple Martin	NY		36	17
Tree Swallow	AE	AE	100	100
North Rgh-wing Swallow	FY	V	80	60
Bank Swallow §	AE	AE	80	62
Cliff Swallow §	NY	H	86	74
Barn Swallow	NY	FY	100	97
Black-capped Chickadee	NY	FY	100	100
Red-breast Nuthatch	P		75	82
White-breast Nuthatch	FY	S	97	91
Brown Creeper	P	S	61	65
House Wren	FY	FY	100	100
Winter Wren	P	S	77	91
Sedge Wren		S	13	22
Marsh Wren			36	22
Golden-crown Kinglet	P	S	16	34

SPECIES	Code		%	
	1st	2nd	1st	2nd
Blue-winged Warbler ‡		S	0	2
Golden-winged Warbler		T	8	31
Blue/Gold-wing Warbler		T	0	11
Brewster's Warbler †		S	0	2
Tennessee Warbler ‡			5	0
Nashville Warbler	FY	S	77	88
Northern Parula ‡			2	2
Yellow Warbler	FY	P	100	100
Chestn-sided Warbler	AE	S	69	88
Magnolia Warbler		S	22	51
Black-thr Blue Warbler	S	P	33	80
Yellow-rumped Warbler	P	S	55	82
Black-thr Green Warbler	S	S	50	94
Blackburnian Warbler		S	25	48
Pine Warbler			16	57
Cerulean Warbler †			2	2
Black-white Warbler	D	S	88	94

SPECIES	Code		%	
	1st	2nd	1st	2nd
Savannah Sparrow	FY	S	91	97
Grasshopper Sparrow			47	60
Henslow's Sparrow †			2	8
Song Sparrow	NE	FY	100	100
Swamp Sparrow	FY	A	86	97
White-throat Sparrow	FY	S	88	91
Dark-eyed Junco	P		19	20
Scarlet Tanager	S	P	77	65
Northern Cardinal	FY	P	75	88
Rose-breast Grosbeak	FY	S	97	97
Indigo Bunting	FY	T	97	94
Bobolink	FY	P	97	97
Red-wing Blackbird	NE	AE	100	97
Eastern Meadowlark	NE	T	100	97
Western Meadowlark	S		11	2
Rusty Blackbird ‡			2	2
Common Grackle	AE	CF	100	100

Blue-gr Gnatcatcher ‡			2	0
Eastern Bluebird		FY	72	91
Veery	FY	T	97	91
Swainson's Thrush			8	0
Hermit Thrush			8	37
Wood Thrush	FY	S	83	88
American Robin	NY	CF	100	100
Gray Catbird	FY	P	100	97
Northern Mockingbird			11	2
Brown Thrasher	FY	T	97	94
European Starling	AE	NY	97	100
Cedar Waxwing	FY	FY	100	100

American Redstart	FY	S	86	97
Ovenbird	CF	P	91	97
North Waterthrush	FY	S	80	82
Louis Waterthrush †	P	A	5	8
Mourning Warbler	FY	S	72	71
Common Yellowthroat	FY	T	100	100
Canada Warbler	S		33	42
Eastern Towhee	FY	S	77	65
Chipping Sparrow	FY	CF	100	100
Clay-colored Sparrow ‡		S	5	31
Field Sparrow	FY	S	94	94
Vesper Sparrow	FY	S	91	80

Brown-head Cowbird	NY	D	100	100
Orchard Oriole ‡		S	5	5
Baltimore Oriole	AE	P	100	97
Purple Finch	FY	S	66	82
House Finch		P	2	77
Pine Siskin			8	8
American Goldfinch	FY	P	100	100
Evening Grosbeak			11	2
House Sparrow	FY	P	94	94

Special Concern

Threatened

Endangered