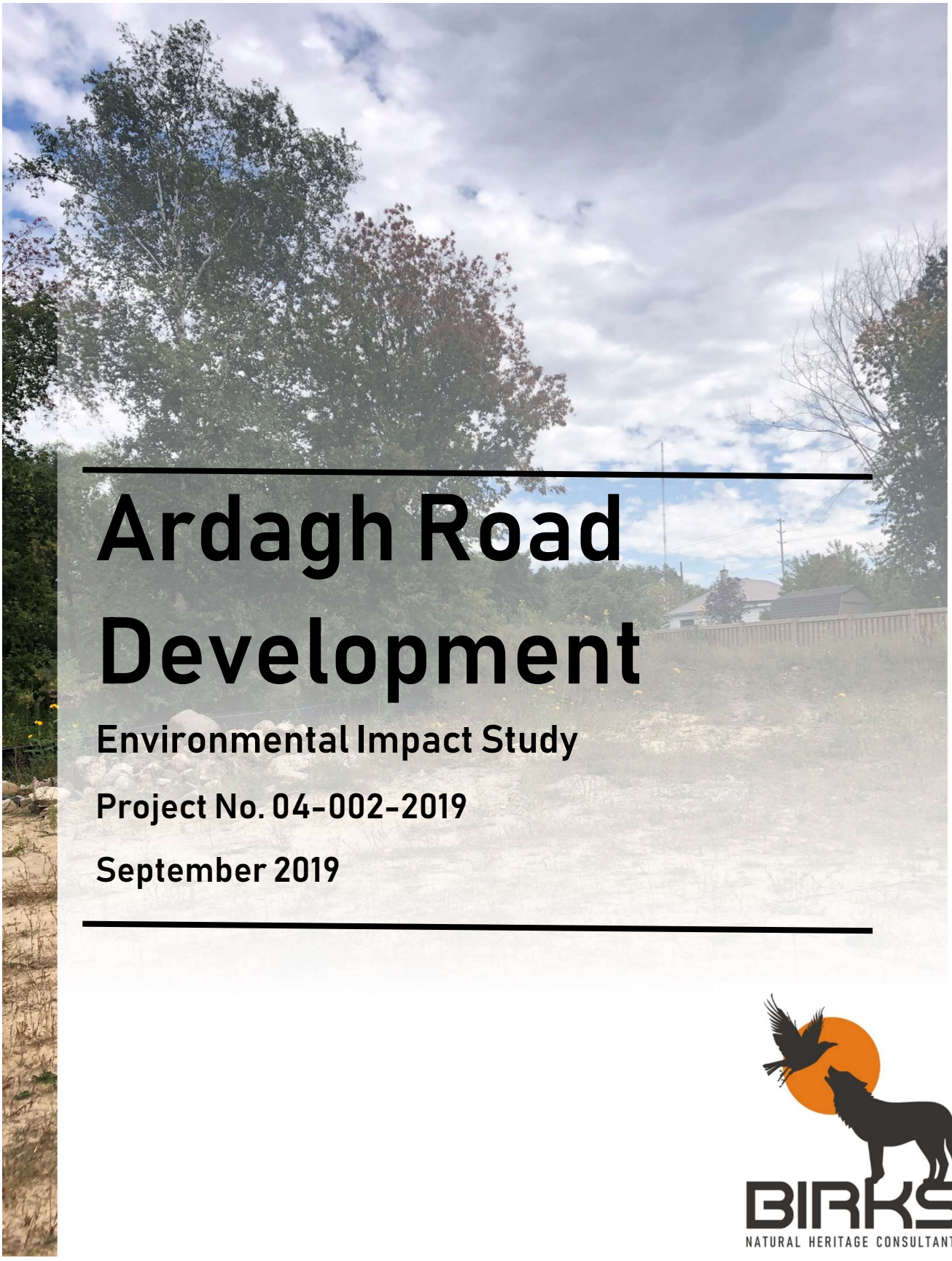


Ardagh Road Development

Environmental Impact Study

Project No. 04-002-2019

September 2019

BIRKS
NATURAL HERITAGE CONSULTANTS

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

23 Herrell Avenue
Barrie, Ontario
L4N 6T5

September 27, 2019

Hedbern Homes
323 Tiffin Street
Barrie, Ontario
L4N 5P4

Attention: Bernie Still

RE: BIRKS NHC 04-002-2019
Environmental Impact Study
Ardagh Road Development - 158, 162, 166, & 170 Ardagh Road, City of Barrie

Dear Mr. Still:

Thank you for retaining Birks Natural Heritage Consultants, Inc. (Birks NHC) to prepare an Environmental Impact Study (EIS) for the properties described above. It is our understanding that the EIS has been requested for an application of Draft Plan of Subdivision and Zoning By-law Amendment for the proposed residential development.

Site specific data was collected by Birks NHC Ecologists during the 2019 season. Through the assessment of the field data, background information, and applicable policies and regulations, we have determined that some areas of the properties could be identified as natural heritage features including wetland and woodland habitat.

The report provides an assessment of significance of those identified natural heritage features and assesses for potential negative ecological impacts associated with the construction of a subdivision. We conclude that those features are not considered significant within the overall landscape. Mitigation measures are outlined within the report to reduce any potential negative ecological impacts.

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

Yours truly,

Birks Natural Heritage Consultants, Inc.

Stephanie Brady, HBES
Ecologist

cc: Greg Barker, Innovative Planning Solutions

https://birksnhc.sharepoint.com/sites/BirksNHC/Shared Documents/SBrady Projects/2019/04-002-2019 Ardagh EIS/Reporting/Birks NHC 04-002-2019 Ardagh Road EIS Report 09Sept2019.docx

Table of Contents

List of Figures

List of Tables

List of in-text Tables

List of Appendices

1 INTRODUCTION

Birks Natural Heritage Consultants, Inc. (Birks NHC) was retained by Hedbern Homes to undertake an Environmental Impact Study (EIS) for the proposed residential development of the properties identified as 158, 162, 166, and 170 Ardagh Road in the City of Barrie (hereafter described as the 'development properties' or 'properties'; Figure 1).

1.1 PURPOSE

The objective of this report is to address the municipal and provincial planning processes as they relate to the requirements of an EIS prepared for the application of a Draft Plan of Subdivision and Zoning By-Law Amendment for residential development of the development properties.

This report has been prepared to address the requirements of the *Provincial Policy Statement*, ,2014, *Endangered Species Act,* 2007, City of Barrie Official Plan (2018), and Lake Simcoe Protection Plan (2009).

1.2 SITE DESCRIPTION

The development properties contain both developed and naturalized lands including existing residential use along Ardagh Road with maintained lawn, as well as woodland and wetland conditions. Evidence of infilling was observed in the northwest portion along Bishop Drive and associated with the existing residential properties.

1.3 ADJACENT LAND USE

The development properties are generally surrounded by existing residential properties. Other than the development properties themselves, there are no naturalized areas (*i.e.,* woodland) within 120 metres of the outer most limit of the development properties.

1.4 STUDY AREA

For the purpose of this EIS, the study area is focussed within an area approximately 120 metes surrounding the properties proposed for development as illustrated in Figure 1. The Ministry of Natural Resources and Forestry (MNRF) recommends a distance of 120 metres for consideration of development and/or site alteration impacts to adjacent features, as outlined within the Natural Heritage Reference Manual (MNR 2010).

2 ENVIRONMENTAL POLICY FRAMEWORK

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

2.1 PROVINCIAL POLICY STATEMENT (2014)

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 Sections 2.1.4 of the PPS, development and site alteration shall not be permitted in the following features:

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

Additional features are protected by Section 2.1.5 of the PPS which states that development and site alteration shall not be permitted in the following natural features unless it has been demonstrated that there will be no negative impacts on the natural features or their ecological functions:

a) Significant woodlands in Ecoregions 6E; and 7E;
b) Significant valleylands in Ecoregions 6E; and 7E;
c) Significant wildlife habitat;
d) Significant areas of natural and scientific interest; and
e) Coastal wetlands in Ecoregions 5E, 6E; and 7E that are not subject to policy 2.1.4(b)

While many of these features are mapped, and direction is available to allow for candidate features and functions to be identified, it remains the responsibility of the Province and/or the Municipality to designate areas identified within Section 2.1.4 and 2.1.5 of the PPS as significant. The Natural Heritage Reference Manual (MNR 2010) and Ecoregion 6E Significant Wildlife Habitat Criterion Schedule (MNRF 2015) were used within this report to identify candidate features and functions.

Sections 2.1.6 and 2.1.7 state that development and site alteration is not permitted in fish habitat or habitat of Endangered and Threatened species except in accordance with federal and provincial requirements.

Section 2.1.8 extends protection of those features defined above to adjacent lands, typically those within 120 metres of the potential impact. Section 2.1.8 states that development and site alteration shall not be permitted on adjacent lands to natural heritage features identified in policies 2.1.4, 2.1.5, and 2.1.6 unless the ecological function of the adjacent lands has been evaluated and it has been demonstrated that there will be no negative impacts on the natural features or on their ecological function.

2.2 Endangered Species Act (2007)

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

Ontario Regulation (O. Reg.) 230/08 of the ESA identifies Species at Risk in Ontario and includes species listed as Extirpated, Endangered, Threatened, and Special Concern. As noted above, only species listed as Endangered and Threatened receive species and habitat protection through the ESA. Species designated as Special Concern may receive protection under the Significant Wildlife Habitat Provisions of the Provincial Policy Statement.

2.3 Lake Simcoe Protection Plan (2009)

The development properties are within an existing settlement area and therefore subject to policies 6.32-6.34 of the Lake Simcoe Protection Plan:

> *An application for development or site alteration shall, where applicable:*
>
> *a. increase or improve fish habitat in streams, lakes and wetlands, and any adjacent riparian areas;*
> *b. include landscaping and habitat restoration that increase the ability of native plants and animals to use valleylands or riparian areas as wildlife habitat and movement corridors;*
> *c. seek to avoid, minimize and/or mitigate impacts associated with the quality and quantity of urban run-off into receiving streams, lakes and wetlands; and*
> *d. establish or increase the extent and width of a vegetation protection zone adjacent to Lake Simcoe to a minimum of 30 metres where feasible.*
>
> *Where, through an application for development or site alteration, a buffer is required to be established as a result of the application of the PPS, the buffer shall be composed of and maintained as natural self-sustaining vegetation.*

2.4 Lake Simcoe Conservation Authority

No portions of the development properties are regulated by the Lake Simcoe Region Conservation Authority (LSRCA; Appendix A). Notwithstanding, Ontario Regulation 179/06 - Development, Interference with Wetlands and Alterations to Shorelines and Watercourses Regulation requires that approval be obtained prior any site alteration and development within wetland habitat.

A Terms of Reference for the EIS was established in consultation with the LSRCA and can be found in Appendix A.

2.5 City of Barrie Official Plan (2018)

The City of Barrie Official Plan identifies the development properties as 'Level 1 with Existing Development Designation Subject to 3.5.2.4' as depicted within Schedule H – Natural Heritage Resources of the Official Plan (Appendix B).

According to Section 3.5.2.4 (d) of the City of Barrie Official Plan:

> *Notwithstanding the land use limitations applicable to properties identified as Level 1 in Section 3.5.2.4 (a) i), where an existing designation permits other forms of development, such development may proceed subject to the policies of Level 2 in Section 3.5.2.4 (a) ii) and the appropriate planning application processes.*

Section 3.5.2.4 (a) ii) states that development may be permitted provided that no negative impact to the feature can be demonstrated through the completion of an EIS.

3 METHODS

The following activities and assessments were undertaken to fulfill the objectives of this study.

3.1 Background Data Review and Sources

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

- Aerial images (Google);
- Atlas of the Breeding Birds of Ontario [website - http://www.birdsontario.org/atlas/index.jsp] (Bird Studies Canada, 2006);
- MNRF Natural Heritage Information Centre [website - https://www.ontario.ca/page/make-natural-heritage-area-map] (MNRF, 2018);
- Ministry of Environment Conservation and Parks (MECP) Species at Risk in Ontario list [website - https://www.ontario.ca/page/species-risk] (MECP, 2019);
- Ontario Nature – Ontario Reptile and Amphibian Atlas [website - https://www.ontarionature.org/protect/species/reptiles_and_amphibians/index.php] (Ontario Nature, 2019);
- Simcoe County Interactive Maps [website - https://maps.simcoe.ca/public/]; and
- City of Barrie Official Plan (2018) and Schedules.

3.2 Species at Risk Assessment

The Species at Risk assessment included an analysis of the habitat requirements of Species at Risk reported to occur in the area to identify those having potential to occur within the study area. Data

collected by Birks NHC Ecologists in 2019 was reviewed related to potential habitat for provincially designated species, notably Species at Risk 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).

3.3 Field Surveys

Characterization of the habitats and communities within the development properties was completed over the course of seven site visits. The following sections outline the methods used for each of the site visits, as well as survey protocols followed. The dates when all surveys were completed are included in Table A below.

Table A. Summary of Field Surveys Conducted in 2019

Dates	Start/End Time	Type of Survey	Biologists
September 26	15:00 - 16:00	Wetland delineation review	S. Brady - Birks NHC Ecologist & Kate Lillie - LSRCA Natural Heritage Ecologist
June 6 June 22	6:30 - 7:15 8:00 - 8:35	Dawn breeding bird surveys	B. Baker - Birks NHC Ecologist
April 16, May 23 June 26	20:50 - 21:10, 22:25 - 22:45 23:15 - 23:30	Amphibian Calling survey	B. Baker - Birks NHC Ecologist
March 4 June 27	10:00-12:30	Ecological Land Classification and Vegetation surveys	B. Baker, S. Brady - Birks NHC Ecologists
June 27	14:30 - 15:40	Vegetation Survey and wetland delineation	S. Brady - Birks NHC Ecologist
March 4	9:00-15:30	Bat Snag Density survey (Step 2)	B. Baker, S. Brady - Birks NHC Ecologists

3.3.1 Ecological Land Classification and Vegetation Surveys

Vegetation communities were assessed using Ecological Land Classification (ELC) as a first step in identifying and assessing for potential natural heritage features within the development properties. The ELC system for Southern Ontario (Lee *et al.,* 1998) was used for the development properties. The ecological community boundaries were determined through a review of aerial photography and then further refined during the site visits.

In early 2007, the MNRF refined their original vegetation type codes to more fully encompass the vast range of natural and cultural communities across Southern Ontario. Through this process, new codes have been added while some have changed slightly. These updated ELC codes have also been used for

reporting purposes in this study in areas where they are more representative of the vegetation communities within the development properties.

3.3.2 Dawn Breeding Bird Surveys

Diurnal breeding bird surveys within the development properties followed methods outlined in the Ontario Breeding Bird Atlas Guide for Participants (Cadman *et al.,* 2007) as completed by Birks NHC Ecologists on June 6 and June 22, 2019. Specifically, breeding bird surveys consisted of ten-minute point counts that were used to establish quantitative estimates of bird abundance, species presence, and breeding activity in all habitat types within the property.

3.3.3 Endangered Bat Species

Birks NHC Ecologists conducted habitat surveys in 2019 following the *Technical Note for SAR Bats* produced by the MNRF in 2015. Step 2 (snag density) within the forested portions as well as an assessment of the existing residential structures, was completed for the development properties.

Forest Roosting

Snag density surveys are currently considered by the MNRF to be of importance in the identification of potential maternity roost habitat for Little Brown Myotis. Typically, for snag density surveys, plots are randomly distributed across a forest by means of placing points on a handheld GPS with a spacing of approximately 100 metres between each point. For the purpose of this study, however, given the general lack of suitable habitat and small size of the woodland, transects were walked throughout to map all potential roost trees. Snag density surveys are required to take place while the forest is still in a leaf-off condition.

Anthropogenic Roosting

A visual inspection of all existing structures was conducted to identify holes or spaces where bats may enter and exit such as cracks, peak of roofs, and vents. The intent of this inspection was to determine whether bats may be utilizing these structures as a maternity roost site.

3.3.4 General Wildlife Surveys

A wildlife assessment within the development properties was completed through incidental observations while on site by Birks NHC Ecologists. Any incidental observations of wildlife were noted, as well as other wildlife evidence such as dens, tracks, and scat. For each observation notes, and when possible, photos were taken. These observations also helped validate our conclusions on the ecological function of the ecosystems identified within the study area.

3.3.5 Amphibians

A total of three surveys were completed to assess for the potential presence of suitable amphibian breeding habitat within the wetland habitat. Surveys were conducted on April 16, May 23, and June 26, 2019. No amphibians were heard or seen within the development properties and adjacent lands.

4 EXISTING CONDITIONS

4.1 VEGETATION

A total of three vegetation communities were identified within the development properties. Naturalized portions contain both upland and wetland conditions. The natural vegetation communities that occur on the development properties include:

1. WODM5-3: Fresh - Moist Manitoba Maple Deciduous Woodland Type
2. SWDM3-4: Manitoba Maple Deciduous Swamp Type
3. SWTM2-1: Red-osier Dogwood Mineral Deciduous Swamp Type

Vegetation communities and their respective locations within the development properties are illustrated on Figure 2.

4.1.1 Vascular Plants

Table 1 provides a list of vascular plants by vegetation community. No Species at Risk (*e.g.,* Butternut) or rare species were documented within the development properties. There is also no expectation that Houghton's Flatsedge (S3) which was documented in the area on the NHIC database would be present (Appendix C).

4.2 WILDLIFE

4.2.1 Birds

The breeding bird surveys conducted in June of 2019 documented 17 species (Table 4) within the development properties. Of these, evidence of breeding was recorded for 15 species. The remainder were species observed once, incidentally, outside of the breeding season, or that were not in appropriate habitat.

The majority of the species recorded are urban tolerant and typical of cultural landscapes (*e.g.*, American Goldfinch, American Robin). These species are tolerant to disturbances within the landscape and able to adapt to changing environments. No Species at Risk, including Special Concern species were documented within the development properties.

4.3 Mammals

Evidence of Eastern Cottontail (*i.e.,* tracks) was observed throughout the development properties. Other mammal sightings include Gray Squirrel and Racoon.

4.4 Amphibians

Two locations were surveyed three times within the development properties as illustrated in Figure 2. No amphibian species were documented within the development properties during the surveys.

4.5 Reptiles

No reptile species have been documented to date within the development properties.

4.6 Fish and Fish Habitat

No watercourses have been documented within and adjacent to the development properties.

5 SIGNIFICANT NATURAL HERITAGE FEATURES AND FUNCTIONS

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

5.1 Wetland Habitat

Although background mapping does not identify wetland habitat within the development properties, two areas have been identified as wetland. Birks NHC Ecologists delineated the wetland feature on June 27, 2019 with use of a GPS and confirmed with LSRCA staff on September 25, 2019. The limit of the wetland is illustrated on Figure 2. The SWDM3-4 community, measured at approximately 0.4 hectares, is present in the northern portion and the SWTM-1 community (500m^2) is in the north eastern portion of the lot identified as 158 Ardagh Road.

These two wetland communities are not part of a contiguous wetland complex and do not appear to extend beyond the limit of the development properties. The wetland boundary was established in the field using the Ontario Wetland Evaluation System employing the “50% rule” to identify a boundary between upland and wetland habitat based on vegetation cover.

The wildlife habitat function of this wetland habitat is limited to breeding birds, with a total of 15 species documented. No amphibians and/or reptile species were observed within the wetland habitat.

5.2 WOODLAND

The naturalized wooded portion of the development properties contain a Fresh - Moist Manitoba Maple Deciduous Woodland and a Manitoba Mineral Deciduous Swamp. The Provincial Policy Statement affords ultimate responsibility for the designation of natural features as "significant" to the Municipality and/or the Province. Woodland present within the development properties is mapped as 'Level 1 with Existing Development Designation Subject to 3.5.2.4' as depicted within Schedule H of the City of Barrie Official Plan. The woodland has been measured at approximately 0.6 hectares and does not extend beyond the limit of the development properties (*i.e.,* is not part of a larger contiguous woodland unit).

The significance of the woodland unit was assessed according to criteria defined by the Natural Heritage Reference Manual (MNR 2010). This assessment is included in Table 2 of this report. As there is approximately 12% of forest cover within the Barrie Creeks Subwatershed (LSRCA 2012), a Significant Woodland must be at least 4 hectares in size. Due to the small size of the woodland unit (0.6 hectares), the woodland only meets one of the eight criteria considered for significance:

- Proximity to Other Woodlands or Other Habitats

For the purpose of this assessment, the woodland located within the development properties will be considered to be candidate Significant Woodland on the basis of that function.

5.3 SIGNIFICANT WILDLIFE HABITAT

There appear to be no designated Significant Wildlife Habitat functions associated with the study area. Potential Significant Wildlife Habitat functions were investigated during the 2019 field surveys. The Significant Wildlife Habitat Technical Guide (MNR 2000) and Ecoregion 6E Criterion Schedules (MNRF 2015) were used and summarized in Tables 3.1 – 3.6. The following presents those functions potentially occurring within the study area.

5.3.1 Bat Maternity Colonies

A snag density survey (Step 2) was completed in 2019 within the WODM5-3 and SWDM3-4 communities. According to the Significant Wildlife Habitat Technical Guide (MNR 2000), Ecoregion 6E Criterion Schedules (MNRF 2015), maternity colonies located in mature deciduous or mixed forest stands with >10/ha large diameter (>25cm dbh) wildlife trees are candidate for Significant Wildlife Habitat designation.

Given the limited species composition of these two communities (*i.e.,* Manitoba Maple), the number of suitable snag trees is not >10 snags/ha. Therefore, there is no expectation that the forested portions of the study area would provide this function.

5.4 Habitat of Threatened and Endangered Species

Habitat requirements and appropriate designations for all species that could potentially occur in the area are outlined in Table B below. Where it is determined that the species have potential habitat within the study area, survey results were reviewed to determine the function of the potential habitat and whether the proposed works are in compliance with the regulations made under the ESA.

Table B. Species at Risk Assessment

Common Name	Scientific Name	Designation[1]	Habitat Affinities Present Within Study Area
Mammals			
Little Brown Myotis	*Myotis lucifugus*	Endangered	Marginal – existing residential dwellings may provide suitable summer roosting habitat. Woodland habitat does not contain suitable features.
Northern Myotis	*Myotis septentrionalis*	Endangered	No – Woodland habitat does not contain suitable features.
Tri-colored Bat	*Perimyotis subflavus*	Endangered	No – Woodland habitat does not contain suitable features.
Birds			
Barn Swallow	*Hirundo rustica*	Threatened	Yes – Suitable structures present within the development properties. Species and/or nests not observed in 2019.
Chimney Swift	*Chaetura pelagica*	Threatened	No - Existing residential dwellings only contain capped chimneys.
Reptiles			
Blanding's Turtle	*Emydoidea blandingii*	Threatened	No – Wetland communities are small and not part of a larger wetland complex.
Vegetation			
Butternut	*Juglans cinerea*	Endangered	No - Species not documented within 50 metres of the development properties.

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

Of the species identified in the table above, the following are relevant to the study area and proposed development:

- Mammals: Little Brown Myotis
- Birds: Barn Swallow

5.4.1 Little Brown Myotis

According to the COSEWIC Status report, Little Brown Myotis, Northern Myotis, and Tri-colored bat use a wide variety of habitats for summer roosting including rock crevices, buildings, bridges, caves, mines, and large snags (>25 cm diameter at breast height) in the early stages of decay (COSEWIC 2013, MNRF 2015). Although all three species are known to utilize wooded areas for roosting, Little Brown Myotis in Ontario has generally been restricted to anthropogenic structures.

Forest Roosting

As discussed in section 5.3.1 regarding Bat Maternity Colonies, given the limited species composition of these two communities (*i.e.,* Manitoba Maple), the number of suitable snag trees did not meet the >10 snags/ha requirement to be considered high quality potential maternity roost habitat, as per the *Technical Note for SAR Bats* (MNRF 2015). Furthermore, the woodland community is not part of a larger woodland complex that would provide potential habitat for Little Brown Myotis, Northern Myotis, and/or Tri-colored Bat.

There is no expectation that the woodland areas of the development properties provide suitable conditions to support a maternity roost for any of the three species. Mitigation measures are provided below to avoid accidental impacts to the species.

Anthropogenic Roosting

As previously discussed, Little Brown Myotis has generally been restricted to anthropogenic structures that provide suitable roosting habitat and often form large maternity roost colonies.

The visual inspection of the existing structures was completed by Birks NHC Ecologists. The residential structures are generally well maintained and only limited areas where bat individuals could enter/exit were identified. However, given the estimated age of the structures (*i.e.,* ± 50 years), it is recommended that additional consideration for potential habitat for Little Brown Myotis be completed prior to demolition of the structures. A combination of visual inspection of the interior (*i.e.,* attic) of the structures as well as exit surveys following the *Technical Note for SAR Bats* (MNRF 2015) should be completed to confirm that a maternity roost is not present. See Sections 7 and 8 for further details.

5.4.2 Barn Swallow

Barn Swallow individuals nest in artificial structures such as barns, garages, and sheds that are near open habitats including farmland and wetlands over which they forage (COSEWIC 2011). The existing structures associated with the residential properties may provide suitable nesting habitat.

None of the existing structures contained Barn Swallow nests at the time of the site visits. A visual inspection of the existing structures should be undertaken prior to demolition to ensure no accidental contravention of the ESA. See Section 8 for further details.

5.5 Natural Heritage Features and Functions Summary

The results of the field surveys, review of background information and analysis indicate the potential for the following candidate significant natural heritage features and functions to be located on or adjacent to the development properties:

Table C. Summary of Natural Heritage Features

Natural Heritage Feature	Within Development Properties	Within 120 metres of Development Properties	Actions Required
Wetland	Un-evaluated/mapped: • SWDM3-4 • SWTM2-1	None	Evaluation for potential impacts required
Habitat of Threatened or Endangered Species	Potential: • Little Brown Myotis	Potential: • Little Brown Myotis	Evaluation for potential impacts required
Fish Habitat	None	None	No actions required
Candidate Significant Woodlands	• Proximity to Other Woodlands or Other Habitats	None	Evaluation for potential impacts required
Candidate Significant Wildlife Habitat	None	None	Evaluation for potential impacts required
Provincial Areas of Natural and Scientific Interest	None	None	No actions required

6 DEVELOPMENT PLAN

The current development plan proposes development within all properties with back-to-back townhouses as well as street houses. An extension of Bishop Drive would transect the north-west portion of the properties with an access road off Aradgh Road. The development plan is illustrated in Figure 3.

7 IMPACT ASSESSMENT

Impacts are evaluated on the current knowledge of the development properties based on data collected in 2019 by Birks NHC Ecologists.

Potential impacts of the proposed residential development include the following:

- Tree and vegetation removals including woodland and wetland loss;
- Removal of structures containing potential habitat for Species at Risk; and
- Loss of and disturbance to wildlife and wildlife habitat.

In the following sections we assess the potential for negative ecological impact to the identified natural heritage features and functions.

7.1 Tree and Vegetation Removal

7.1.1 Woodland

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

For the purposes of this assessment, the woodland located within the development properties is considered to be candidate Significant Woodland on the basis that it met 1 out of 8 potential functions used for consideration for significance. As such, impacts are considered for the *Proximity to Other Woodlands or Other Habitats* function for which the woodland was considered a candidate Significant Woodland.

The candidate Significant Woodland associated with the development properties contains some portion of wetland conditions which triggers the *Proximity to Other Woodlands or Other Habitats* function. Wetland conditions are likely attributable to stormwater runoff resulting from the adjacent residential developments (discussed further below) and it is not expected that the presence of woodland habitat be providing ecological benefits to the wetland communities SWDM3-4 and SWTM-1.

Given the small size (0.6 hectares), presence of non-native and invasive species, and the overall lack of ecological functions identified, there is no expectation that the loss of this woodland unit would constitute a negative ecological impact. The Barrie Creeks Subwatershed (LSRCA 2012) contains a total of 450 hectares or 12% of forest cover. The loss of 0.6 hectares as a result of the proposed development would constitute 0.13% of the total forest cover within the Barrie Creeks Subwatershed.

The lack of connectivity to other natural heritage features and the small contribution to forest cover within the Barrie Creeks Subwatershed suggests that ecological impacts are minimal and mitigable.

Notwithstanding, offsetting for the loss of the woodland feature may be required. According to the Ecological Offsetting Policy produced by the LSRCA (LSRCA 2017), *Ecological offsetting may be considered for the loss of woodland provided that the woodland is not a rare vegetation community as defined by the Natural Heritage Reference Manual (MNRF, 2010).* The woodland feature does not contain a rare vegetation community and therefore would be considered for ecological offsetting.

Offsetting will be required at a ratio of 2:1 for the feature, and 1:1 for the associated vegetation protection zone.

Consideration for mitigation measures are provided in Section 8 below.

7.1.2 Wetland

The current development plan proposes to remove both identified wetland communities. As previously discussed, the two wetland communities present within the development properties are small (0.45 hectares in total) and are not part of a larger wetland complex. Wetland conditions are likely attributable to stormwater runoff resulting from the adjacent residential developments as well as the natural topographical grade of the area. The function of the wetland, in terms of fauna and flora is limited to urban breeding birds and no amphibian breeding and/or rare vegetation species were documented. Given the urban setting, small size, and the presence of non-native and invasive species, it can be determined that function of this wetland to be limited to hydrologic function (*i.e.,* water attenuation), and that function associated with fauna and flora habitat to be relatively low.

Notwithstanding, the loss of these two wetland communities would constitute a net loss of wetland habitat. According to the Ecological Offsetting Policy produced by the LSRCA (LSRCA 2017), *ecological offsetting will not be required for wetlands that are smaller than 0.5 ha or manmade features where it can be demonstrated to the satisfaction of the LSRCA, that the wetland or feature does not provide any of the following features or functions:*

1. *a significant groundwater hydrologic linkage to an adjacent key hydrologic or protected feature*

There are no key hydrologic or protected features present adjacent to the development properties. A piped watercourse is present adjacent to the development properties, however there is no expectation that the subject wetland feature would provide any groundwater or surface water contribution to that feature.

Therefore, the subject wetland feature is not expected to provide this feature or function.

2. *a significant component of or ecological linkage to an adjacent key natural heritage or protected feature*

There are no key natural heritage or protected feature present adjacent to the development properties. The nearest protected feature - the Allandale Lake Algonquin Bluffs Natural Area, is approximately 600 metres from the subject wetland feature.

Therefore, the wetland feature is not expected to provide this feature or function.

3. *a significant surface water hydrologic linkage (permanent or intermittent surface water connection) between the wetland and an adjacent key hydrologic or protected feature*

There are no key hydrologic or protected feature present adjacent to the development properties. A piped watercourse is present adjacent to the development properties, however there is no expectation that the subject wetland feature would provide any surface water contribution to that feature.

Therefore, the wetland feature is not expected to provide this feature or function.

Due to the small size of the identified wetland feature (0.45 hectares) and the lack of features or functions, compensation for the loss of the feature would not be required.

Additional recommendations for the loss of the wetland feature are provided in Section 8 below.

7.2 Removal of Structures Containing Potential Habitat for Species at Risk

As discussed, the existing structures may provide habitat for Little Brown Myotis (Endangered).

It remains unknown at this time whether this species is utilizing the existing structures as an anthropogenic roost. The general condition of the structures would suggest that individuals do not have access to the internal structure of the buildings (*i.e.,* attics). Additional consideration to confirm that no roost is present is required and should occur prior to any alterations to the structures. Should a roost be identified, consultation with MECP would be required to determine potential permitting requirements. Further details can be found under Section 8 below.

7.3 Loss and Disturbance to Wildlife and Wildlife Habitat

Given the urban setting, limited size, and vegetation composition, wildlife species utilizing the naturalized portions of the development properties are generally common throughout the planning landscape (*i.e.,* City of Barrie) and are disturbance-tolerant species.

The loss of naturalized portions of the development properties is not expected to result in a negative ecological impact to wildlife species utilizing the area, provided that conformance is demonstrated for environmental considerations and mitigation described in Section 8 below.

8 RECOMMENDATIONS AND MITIGATION MEASURES

Mitigation refers to the avoidance or reduction of impacts associated with the proposed works through best construction practices. The impact assessment identified three potential direct impacts to the identified natural heritage features, including tree and vegetation removal, removal of areas containing potential Species at Risk habitat and loss of or disturbance to wildlife and wildlife habitat.

The following recommended mitigation measures are recommended to minimize the above listed impacts.

8.1 Wetland and Woodland Loss

8.1.1 Wetland

Although the development properties are not regulated under Ontario Regulation 179/06, approval from the LSRCA may be required in order to alter the wetland conditions identified within the development properties.

Where possible, site works within the wetland feature should be completed in dry conditions.

8.1.2 Woodland

Ecological offsetting as described in Section 7, may be required a per the LSRCA Ecological Offsetting Policy (LSRCA 2017). An offsetting plan should be prepared that outlines the proposed methods to offset for the loss of 0.6 hectares, at a replacement ratio of 2:1. Offsetting strategies may include the following:

- Woodland enhancement (off-site) such as invasive species management
- Woodland creation through tree planting
- Cash-in-lieu Compensation to Non-Government Organizations

8.2 Species at Risk

Given the dynamic character of the natural environment, as well as changes to policy (*i.e.,* new species listing), consideration is recommended in the interpretation of potential presence of Threatened or Endangered species as protected under the ESA.

This report was produced based on the most up-to-date policy information however, it is not intended to act as a long-term assessment of potential Species at Risk. The ESA is recognized as being a 'proponent-driven' piece of legislation and therefore it is the responsibility of the landowner/developer to ensure compliance with the regulations made under this act. Should a considerable length of time and/or sudden change in policy occur prior to construction, it is recommended that a review of the assessment provided within this report be undertaken by a qualified Ecologist to ensure compliance with the ESA at that time.

It is the position of Birks NHC that all current Threatened or Endangered species listed under O. Reg. 230/08 made under the ESA with a currency date of November 13, 2018 have been considered within this report.

Little Brown Myotis
Prior to any alterations and/or demolition of the existing structures, a visual inspection of the structures should be undertaken to determine whether bats may be using the structures for maternity roosting habitat. Should the visual inspection indicate potential use, a formal bat exit survey may be required. The exit survey, should it be required, would be conducted between June 1 and July 31. The month of June is considered optimal timing according to MNRF's *Technical Note SAR Bats* (2015).

Barn Swallow
No Barn Swallow nests were documented within the development properties. However, nesting may occur in future breeding seasons. Should nest(s) be identified during subsequent site visits, habitat regulation would be applicable.

Demolition of structures should be preceded by a nest survey (completed by a qualified Ecologist) to ensure that the demolition does not disturb habitat for Barn Swallow. The habitat categorization for Barn Swallow includes the nest (Category 1), the area within 5 m of the nest (Category 2) and the area between 5 m and 200 m of the nest (Category 3). Should future proposed works result in disturbance of an identified nest based on the removal of the structure, requirements for the preparation of a mitigation and restoration record as prescribed within the ESA O. Reg. 242/08 Section 23.5 would be required.

8.3 Vegetation Removals Timing Restrictions
Construction activities involving the removal of trees should be restricted between the beginnings of April to the end of October. This will ensure that no bats actively roosting in trees will be killed or harmed as a result of clearing activities and is outside of the breeding bird season. Tree cutting should be timed to occur during the calendar months of November 1 to March 31 and no cutting activity in forested areas should occur outside that period.

9 CONCLUSIONS

This EIS was prepared for the proposed development of the properties identified as 158, 162, 166, & 170 Ardagh Road in the City of Barrie. It is our understanding that an EIS is required by the City of Barrie as part of a submission package for Draft Plan of Subdivision and Zoning By-Law Amendment. The intent of the EIS is to identify the presence of natural heritage features within the study area that have the potential to be impacted by the proposed development. The findings of the field survey program

completed by Birks NHC are presented in the EIS report and potential impacts to identified natural heritage features are discussed.

The mitigation measures recommended in this report have been developed to avoid and mitigate any potential negative ecological impacts associated with the proposed development. Overall, potential ecological impacts are minimal and mitigable provided the listed mitigation measures are applied accordingly. Consideration for the loss of the woodland feature through offsetting may be required as per the LSRCA policies. At this time, it is the position of Birks NHC that developable areas are present within the properties to allow for future site development.

10 REFERENCES

City of Barrie Official Plan and Schedules. Office Consolidation January 2018

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. 2011. COSEWIC Assessment and Status Report on the Barn Swallow *Hirundo rustica* 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.

Lake Simcoe Region Conservation Authority. 2012. Barrie Creeks, Lovers Creek, and Hewitt's Creek Subwatershed Plan.

Lake Simcoe Region Conservation Authority. 2017. Ecological Offsetting Policy.

Lake Simcoe Protection Plan. 2009.

Lee, H.T., W.D. Bakowsky, J. Riley, J. Bowles, M. Puddister, P. Uhlig and S. McMurray. 1998. Ecological Land Classification for Southern Ontario: First Approximation and Its Application.

Ontario Breeding Bird Atlas (OBBA). 2001. Guide for Participants. Atlas Management Board, Federation of Ontario Naturalists, Don Mills. Available at: http://www.birdsontario.org/atlas/download/obba_guide_en.pdf.

Ontario Ministry of Municipal Affairs and Housing. Provincial Policy Statement. 2014. Available at http://www.mah.gov.on.ca/Page10679.aspx.

Ontario Ministry of Natural Resources and Forestry. 2015. Eco-region criteria schedule 6E. Available at: https://www.ontario.ca/document/significant-wildlife-habitat-ecoregional-criteria-schedules-ecoregion-6e.

Ontario Ministry of Natural Resources and Forestry. Natural Heritage Information Centre Database. http://nhic.mnr.gov.on.ca Accessed April 2019.

Ontario Ministry of Natural Resources. 2010. Natural Heritage Reference Manual.

Ontario Ministry of Natural Resources and Forestry. 2015. Technical Note Species at Risk (SAR) Bats.

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

ARDAGH ROAD EIS

BIRKS NHC 04-002-2019

FIGURE 1. STUDY AREA

LEGEND

120m Study Area

Property Boundary

325 162.5 0 325 650 975 1,300 Meters

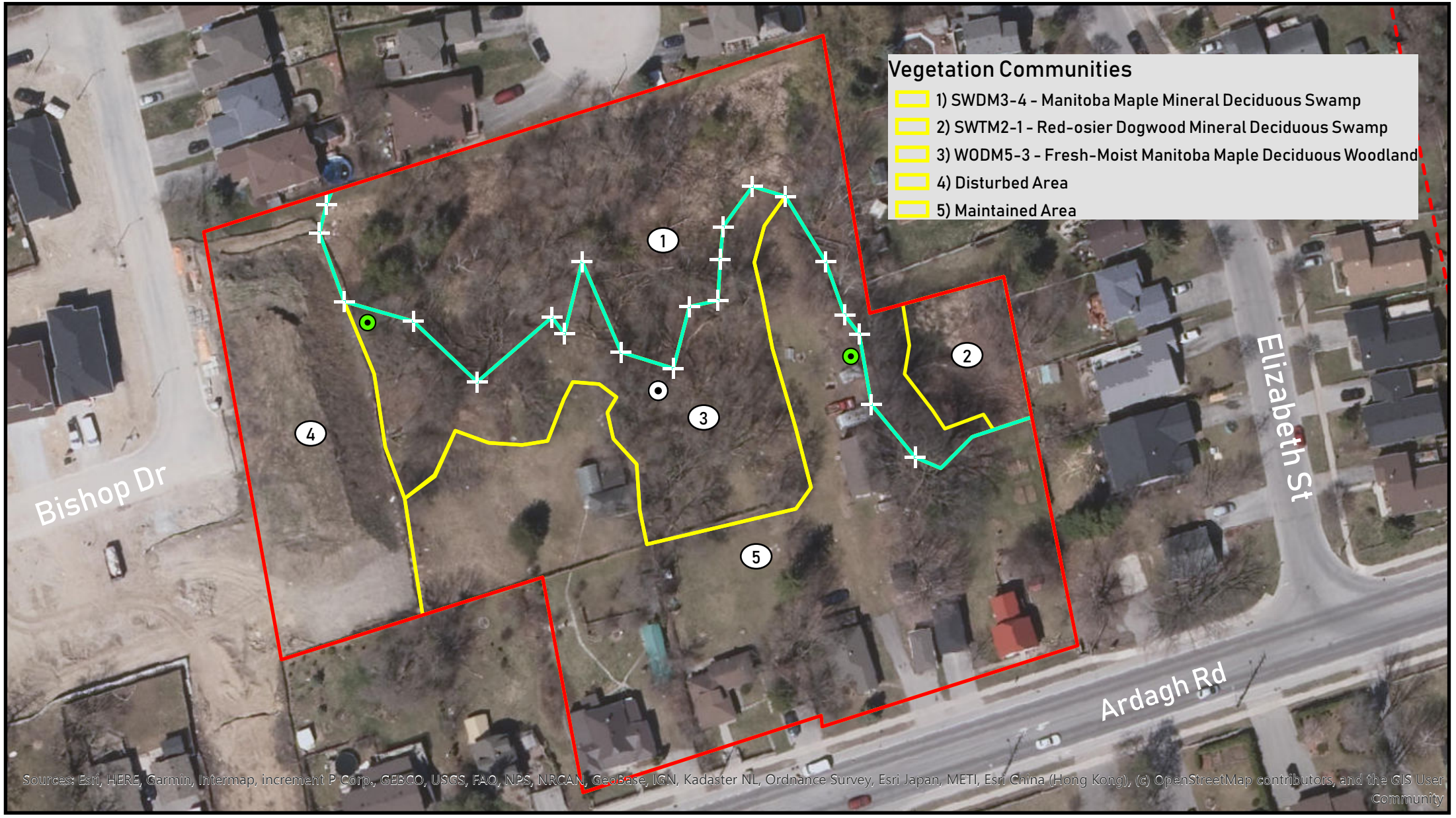
N

W E

S

MAP DRAWING INFORMATION:
DATA PROVIDED BY: ESRI CANADA
MAP CREATED BY: SB
MAY CHECKED BY: BB
MAP PROJECTION: NAD 1983 UTM ZONE 17
STATUS: FINAL
DATE: 03/07/2019

BIRKS
NATURAL HERITAGE CONSULTANTS



ARDAGH ROAD EIS

BIRKS NHC 04-002-2019

FIGURE 2. EXISTING CONDITIONS

LEGEND

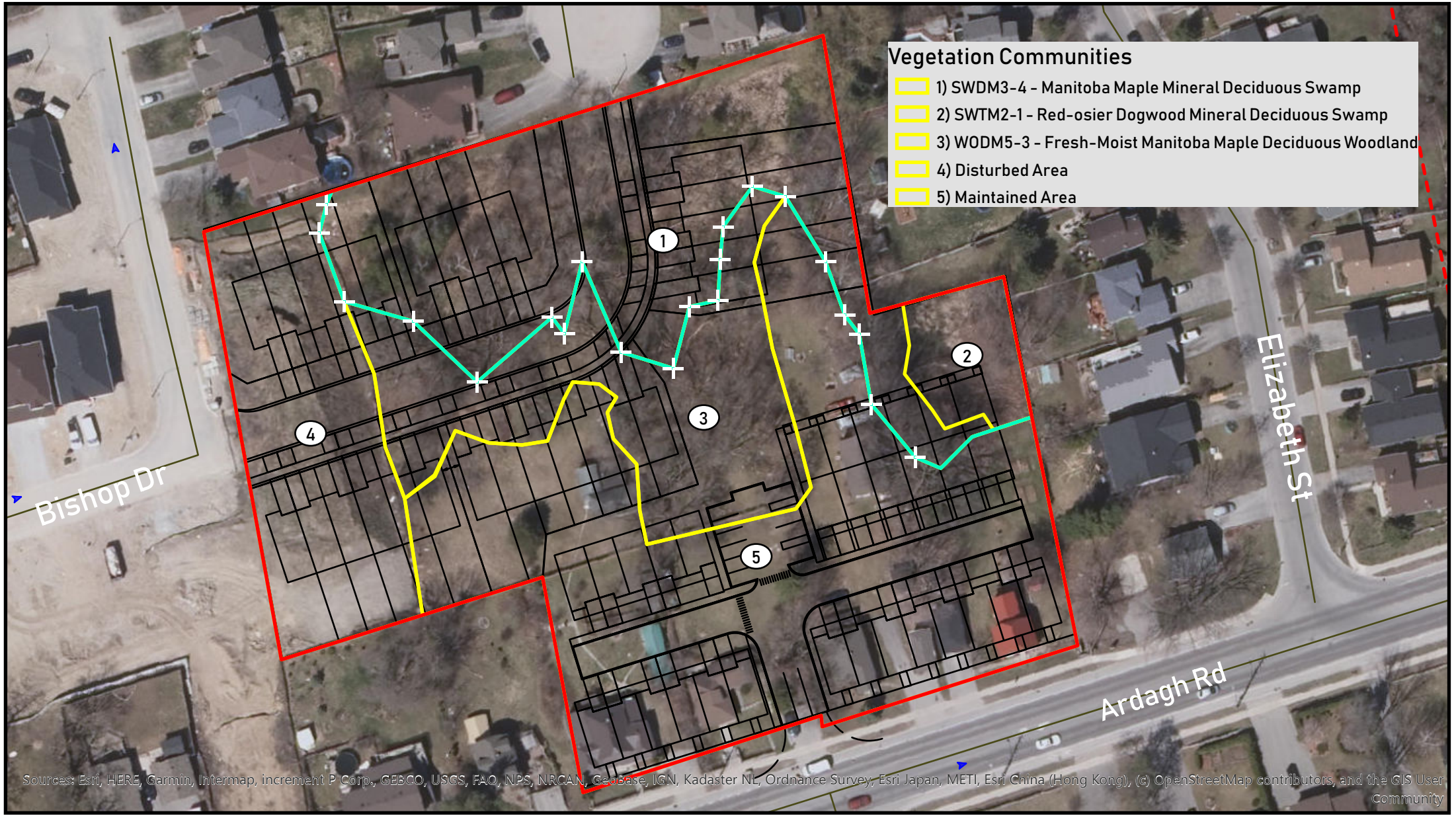
- Property Boundary
- 120m Study Area
- Wetland Limit (June 27, 2019)
- GPS Points (June 27, 2019)
- Amphibian Calling Survey Location
- Dawn Breeding Bird Survey Location

20 10 0 20 40 60 80 Meters

N W E S

MAP DRAWING INFORMATION:
DATA PROVIDED BY: SIMCOE COUNTY OPEN DATA
MAP CREATED BY: SB
MAY CHECKED BY: BB
MAP PROJECTION: NAD 1983 UTM ZONE 17
STATUS: FINAL
DATE: 03/07/2019

BIRKS NATURAL HERITAGE CONSULTANTS



ARDAGH ROAD EIS

BIRKS NHC 04-002-2019

FIGURE 3. PROPOSED SITE PLAN

LEGEND

- Property Boundary
- 120m Study Area
- Wetland Limit (June 27, 2019)
- GPS Points (June 27, 2019)

20 10 0 20 40 60 80 Meters

N W E S

MAP DRAWING INFORMATION:
DATA PROVIDED BY: SIMCOE COUNTY OPEN DATA
MAP CREATED BY: SB
MAY CHECKED BY: BB
MAP PROJECTION: NAD 1983 UTM ZONE 17
STATUS: FINAL
DATE: 12/08/2019

BIRKS NATURAL HERITAGE CONSULTANTS

Table 1. Vascular Plant List

		Vegetation Communities				Provincial Ranking		
Scientific Name	Common Name	WODM5-3	SWDM3-4	SWTM2-1	Maintained Area	S_Rank	G_Rank	ESA
Acer negundo	Manitoba Maple	x	x		x	S5	G5	NAR
Alliaria petiolata	Garlic Mustard	x	x		x	SNA	GNR	NAR
Ambrosia artemisiifolia	Common Ragweed	x			x	S5	G5	NAR
Arctium minus	Common Burdock				x	SNA	GNR	NAR
Asclepias syriaca	Common Milkweed				x	S5	G5	NAR
Betula papyrifera	Paper Birch	x				S5	G5	NAR
Brassica rapa	Field Mustard	x			x	SNA	GNR	NAR
Carex gracillima	Graceful Sedge		x			S5	G5	NAR
Chenopodium album	White Goosefoot	x			x	SNA	G5	NAR
Circaea alpina	Small Enchanter's Nightshade	x			x	S5	G5	NAR
Cornus alternifolia	Alternate-leaved Dogwood		x			S5	G5	NAR
Cornus sericea	Red-osier Dogwood		x	x		S5	G5	NAR
Daucus carota	Wild Carrot	x			x	SNA	GNR	NAR
Echinochloa crus-galli	Large Barnyard Grass				x	SNA	GNR	NAR
Erigeron philadelphicus	Philadelphia Fleabane				x	S5	G5	NAR
Euthamia graminifolia	Grass-leaved Goldenrod		x		x	S5	G5	NAR
Eutrochium maculatum var. maculatum	Spotted Joe Pye Weed		x			S5	G5T5	NAR
Fragaria vesca	Woodland Strawberry	x				S5	G5	NAR
Fraxinus americana	White Ash	x				S4	G5	NAR
Fraxinus pennsylvanica	Green Ash	x	x			S4	G5	NAR
Galium triflorum	Three-flowered Bedstraw		x			S5	G5	NAR
Geranium robertianum	Herb-Robert	x				S5	G5	NAR
Helianthus annuus	Common Sunflower				x	SNA	G5	NAR
Impatiens capensis	Spotted Jewelweed		x	x		S5	G5	NAR
Leucanthemum vulgare	Oxeye Daisy	x			x	SNA	GNR	NAR
Maianthemum racemosum	Large False Solomon's Seal	x				S5	G5	NAR
Morus alba	White Mulberry	x				SNA	GNR	NAR
Myosotis scorpioides	True Forget-me-not		x			SNA	G5	NAR

Onoclea sensibilis	Sensitive Fern		x	x		S5	G5	NAR
Osmundastrum cinnamomeum	Cinnamon Fern		x			S5	G5	NAR
Oxalis corniculata	Creeping Wood-sorrel	x				SNA	GNR	NAR
Parthenocissus quinquefolia	Virginia Creeper	x				S4?	G5	NAR
Persicaria pensylvanica	Pennsylvania Smartweed	x				S5	G5	NAR
Phalaris arundinacea var. arundinacea	Reed Canary Grass		x	x		S5	G5TNR	NAR
Phragmites australis ssp. australis	European Reed		x			SNA	G5T5	NAR
Plantago major	Common Plantain	x			x	SNA	G5	NAR
Populus tremuloides	Trembling Aspen	x				S5	G5	NAR
Prunus serotina	Black Cherry	x				S5	G5	NAR
Quercus rubra	Northern Red Oak	x				S5	G5	NAR
Ranunculus acris	Tall Buttercup	x				SNA	G5	NAR
Reynoutria japonica	Japanese Knotweed	x	x		x	SNA	GNR	NAR
Robinia pseudoacacia	Black Locust	x				SNA	G5	NAR
Rubus idaeus	Common Red Raspberry	x	x			S5	G5	NAR
Rubus occidentalis	Black Raspberry	x			x	S5	G5	NAR
Rumex crispus	Curly Dock				x	SNA	GNR	NAR
Salix euxina	Crack Willow	x				SNA	GNR	NAR
Sambucus canadensis	Common Elderberry		x			S5	G5	NAR
Securigera varia	Common Crown-vetch				x	SNA	GNR	NAR
Solidago canadensis	Canada Goldenrod	x			x	S5	G5	NAR
Sonchus palustris	Marsh Sow-thistle		x			SNA	GNR	NAR
Symphyotrichum lanceolatum ssp. l	White Panicled Aster	x				S5	G5T5	NAR
Symphyotrichum lateriflorum var. la	Calico Aster	x				S5	G5T5	NAR
Symphyotrichum novae-angliae	New England Aster	x				S5	G5	NAR
Symphyotrichum puniceum	Swamp Aster	x	x			S5	G5	NAR
Taraxacum officinale	Common Dandelion	x			x	SNA	G5	NAR
Thuja occidentalis	Eastern White Cedar	x	x			S5	G5	NAR
Tilia americana	American Basswood	x				S5	G5	NAR
Trifolium pratense	Red Clover	x			x	SNA	GNR	NAR
Tussilago farfara	Colt's-foot	x	x	x	x	SNA	GNR	NAR
Typha angustifolia	Narrow-leaved Cattail		x	x		SNA	G5	NAR

Table 1

Ulmus americana	American Elm	x				S5	G5	NAR
Verbascum thapsus	Common Mullein				x	SNA	GNR	NAR
Vitis riparia	Riverbank Grape	x	x			S5	G5	NAR

Table 2. Significant Woodland Assessment

CRITERIA	STANDARDS	ASSESSMENT
Woodland Size Criteria		
• Size refers to the aerial (spatial) extent of the woodland (irrespective of ownership) • Woodland areas are considered to be generally continuous even if intersected by narrow gaps 20m or less in width between crown edges. • Size value is related to the scarcity of woodland in the landscape derived on a municipal basis with consideration of the differences in woodland coverage among physical sub-units (e.g., watersheds, biophysical regions). • Size criteria should also account for differences in landscape-level physiography (e.g., moraines, clay planes) and community vegetation types.	Where woodlands cover: • Is less than about 5% of land cover, woodlands 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	• According to the Barrie Creeks, Lovers Creek, and Hewitt's Creek Subwatershed Plan (LSRCA 2012), there is 12% of forest cover in the subwatershed which contains the development properties. • Therefore, a woodland must be 4 ha in size or larger to be considered significant. • The woodland on the property is not part of a continuous woodland that extends beyond the property. The total area of the woodland is approximately 0.7 ha. • ***Therefore, based on Woodland Size Criteria, the woodland unit within the study area would not be considered Significant 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 would create an edge even if the opening was not wider than 20m and did not create a separate woodland.	Woodlands should be considered significant if they have: • Any interior habitat where woodlands cover less than about 15% of the land cover • 2 ha or more of interior habitat where woodlands cover about 15-30% of the land cover • **8 ha or more of interior habitat where woodlands cover about 30-60% of the land cover** • 20 ha or more of interior habitat where woodlands cover about 60% of the land cover	• The woodland does not contain any interior habitat. • ***Therefore, the woodland unit within the study area does not appear to be significant by the Woodland Interior Criteria in the context of the PPS.***
Proximity to Other Woodlands or Other Habitats		

Table 2. Significant Woodland Assessment

CRITERIA	STANDARDS	ASSESSMENT
• Woodlands that overlap, abut or are close to other significant natural heritage features or areas could be considered more valuable or significant than those that are not. • Patches close to each other are of greater mutual benefit and value to wildlife.	Woodlands should be considered significant if: • A portion of the woodland is located within a specific distance (e.g., 30m) of a significant natural feature or fish habitat likely receiving ecological benefit from the woodland and the entire woodland meets the minimum area threshold (e.g., 0.5-20ha, depending on circumstance)	• The woodland on the property contains a small wetland community which could be receiving ecological benefit from the woodland unit. • ***Therefore, based on Proximity to Other Woodlands or Other Habitats Criteria, the woodland unit within the Study Area would be considered Significant 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 not located within a defined natural heritage system. The Allendale Lake Algonquin Bluffs ANSI is located approximately 175 metres from the limit of the development properties. • The woodland on the property is not located between other significant features that could be considered to perform linkage function. • ***Therefore, based on Linkages Criteria, the woodland unit within the study area would not be considered Significant 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, depending on circumstance)	• According to Simcoe County Maps South Georgian Bay Lake Simcoe Source Water Protection Mapping, the property and study area is not mapped as being within a Significant Recharge Area. • ***Therefore, based on Water Protection Criteria, the woodland unit within the study area would not be considered Significant 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	• The woodland unit within the study area does not contain native forest tree species that have declined significantly (*i.e.,* Butternut). • ***Therefore, the woodland unit within the study area does not appear Significant by the Woodland Diversity Criteria in the context of the PPS.***

Table 2. Significant Woodland Assessment

CRITERIA	STANDARDS	ASSESSMENT
	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)	
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 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	• The woodland unit within the study area is not uncommon in terms of species composition, cover types (*i.e.,* composition of ELC vegetation types), structure or age. • ***Therefore, the woodland unit within the study area does not appear Significant by the Uncommon Characteristics Criteria in the context of the PPS.***

Table 2. Significant Woodland Assessment

CRITERIA	STANDARDS	ASSESSMENT
	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)	• The woodland unit within the study area does not generate economically viable forest products. • No formal recreational use of property of adjacent lands. • The woodland unit within the study area is not identified as providing education, cultural or historical value. • ***Therefore, the woodland unit within the study area does not appear Significant by the Economic and Social Function Values Criteria in the context of the PPS.***

Tables 3.1-3.6. Significant Wildlife Habitat Criteria Schedule for Ecoregion 6E

3.1 - Seasonal Concentrations of Areas of Animals

Wildlife Habitat	Wildlife Species	Candidate SWH		Confirmed SWH	Assessment
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	
Waterfowl Stopover and Staging Areas (Terrestrial) **Rationale:** Habitat important to migrating waterfowl.	American Black Duck Wood Duck Green-winged Teal Blue-winged Teal Mallard Northern Pintail Northern Shoveler American Wigeon Gadwall	CUM1 CUT1 Plus evidence of annual spring flooding from melt water or run-off within these Ecosites.	Fields with sheet water during Spring (mid-March to May). • Fields flooding during spring melt and run-off provide important invertebrate foraging habitat for migrating waterfowl. • Agricultural fields with waste grains are commonly used by waterfowl, these are not considered SWH unless they have spring sheet water available. Information Sources • Anecdotal information from the landowner, adjacent landowners or local naturalist clubs may be good information in determining occurrence. • Reports and other information available from Conservation Authorities • Sites documented through waterfowl planning processes • Field Naturalist Clubs • Ducks Unlimited Canada • Natural Heritage Information Centre (NHIC) Waterfowl Concentration Area	Studies carried out and verified presence of an annual concentration of any listed species, evaluation methods to follow "Bird and Bird Habitats: Guidelines for Wind Power Projects" • Any mixed species aggregations of 100 or more individuals required. • The flooded field ecosite habitat plus a 100-300m radius area, dependant on local site conditions and adjacent land use is the significant wildlife habitat. • Annual use of habitat is documented from information sources or field studies (annual use can be based on studies or determined by past surveys with species numbers and dates). • Significant Wildlife Habitat Mitigation Support Tool Index #7 provides development effects and mitigation measures.	Habitat in study area does not meet criteria related to wildlife species. Spring flooding was not observed and the small size of the development properties would not support the number of individuals required under the defining criteria.
Waterfowl Stopover and Staging Areas (Aquatic) **Rationale:** Important for local and migrant waterfowl populations during the spring or fall migration or both periods combined. Sites identified are usually only one of a few in the eco-district.	Canada Goose Cackling Goose Snow Goose American Black Duck Northern Pintail Northern Shoveler American Wigeon Gadwall Green-winged Teal Blue-winged Teal Hooded Merganser Common Merganser Lesser Scaup Greater Scaup Long-tailed Duck Surf Scoter White-winged Scoter Black Scoter Ring-necked duck Common Goldeneye Bufflehead Redhead Ruddy Duck Red-breasted Merganser Brant Canvasback Ruddy Duck	MAS1 MAS2 MAS3 SAS1 SAM1 SAF1 SWD1 SWD2 SWD3 SWD4 SWD5 SWD6 SWD7	• Ponds, marshes, lakes, bays, coastal inlets, and watercourses used during migration. Sewage treatment ponds and storm water ponds do not qualify as a SWH, however a reservoir managed as a large wetland or pond/lake does qualify. • These habitats have an abundant food supply (mostly aquatic invertebrates and vegetation in shallow water) Information Sources • Environment Canada. • Naturalist clubs often are aware of staging/stopover areas. • OMNRF Wetland Evaluations indicate presence of locally and regionally significant waterfowl staging. • Sites documented through waterfowl planning processes • Ducks Unlimited projects • Element occurrence specification by Nature Serve: http://www.natureserve.org • Natural Heritage Information Centre (NHIC) Waterfowl Concentration Areas	Studies carried out and verified presence of: • Aggregations of 100 or more of listed species for 7 days, results in > 700 waterfowl use days. • Areas with annual staging of ruddy ducks, canvasbacks, and redheads are SWH • The combined area of the ELC ecosites and a 100m radius area is the SWH • Wetland area and shorelines associated with sites identified within the Significant Wildlife Habitat Technical Guide Appendix K are significant wildlife habitat. • Evaluation methods to follow "Bird and Bird Habitats: Guidelines for Wind Power Projects" • Annual Use of Habitat is Documented from Information Sources or Field Studies (Annual can be based on completed studies or determined from past surveys with species numbers and dates recorded). • Significant Wildlife Habitat Mitigation Support Tool Index #7 provides development effects and mitigation measures.	Wetland habitat where open water was observed is small and is not of suitable size to support such aggregation.

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

Wildlife Habitat	Wildlife Species	Candidate SWH		Confirmed SWH	Assessment
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	
Bat Hibernacula **<u>Rationale:</u>** Bat hibernacula are rare habitats in all Ontario landscapes.	Big Brown Bat Tri-coloured Bat	Bat Hibernacula may be found in these ecosites: CCR1 CCR2 CCA1 CCA2 (Note: buildings are not considered to be SWH)	• Hibernacula may be found in caves, mine shafts, underground foundations and Karsts. • Active mine sites should not be considered as SWH • The locations of bat hibernacula are relatively poorly known. <u>Information Sources</u> • OMNRF for possible locations and contact for local experts • Natural Heritage Information Center (NHIC) Bat Hibernaculum Ministry of Northern • Development and Mines for location of mine shafts. • Clubs that explore caves (e.g. Sierra Club) • University Biology Departments with bat experts.	• All sites with confirmed hibernating bats are SWH. • The habitat area includes a 200m radius around the entrance of the hibernaculum, for most development types and 1000m for wind farms • Studies are to be conducted during the peak swarming period (Aug. – Sept.). Surveys should be conducted following methods outlined in the "Bats and Bat Habitats: Guidelines for Wind Power Projects. • Significant Wildlife Habitat Mitigation Support Tool Index #1 provides development effects and mitigation measures.	No caves, mine shafts, karst or underground foundations have been identified within the study area.
Bat Maternity Colonies **<u>Rationale:</u>** Known locations of forested bat maternity colonies are extremely rare in all Ontario landscapes.	Big Brown Bat Silver-haired Bat	Maternity colonies considered SWH are found in forested Ecosites. All ELC Ecosites in ELC Community Series: FOD FOM SWD SWM	• Maternity colonies can be found in tree cavities, vegetation and often in buildings (buildings are not considered to be SWH). • Maternity roosts are not found in caves and mines in Ontario. • Maternity colonies located in Mature deciduous or mixed forest stands with >10/ha large diameter (>25cm dbh) wildlife trees • Female Bats prefer wildlife tree (snags) in early stages of decay, class 1-3. • Silver-haired Bats prefer older mixed or deciduous forest and form maternity colonies in tree cavities and small hollows. Older forest areas with at least 21 snags/ha are preferred <u>Information Sources</u> • OMNRF for possible locations and contact for local experts • University Biology Departments with bat experts.	• Maternity Colonies with confirmed use by; • >10 Big Brown Bats[7] • >5 Adult Female Silver-haired Bats • The area of the habitat includes the entire woodland or a forest stand ELC Ecosite or an Ecoelement containing the maternity colonies. • Evaluation methods for maternity colonies should be conducted following methods outlined in the "Bats and Bat Habitats: Guidelines for Wind Power Projects". • Significant Wildlife Habitat Mitigation Support Tool Index #12 provides development effects and mitigation measures.	**The naturalized forested portion of the development properties may provide this function for the listed species.**
Turtle Wintering Areas **<u>Rationale:</u>** Generally sites are the only known sites in the area. Sites with the highest number of individuals are most significant.	Midland Painted Turtle **<u>Special Concern:</u>** Northern Map Turtle Snapping Turtle	Snapping and Midland Painted Turtles; ELC Community Classes; SW, MA, OA and SA, ELC Community Series; FEO and BOO Northern Map Turtle; Open Water areas such as deeper rivers or streams and lakes with current can also be used as over-wintering habitat.	• For most turtles, wintering areas are in the same general area as their core habitat. Water must be deep enough not to freeze and have soft mud substrates. • Over-wintering sites are permanent water bodies, large wetlands, and bogs or fens with adequate Dissolved Oxygen • Man-made ponds such as sewage lagoons or storm water ponds should not be considered SWH. <u>Information Sources</u> • EIS studies carried out by Conservation Authorities. • Local field naturalists and experts, as well as university herpetologists may also know where to find some of these sites. • OMNRF Ecologist or Biologist • Field Naturalist clubs • Natural Heritage Information Center (NHIC)	• Presence of 5 over-wintering Midland Painted Turtles is significant. • One or more Northern Map Turtle or Snapping Turtle over-wintering within a wetland is significant. • The mapped ELC ecosite area with the over wintering turtles is the SWH. If the hibernation site is within a stream or river, the deep-water pool where the turtles are over wintering is the SWH. • Over wintering areas may be identified by searching for congregations (Basking Areas) of turtles on warm, sunny days during the fall (Sept. – Oct.) or spring (Mar. – May) • Congregation of turtles is more common where wintering areas are limited and therefore significant • Significant Wildlife Habitat Mitigation Support Tool Index #28 provides development effects and mitigation measures for turtle wintering habitat.	Wetland habitat within the study area where open water was observed is not considered a permanent water body that could support overwintering turtles.

Wildlife Habitat	Wildlife Species	Candidate SWH		Confirmed SWH	Assessment
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	
Reptile Hibernaculum **Rationale;** Generally sites are the only known sites in the area. Sites with the highest number of individuals are most significant.	**Snakes:** Eastern Gartersnake Northern Watersnake Northern Red-bellied Snake Northern Brownsnake Smooth Green Snake Northern Ring-necked Snake Milksnake **Special Concern:** Eastern Ribbonsnake **Lizard:** **Special Concern** (Southern Shield population)**:** Five-lined Skink	For all snakes, habitat may be found in any ecosite other than very wet ones. Talus, Rock Barren, Crevice, Cave, and Alvar sites may be directly related to these habitats. Observations or congregations of snakes on sunny warm days in the spring or fall is a good indicator. For Five-lined Skink, ELC Community Series of FOD and FOM and Ecosites: FOC1 FOC3	• For snakes, hibernation takes place in sites located below frost lines in burrows, rock crevices and other natural or naturalized locations. The existence of features that go below frost line; such as rock piles or slopes, old stone fences, and abandoned crumbling foundations assist in identifying candidate SWH. • Areas of broken and fissured rock are particularly valuable since they provide access to subterranean sites below the frost line • Wetlands can also be important over-wintering habitat in conifer or shrub swamps and swales, poor fens, or depressions in bedrock terrain with sparse trees or shrubs with sphagnum moss or sedge hummock ground cover. • Five-lined skink prefer mixed forests with rock outcrop openings providing cover rock overlaying granite bedrock with fissures . Information Sources • In spring, local residents or landowners may have observed the emergence of snakes on their property (e.g. old dug wells). • Reports and other information available from Conservation Authorities. • Field Naturalists clubs • University herpetologists • Natural Heritage Information Center (NHIC) • OMNRF ecologist or biologist may be aware of locations of wintering skinks	Studies confirming: • Presence of snake hibernacula used by a minimum of five individuals of a snake sp. or; individuals of two or more snake spp. • Congregations of a minimum of five individuals of a snake sp. or; individuals of two or more snake spp. near potential hibernacula (eg. foundation or rocky slope) on sunny warm days in Spring (Apr/May) and Fall (Sept/Oct) • Note: If there are Special Concern Species present, then site is SWH • Note: Sites for hibernation possess specific habitat parameters (e.g. temperature, humidity, etc.) and consequently are used annually, often by many of the same individuals of a local population (i.e. strong hibernation site fidelity). Other critical life processes (e.g. mating) often take place in close proximity to hibernacula. The feature in which the hibernacula is located plus a 30 m radius area is the SWH • Significant Wildlife Habitat Mitigation Support Tool Index #13 provides development effects and mitigation measures for snake hibernacula. • Presence of any active hibernaculum for skink is significant. • Significant Wildlife Habitat Mitigation Support Tool Index #37 provides development effects and mitigation measures for five-lined skink wintering habitat.	Features associated with this function appear to be common in the general landscape, however no evidence of these features which could support a congregation of snakes was identified within the study area.
Colonially -Nesting Bird Breeding Habitat (Bank and Cliff) **Rationale:** Historical use and number of nests in a colony make this habitat significant. An identified colony can be very important to local populations. All swallow populations are declining in Ontario.	Cliff Swallow Northern Rough-winged Swallow (this species is not colonial but can be found in Cliff Swallow colonies)	Eroding banks, sandy hills, borrow pits, steep slopes, and sand piles. Cliff faces, bridge abutments, silos, barns. Habitat found in the following ecosites: CUM1 CUT1 CUS1 BLO1 BLS1 BLT1 CLO1 CLS1 CLT1	• Any site or areas with exposed soil banks, undisturbed or naturally eroding that is not a licensed/permitted aggregate area. • Does not include man-made structures (bridges or buildings) or recently (2 years) disturbed soil areas, such as berms, embankments, soil or aggregate stockpiles. • Does not include a licensed/permitted Mineral Aggregate Operation. Information Sources • Reports and other information available from Conservation Authorities. • Ontario Breeding Bird Atlas • Bird Studies Canada; *NatureCounts* http://www.birdscanada.org/birdmon/ • Field Naturalist Clubs.	Studies confirming: • Presence of 1 or more nesting sites with 8 or more cliff swallow pairs and/or rough-winged swallow pairs during the breeding season. • A colony identified as SWH will include a 50m radius habitat area from the peripheral nests • Field surveys to observe and count swallow nests are to be completed during the breeding season. Evaluation methods to follow “Bird and Bird Habitats: Guidelines for Wind Power Projects” • Significant Wildlife Habitat Mitigation Support Tool Index #4 provides development effects and mitigation measures	Habitat in the study area does not meet key criteria to be considered significant – cliffs or banks were not observed within the study area.

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

Wildlife Habitat	Wildlife Species	Candidate SWH		Confirmed SWH	Assessment
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	
Migratory Butterfly Stopover Areas **Rationale:** Butterfly stopover areas are extremely rare habitats and are biologically important for butterfly species that migrate south for the winter.	Painted Lady Red Admiral Special Concern Monarch	Combination of ELC Community Series; need to have present one Community Series from each land class: Field: CUM CUT CUS Forest: 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 Information Sources • OMNRF (NHIC) • Agriculture Canada in Ottawa may have list of butterfly experts. • Field Naturalist Clubs • Toronto Entomologists Association • Conservation Authorities	Studies confirm: • The presence of Monarch Use Days (MUD) during fall migration (Aug/Oct). MUD is based on the number of days a site is used by Monarchs, multiplied by the number of individuals using the site. Numbers of butterflies can range from 100-500/day, significant variation can occur between years and multiple years of sampling should occur. • Observational studies are to be completed and need to be done frequently during the migration period to estimate MUD. • MUD of >5000 **or** >3000 with the presence of Painted Ladies or Red Admiral's is to be considered significant. • Significant Wildlife Habitat Mitigation Support Tool Index #16 provides development effects and mitigation measures.	Study area is not located within 5km of Lake Ontario and thus this habitat function is not applicable.
Landbird Migratory Stopover Areas **Rationale:** Sites with a high diversity of species as well as high numbers are most significant.	All migratory songbirds.: Canadian Wildlife Service Ontario website. All migrant raptor species: Ontario Ministry of Natural Resources: Fish and Wildlife Conservation Act, 1997. Schedule 7: Specially Protected Birds (Raptors)	All Ecosites associated with these ELC Community Series; FOC FOM FOD SWC SWM SWD	Woodlots need to be >10 ha in size and within 5 km of Lake Ontario. • If multiple woodlands are located along the shoreline those Woodlands <2km from Lake Ontario are more significant • Sites have a variety of habitats; forest, grassland and wetland complexes. • The largest sites are more significant • Woodlots and forest fragments are important habitats to migrating birds, these features located along the shore and located within 5km of Lake Ontario are Candidate SWH . Information Sources • Bird Studies Canada • Ontario Nature • Local birders and naturalist club • Ontario Important Bird Areas (IBA) Program	Studies confirm: • Use of the habitat by >200 birds/day and with >35 spp with at least 10 bird spp. recorded on at least 5 different survey dates. This abundance and diversity of migrant bird species is considered above average and significant. • Studies should be completed during spring (Apr./May) and fall (Aug/Oct) migration using standardized assessment techniques. Evaluation methods to follow "Bird and Bird Habitats: Guidelines for Wind Power Projects" • Significant Wildlife Habitat Mitigation Support Tool Index #9 provides development effects	Study area is not located within 5km of Lake Ontario and thus this habitat function is not applicable.

Wildlife Habitat	Wildlife Species	Candidate SWH		Confirmed SWH	Assessment
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	
Deer Yarding Areas **<u>Rationale:</u>** Winter habitat for deer is considered to be the main limiting factor for northern deer populations. In winter, deer congregate in "yards" to survive severe winter conditions. Deer yards typically have a long history of annual use by deer, yards typically represent 10-15% of an areas summer range.	White-tailed Deer	Note: OMNRF to determine this habitat. ELC Community Series providing a thermal cover component for a deer yard would include; FOM, FOC, SWM and SWC. Or these ELC Ecosites; CUP2 CUP3 FOD3 CUT	• Deer yarding areas or winter concentration areas (yards) are areas deer move to in response to the onset of winter snow and cold. This is a behavioural response and deer will establish traditional use areas. The yard is composed of two areas referred to as Stratum I and Stratum II. Stratum II covers the entire winter yard area and is usually a mixed or deciduous forest with plenty of browse available for food. Agricultural lands can also be included in this area. Deer move to these areas in early winter and generally, when snow depths reach 20 cm, most of the deer will have moved here. If the snow is light and fluffy, deer may continue to use this area until 30 cm snow depth. In mild winters, deer may remain in the Stratum II area the entire winter. • The Core of a deer yard (Stratum I) is located within the Stratum II area and is critical for deer survival in areas where winters become severe. It is primarily composed of coniferous trees (pine, hemlock, cedar, spruce) with a canopy cover of more than 60%. • OMNRF determines deer yards following methods outlined in "Selected Wildlife and Habitat Features: Inventory Manual" • Woodlots with high densities of deer due to artificial feeding are not significant.	No Studies Required: • Snow depth and temperature are the greatest influence on deer use of winter yards. Snow depths > 40cm for more than 60 days in a typically winter are minimum criteria for a deer yard to be considered as SWH. • Deer Yards are mapped by OMNRF District offices. Locations of Core or Stratum 1 and Stratum 2 Deer yards considered significant by OMNRF will be available at local MNRF offices or via Land Information Ontario (LIO). • Field investigations that record deer tracks in winter are done to confirm use (best done from an aircraft). Preferably, this is done over a series of winters to establish the boundary of the Stratum I and Stratum II yard in an "average" winter. MNRF will complete these field investigations. • If a SWH is determined for Deer Wintering Area or if a proposed development is within Stratum II yarding area then Movement Corridors are to be considered as outlined within this Schedule. • Significant Wildlife Habitat Mitigation Support Tool Index #2 provides development effects and mitigation measures.	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.
Deer Winter Congregation Areas **<u>Rationale:</u>** Deer movement during winter in the southern areas of Ecoregion 6E are not constrained by snow depth, however deer will annually congregate in large numbers in suitable woodlands to reduce or avoid the impacts of winter conditions.	White-tailed Deer	All Forested Ecosites with these ELC Community Series; FOC FOM FOD SWC SWM SWD Conifer plantations much smaller than 50 ha may also be used.	• Woodlots will typically be >100 ha in size. Woodlots <100ha may be considered as significant based on MNRF studies or assessment. • Deer movement during winter in the southern areas of Ecoregion 6E are not constrained by snow depth, however deer will annually congregate in large numbers in suitable woodlands . • If deer are constrained by snow depth refer to the Deer Yarding Area habitat. • Large woodlots > 100ha and up to 1500 ha are known to be used annually by densities of deer that range from 0.1-1.5 deer/ha . • Woodlots with high densities of deer due to artificial feeding are not significant. <u>Information Sources</u> • MNRF District Offices • LIO/NRVIS	Studies confirm: • Deer management is an MNRF responsibility, deer winter congregation areas considered significant will be mapped by MNRF • Use of the woodlot by white-tailed deer will be determined by MNRF, all woodlots exceeding the area criteria are significant, unless determined not to be significant by MNRF • Studies should be completed during winter (Jan/Feb) when >20cm of snow is on the ground using aerial survey techniques, ground or road surveys. or a pellet count deer density survey. • If a SWH is determined for Deer Wintering Area or if a proposed development is within Stratum II yarding area then Movement Corridors are to be considered as outlined below. • Significant Wildlife Habitat Mitigation Support Tool Index #2 provides development effects and mitigation measures.	Study area is located in the northern part of Ecoregion 6E in an area that receives >20cm of snow accumulation per year. Thus, this criterion is not applicable.

3.2 - Rare Vegetation Communities

Rare Vegetation Community	Candidate SWH			Confirmed SWH	Assessment
	ELC Ecosite Code	Habitat Description	Detailed Information and Sources	Defining Criteria	
Cliffs and Talus Slopes **Rationale:** Cliffs and Talus Slopes are extremely rare habitats in Ontario.	Any ELC Ecosite within Community Series: TAO TAS TAT CLO CLS CLT	A Cliff is vertical to near vertical bedrock >3m in height. A Talus Slope is rock rubble at the base of a cliff made up of coarse rocky debris	Most cliff and talus slopes occur along the Niagara Escarpment. Information Sources • The Niagara Escarpment Commission has detailed information on location of these habitats. • OMNRF District • Natural Heritage Information Center (NHIC) has location information available on their website • Field Naturalist clubs • Conservation Authorities	• Confirm any ELC Vegetation Type for Cliffs or Talus Slopes • Significant Wildlife Habitat Mitigation Support Tool Index #21 provides development effects and mitigation measures.	Habitat in the study area does not meet key criteria to be considered significant.
Sand Barren **Rationale;** Sand barrens are rare in Ontario and support rare species. Most Sand Barrens have been lost due to cottage development and forestry	ELC Ecosites: SBO1 SBS1 SBT1 Vegetation cover varies from patchy and barren to continuous meadow (SBO1), thicket-like (SBS1), or more closed and treed (SBT1). Tree cover always ≤ 60%	Sand Barrens typically are exposed sand, generally sparsely vegetated and caused by lack of moisture, periodic fires and erosion. Usually located within other types of natural habitat such as forest or savannah. Vegetation can vary from patchy and barren to tree covered, but less than 60%.	A sand barren area >0.5ha in size. Information Sources • OMNRF Districts. • Natural Heritage Information Center (NHIC) has location information available on their website. • Field Naturalist clubs • Conservation Authorities	• Confirm any ELC Vegetation Type for Sand Barrens • Site must not be dominated by exotic or introduced species (<50% vegetative cover are exotic sp.) • Significant Wildlife Habitat Mitigation Support Tool Index #20 provides development effects and mitigation measures.	Habitat in the study area does not meet key criteria to be considered significant.
Alvar **Rationale;** Alvars are extremely rare habitats in Ecosregion 6E. Most alvars in Ontario are in Ecoregions 6E and 7E. Alvars in 6E are small and highly localized just north of the Palaeozoic-Precambrian contact.	ALO1 ALS1 ALT1 FOC1 FOC2 CUM2 CUS2 CUT2-1 CUW2 **Five Alvar Species:** 1) *Carex crawei* 2) *Panicum philadelphicum* 3) *Eleocharis compressa* 4) *Scutellaria parvula* 5) *Trichostema brachiatum* These indicator species are very specific to Alvars within Ecoregion 6E	An alvar is typically a level, mostly unfractured calcareous bedrock feature with a mosaic of rock pavements and bedrock overlain by a thin veneer of soil. The hydrology of alvars is complex, with alternating periods of inundation and drought. Vegetation cover varies from sparse lichen-moss associations to grasslands and shrublands and comprising a number of characteristic or indicator plants. Undisturbed alvars can be phyto- and zoogeographically diverse, supporting many uncommon or are relict plant and animal species. Vegetation cover varies from patchy to barren with a less than 60% tree cover	An Alvar site > 0.5 ha in size. Information Sources • Alvars of Ontario (2000), Federation of Ontario Naturalists. • Ontario Nature – Conserving Great Lakes Alvars. • Natural Heritage Information Center (NHIC) has location information available on their website • OMNRF Districts • Field Naturalist clubs. • Conservation Authorities.	• Field studies that identify four of the five Alvar Indicator Species at a Candidate Alvar site is Significant. • Site must not be dominated by exotic or introduced species (<50% vegetative cover are exotic sp.). • The alvar must be in excellent condition and fit in with surrounding landscape with few conflicting land uses • Significant Wildlife Habitat Mitigation Support Tool Index #17 provides development effects and mitigation measures.	Habitat in the study area does not meet key criteria to be considered significant.
Old Growth Forest	Forest Community Series: FOD	Old Growth forests are characterized by heavy mortality	Woodland areas 30 ha or greater in size or with at least 10 ha interior habitat assuming 100 m buffer at edge of forest.	Field Studies will determine:	Forest communities in study area do not meet key criteria related to Woodland areas.

Rare Vegetation Community	Candidate SWH			Confirmed SWH	Assessment
	ELC Ecosite Code	Habitat Description	Detailed Information and Sources	Defining Criteria	
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.	FOC FOM SWD SWC SWM	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.	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	• If dominant trees species of the are >140 years old, then the area containing these trees is SWH • The forested area containing the old growth characteristics will have experienced no recognizable forestry activities (cut stumps will not be present) • The area of forest ecosites combined or an eco-element within an ecosite that contains the old growth characteristics is the SWH. • Determine ELC vegetation types for the forest area containing the old growth characteristics • Significant Wildlife Habitat Mitigation Support Tool Index #23 provides development effects and mitigation measures.	Woodland habitat is not considered to be old growth forest.
Savannah **Rationale:** Savannahs are extremely rare habitats in Ontario.	TPS1 TPS2 TPW1 TPW2 CUS2	A Savannah is a tallgrass prairie habitat that has tree cover between 25 – 60%.	No minimum size to site. Site must be restored or a natural site. Remnant sites such as railway right of ways are not considered to be SWH. Information Sources • Natural Heritage Information Center (NHIC) has location information available on their website • OMNRF Districts • Field Naturalist clubs. • Conservation Authorities.	Field studies confirm one or more of the Savannah indicator species listed in Appendix N should be present. Note: Savannah plant spp. list from Ecoregion 6E should be used. • Area of the ELC Ecosite is the SWH. • Site must not be dominated by exotic or introduced species (<50% vegetative cover are exotic sp.). • Significant Wildlife Habitat Mitigation Support Tool Index #18 provides development effects and mitigation measures.	Habitat in the study area does not meet key criteria to be considered significant.
Tallgrass Prairie **Rationale:** Tallgrass Prairies are extremely rare habitats in Ontario.	TPO1 TPO2	A Tallgrass Prairie has ground cover dominated by prairie grasses. An open Tallgrass Prairie habitat has < 25% tree cover.	No minimum size to site. Site must be restored or a natural site. Remnant sites such as railway right of ways are not considered to be SWH. Information Sources • Natural Heritage Information Center (NHIC) has location information available on their website • OMNRF Districts • Field Naturalist clubs. • Conservation Authorities.	Field studies confirm one or more of the Prairie indicator species listed in Appendix N should be present. Note: Prairie plant spp. list from Ecoregion 6E should be used • Area of the ELC Ecosite is the SWH. • Site must not be dominated by exotic or introduced species (<50% vegetative cover are exotic sp.). • Significant Wildlife Habitat Mitigation Support Tool Index #19 provides development effects and mitigation measures.	Habitat in the study area does not meet key criteria to be considered significant.
Other Rare Vegetation Communities **Rationale:** Plant communities that often contain rare species which depend on the habitat for survival.	Provincially Rare S1, S2 and S3 vegetation communities are listed in Appendix M of the Significant Wildlife Habitat Technical Guide. Any ELC Ecosite Code that has a possible ELC Vegetation Type that is Provincially Rare is Candidate SWH.	Rare Vegetation Communities may include beaches, fens, forest, marsh, barrens, dunes and swamps.	ELC Ecosite codes that have the potential to be a rare ELC Vegetation Type as outlined in appendix M The OMNRF/NHIC will have up to date listing for rare vegetation communities. Information Sources • Natural Heritage Information Center (NHIC) has location information available on their website • OMNRF Districts • Field Naturalist clubs. • Conservation Authorities.	Field studies should confirm if an ELC Vegetation Type is a rare vegetation community based on listing within Appendix M of Significant Wildlife Habitat Technical Guide. • Area of the ELC Vegetation Type polygon is the SWH. • Significant Wildlife Habitat Mitigation Support Tool Index #37 provides development effects and mitigation measures.	No rare vegetation communities have been documented within the study area.

3.3 - Specialized Habitat for Wildlife

Wildlife Habitat	Wildlife Species	Candidate SHW		Confirmed SWH	Assessment
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	
Waterfowl Nesting Area **Rationale;** Important to local waterfowl populations, sites with greatest number of species and highest number of individuals are significant.	American Black Duck Northern Pintail Northern Shoveler Gadwall Blue-winged Teal Green-winged Teal Wood Duck Hooded Merganser Mallard	All upland habitats located adjacent to these wetland ELC Ecosites are Candidate SWH: MAS1 MAS2 MAS3 SAS1 SAM1 SAF1 MAM1 MAM2 MAM3 MAM4 MAM5 MAM6 SWT1 SWT2 SWD1 SWD2 SWD3 SWD4 **Note: includes adjacency to Provincially Significant Wetlands**	A waterfowl nesting area extends 120 m from a wetland (> 0.5 ha) or a wetland (>0.5ha) and any small wetlands (0.5ha) within 120m or a cluster of 3 or more small (<0.5 ha) wetlands within 120 m of each individual wetland where waterfowl nesting is known to occur. • Upland areas should be at least 120 m wide so that predators such as racoons, skunks, and foxes have difficulty finding nests. • Wood Ducks and Hooded Mergansers utilize large diameter trees (>40cm dbh) in woodlands for cavity nest sites. Information Sources • Ducks Unlimited staff may know the locations of particularly productive nesting sites. • OMNRF Wetland Evaluations for indication of significant waterfowl nesting habitat. • Reports and other information available from Conservation Authorities.	Studies confirmed: • Presence of 3 or more nesting pairs for listed species excluding Mallards, or; • Presence of 10 or more nesting pairs for listed species including Mallards. • Any active nesting site of an American Black Duck is considered significant. • Nesting studies should be completed during the spring breeding season (April - June). Evaluation methods to follow “Bird and Bird Habitats: Guidelines for Wind Power Projects” • A field study confirming waterfowl nesting habitat will determine the boundary of the waterfowl nesting habitat for the SWH, this may be greater or less than 120 m from the wetland and will provide enough habitat for waterfowl to successfully nest. • Significant Wildlife Habitat Technical Guide Index #25 provides development effects and mitigation measures.	The wetland communities within the study area are small and would not support the number of pairs required for this function. Waterfowl nesting for any species was not observed.
Bald Eagle and Osprey Nesting, Foraging and Perching Habitat **Rationale;** Nest sites are fairly uncommon in Eco-region 6E and are used annually by these species. Many suitable nesting locations may be lost due to increasing shoreline development pressures and scarcity of habitat.	Osprey **Special Concern** Bald Eagle	ELC Forest Community Series: FOD, FOM, FOC, SWD, SWM and SWC directly adjacent to riparian areas – rivers, lakes, ponds and wetlands	Nests are associated with lakes, ponds, rivers or wetlands along forested shorelines, islands, or on structures over water. • Osprey nests are usually at the top a tree whereas Bald Eagle nests are typically in super canopy trees in a notch within the tree’s canopy. • Nests located on man-made objects are not to be included as SWH (e.g. telephone poles and constructed nesting platforms). Information Sources • Natural Heritage Information Center (NHIC) compiles all known nesting sites for Bald Eagles in Ontario. • MNRF values information (LIO/NRVIS) will list known nesting locations. Note: data from NRVIS is provided as a point and does not represent all the habitat. • Nature Counts, Ontario Nest Records Scheme data. • OMNRF Districts. • Check the Ontario Breeding Bird Atlas or Rare Breeding Birds in Ontario for species documented • Reports and other information available from Conservation Authorities. • Field Naturalists clubs	Studies confirm the use of these nests by: • One or more active Osprey or Bald Eagle nests in an area. • Some species have more than one nest in a given area and priority is given to the primary nest with alternate nests included within the area of the SWH. • For an Osprey, the active nest and a 300 m radius around the nest or the contiguous woodland stand is the SWH , maintaining undisturbed shorelines with large trees within this area is important . • For a Bald Eagle the active nest and a 400-800 m radius around the nest is the SWH. , Area of the habitat from 400-800m is dependent on-site lines from the nest to the development and inclusion of perching and foraging habitat • To be significant a site must be used annually. When found inactive, the site must be known to be inactive for > 3 years or suspected of not being used for >5 years before being considered not significant. • Observational studies to determine nest site use, perching sites and foraging areas need to be done from mid March to mid August. • Evaluation methods to follow “Bird and Bird Habitats: Guidelines for Wind Power Projects”	The listed species were not documented within the study area.

Wildlife Habitat	Wildlife Species	Candidate SHW		Confirmed SWH	Assessment
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	
				• Significant Wildlife Habitat Technical Guide Index #26 provides development effects and mitigation measures	
Woodland Raptor Nesting Habitat **<u>Rationale:</u>** Nests sites for these species are rarely identified; these area sensitive habitats and are often used annually by these species.	Northern Goshawk Cooper's Hawk Sharp-shinned Hawk Red-shouldered Hawk Barred Owl Broad-winged Hawk	May be found in all forested ELC Ecosites. May also be found in SWC, SWM, SWD and CUP3	All natural or conifer plantation woodland/forest stands >30ha with >10ha of interior habitat. Interior habitat determined with a 200m buffer • Stick nests found in a variety of intermediate-aged to mature conifer, deciduous or mixed forests within tops or crotches of trees. Species such as Coopers hawk nest along forest edges sometimes on peninsulas or small off-shore islands. • In disturbed sites, nests may be used again, or a new nest will be in close proximity to old nest. <u>Information Sources</u> • OMNRF Districts. • Check the Ontario Breeding Bird Atlas or Rare Breeding Birds in Ontario for species documented. • Check data from Bird Studies Canada. • Reports and other information available from Conservation Authorities.	Studies confirm: • Presence of 1 or more active nests from species list is considered significant. • Red-shouldered Hawk and Northern Goshawk – A 400m radius around the nest or 28 ha area of habitat is the SWH (the 28ha habitat area would be applied where optimal habitat is irregularly shaped around the nest) • Barred Owl – A 200m radius around the nest is the SWH. • Broad-winged Hawk and Coopers Hawk– A 100m radius around the nest is the SWH. • Sharp-Shinned Hawk – A 50m radius around the nest is the SWH. • Conduct field investigations from mid-March to end of May. The use of call broadcasts can help in locating territorial (courting/nesting) raptors and facilitate the discovery of nests by narrowing down the search area. • Significant Wildlife Habitat Technical Guide Index #27 provides development effects and mitigation measures.	Coniferous forest habitat is not present within the study area. Naturalized portions of the development properties are not of sufficient size to provide this function.
Turtle Nesting Areas **<u>Rationale:</u>** These habitats are rare and when identified will often be the only breeding site for local populations of turtles.	Midland Painted Turtle <u>Special Concern Species</u> Northern Map Turtle Snapping Turtle	Exposed mineral soil (sand or gravel) areas adjacent (<100m) or within the following ELC Ecosites: MAS1 MAS2 MAS3 SAS1 SAM1 SAF1 BOO1 FEO1	• Best nesting habitat for turtles are close to water and away from roads and sites less prone to loss of eggs by predation from skunks, raccoons or other animals. • For an area to function as a turtle-nesting area, it must provide sand and gravel that turtles are able to dig in and are located in open, sunny areas. Nesting areas on the sides of municipal or provincial road embankments and shoulders are not SWH. • Sand and gravel beaches adjacent to undisturbed shallow weedy areas of marshes, lakes, and rivers are most frequently used. <u>Information Sources</u> • Use Ontario Soil Survey reports and maps to help find suitable substrate for nesting turtles (well-drained sands and fine gravels). • Check the Ontario Herpetofaunal Summary Atlas records or other similar atlases for uncommon turtles; location information may help to find potential nesting habitat for them. • Natural Heritage Information Center (NHIC) • Field Naturalist clubs	Studies confirm: • Presence of 5 or more nesting Midland Painted Turtles • One or more Northern Map Turtle or Snapping Turtle nesting is a SWH. • The area or collection of sites within an area of exposed mineral soils where the turtles nest, plus a radius of 30-100m around the nesting area dependant on slope, riparian vegetation and adjacent land use is the SWH. • Travel routes from wetland to nesting area are to be considered within the SWH as part of the 30-100m area of habitat. • Field investigations should be conducted in prime nesting season typically late spring to early summer. Observational studies observing the turtles nesting is a recommended method. Significant Wildlife Habitat Technical Guide Index #28 provides development effects and mitigation measures for turtle nesting habitat.	Suitable ELC ecosites were not documented within the study area. Some recent areas of exposed mineral sand were present on the development properties (*e.g.,* fill pile and disturbed area) which we understand resulted from adjacent developments. These areas are new and temporal in nature and are delineated by silt fence.

Wildlife Habitat	Wildlife Species	Candidate SHW		Confirmed SWH	Assessment
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	
Seeps and Springs **<u>Rationale;</u>** Seeps/Springs are typical of headwater areas and are often at the source of coldwater streams.	Wild Turkey Ruffed Grouse Spruce Grouse White-tailed Deer Salamander spp.	Seeps/Springs are areas where ground water comes to the surface. Often they are found within headwater areas within forested habitats. Any forested Ecosite within the headwater areas of a stream could have seeps/springs.	Any forested area (with <25% meadow/field/pasture) within the headwaters of a stream or river system. • Seeps and springs are important feeding and drinking areas especially in the winter will typically support a variety of plant and animal species <u>Information Sources</u> • Topographical Map. • Thermography. • Hydrological surveys conducted by Conservation Authorities and Ministry of the Environment, Conservation and Parks. • Field Naturalists clubs and landowners. • Municipalities and Conservation Authorities may have drainage maps and headwater areas mapped.	Field Studies confirm: • Presence of a site with 2 or more seeps/springs should be considered SWH. • The area of an ELC forest ecosite or an ecoelement within ecosite containing the seeps/springs is the SWH. The protection of the recharge area considering the slope, vegetation, height of trees and groundwater condition need to be considered in delineation the habitat. • Significant Wildlife Habitat Technical Guide Index #30 provides development effects and mitigation measures	No seeps or springs were documented within the study area.
Amphibian Breeding Habitat (Woodland). **<u>Rationale:</u>** These habitats are extremely important to amphibian biodiversity within a landscape and often represent the only breeding habitat for local amphibian populations	Eastern Newt Blue-spotted Salamander Spotted Salamander Gray Treefrog Spring Peeper Western Chorus Frog Wood Frog	All Ecosites associated with these ELC Community Series; FOC FOM FOD SWC SWM SWD Breeding pools within the woodland or the shortest distance from forest habitat are more significant because they are more likely to be used due to reduced risk to migrating amphibians	• Presence of a wetland, pond or woodland pool (including vernal pools) >500m2 (about 25m diameter) within or adjacent (within 120m) to a woodland (no minimum size). Some small wetlands may not be mapped and may be important breeding pools for amphibians. • Woodlands with permanent ponds or those containing water in most years until mid-July are more likely to be used as breeding habitat <u>Information Sources</u> • Ontario Herpetofaunal Summary Atlas (or other similar atlases) for records • Local landowners may also provide assistance as they may hear spring-time choruses of amphibians on their property. • OMNRF District. • OMNRF wetland evaluations • Field Naturalist clubs • Canadian Wildlife Service • Amphibian Road Call Survey • Ontario Vernal Pool Association: http://www.ontariovernalpools.org	Studies confirm; • Presence of breeding population of 1 or more of the listed newt/salamander species or 2 or more of the listed frog species with at least 20 individuals (adults or eggs masses) or 2 or more of the listed frog species with Call Level Codes of 3. • A combination of observational study and call count surveys will be required during the spring (March-June) when amphibians are concentrated around suitable breeding habitat within or near the woodland/wetlands. • The habitat is the wetland area plus a 230m radius of woodland area. If a wetland area is adjacent to a woodland, a travel corridor connecting the wetland to the woodland is to be included in the habitat. • Significant Wildlife Habitat Technical Guide Index #14 provides development effects and mitigation measures.	The wetland habitat within the development properties is small and does not meet the minimum size criteria to be considered significant.
Amphibian Breeding Habitat (Wetlands) **<u>Rationale;</u>** Wetlands supporting breeding for these amphibian species are extremely important	Eastern Newt American Toad Spotted Salamander Four-toed Salamander Blue-spotted Salamander Gray Treefrog Western Chorus Frog Northern Leopard Frog Pickerel Frog	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	• 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.	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 wetland habitat within the development properties is small and does not meet the minimum size criteria to be considered significant.

Wildlife Habitat	Wildlife Species	Candidate SHW		Confirmed SWH	Assessment
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	
and fairly rare within Central Ontario landscapes.	Green Frog Mink Frog Bullfrog	(e.g. Bull Frog) may be adjacent to woodlands.	<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.	• 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 below. • Significant Wildlife Habitat Technical Guide Index #15 provides development effects and mitigation measures.	
Woodland Area-Sensitive Bird Breeding Habitat **<u>Rationale:</u>** Large, natural blocks of mature woodland habitat within the settled areas of Southern Ontario are important habitats for area sensitive interior forest song birds.	Yellow-bellied Sapsucker Red-breasted Nuthatch Veery Blue-headed Vireo Northern Parula Black-throated Green Warbler Blackburnian Warbler Black-throated Blue Warbler Ovenbird Scarlet Tanager Winter Wren **Special Concern:** Canada Warbler	All Ecosites associated with these ELC Community Series; FOC FOM FOD SWC SWM SWD	Habitats where interior forest breeding birds are breeding, typically large mature (>60 yrs old) forest stands or woodlots >30 ha, • Interior forest habitat is at least 200 m from forest edge habitat. <u>Information Sources</u> • Local bird clubs. • Canadian Wildlife Service (CWS) for the location of forest bird monitoring. • Bird Studies Canada conducted a 3-year study of 287 woodlands to determine the effects of forest fragmentation on forest birds and to determine what forests were of greatest value to interior species • Reports and other information available from Conservation Authorities.	Studies confirm: • Presence of nesting or breeding pairs of 3 or more of the listed wildlife species. • Note: any site with breeding Canada Warblers is to be considered SWH. • Conduct field investigations in spring and early summer when birds are singing and defending their territories. • Evaluation methods to follow “Bird and Bird Habitats: Guidelines for Wind Power Projects” • Significant Wildlife Habitat Technical Guide Index #34 provides development effects and mitigation measures.	Forested portions of the study area do not meet the size and age criteria (*i.e.,* >30 ha, >60 yrs. old).

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

Wildlife Habitat	Wildlife Species	Candidate SHW		Confirmed SWH	Assessment
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	
Marsh Breeding Bird Habitat **Rationale;** Wetlands for these bird species are typically productive and fairly rare in Southern Ontario landscapes.	American Bittern Virginia Rail Sora Common Moorhen American Coot Pied-billed Grebe Marsh Wren Sedge Wren Common Loon Sandhill Crane Green Heron Trumpeter Swan **Special Concern:** Black Tern Yellow Rail	MAM1 MAM2 MAM3 MAM4 MAM5 MAM6 SAS1 SAM1 SAF1 FEO1 BOO1 For Green Heron: All SW, MA and CUM1 sites.	• Nesting occurs in wetlands. • All wetland habitat is to be considered as long as there is shallow water with emergent aquatic vegetation present. • For Green Heron, habitat is at the edge of water such as sluggish streams, ponds and marshes sheltered by shrubs and trees. Less frequently, it may be found in upland shrubs or forest a considerable distance from water. Information Sources • OMNRF District and wetland evaluations. • Field Naturalist clubs • Natural Heritage Information Center (NHIC) Records. • Reports and other information available from Conservation Authorities. • Ontario Breeding Bird Atlas.	Studies confirm: • Presence of 5 or more nesting pairs of Sedge Wren or Marsh Wren or 1 pair of Sandhill Cranes; **or** breeding by any combination of 5 or more of the listed species. • Note: any wetland with breeding of 1 or more Black Terns, Trumpeter Swan, Green Heron or Yellow Rail is SWH. • Area of the ELC ecosite is the SWH. • Breeding surveys should be done in May/June when these species are actively nesting in wetland habitats. • Evaluation methods to follow "Bird and Bird Habitats: Guidelines for Wind Power Projects" • Significant Wildlife Habitat Technical Guide Index #35 provides development effects and mitigation measures	Vegetation communities within the study area are not appropriate to provide this function.
Open Country Bird Breeding Habitat Sources Defining Criteria **Rationale;** This wildlife habitat is declining throughout Ontario and North America. Species such as the Upland Sandpiper have declined significantly the past 40 years based on CWS (2004) trend records.	Upland Sandpiper Vesper Sparrow Northern Harrier Savannah Sparrow **Special Concern** Short-eared Owl Grasshopper Sparrow	CUM1 CUM2	Large grassland areas (includes natural and cultural fields and meadows) >30 ha • Grasslands not Class 1 or 2 agricultural lands, and not being actively used for farming (i.e. no row cropping or intensive hay or livestock pasturing in the last 5 years). • Grassland sites considered significant should have a history of longevity, either abandoned fields, mature hayfields and pasturelands that are at least 5 years or older. • The Indicator bird species are area sensitive requiring larger grassland areas than the common grassland species. Information Sources • Agricultural land classification maps, Ministry of Agriculture. • Local bird clubs. • Ontario Breeding Bird Atlas • Reports and other information available from Conservation Authorities.	Field Studies confirm: • Presence of nesting or breeding of 2 or more of the listed species. • A field with 1 or more breeding Short-eared Owls or Grasshopper Sparrow is to be considered SWH. • The area of SWH is the contiguous ELC ecosite field areas. • Conduct field investigations of the most likely areas in spring and early summer when birds are singing and defending their territories. • Evaluation methods to follow "Bird and Bird Habitats: Guidelines for Wind Power Projects" • Significant Wildlife Habitat Technical Guide Index #32 provides development effects and mitigation measures	Vegetation communities within the study area are not appropriate to provide this function.
Shrub/Early Successional Bird Breeding Habitat **Rationale;** This wildlife habitat is declining throughout Ontario and North America. The Brown Thrasher has declined significantly over the past 40 years based on CWS (2004) trend records.	Indicator Spp: Brown Thrasher Clay-coloured Sparrow Common Spp. Field Sparrow Black-billed Cuckoo Eastern Towhee Willow Flycatcher **Special Concern:** Golden-winged Warbler	CUT1 CUT2 CUS1 CUS2 CUW1 CUW2 Patches of shrub ecosites can be complexed into a larger habitat for some bird species	Large field areas succeeding to shrub and thicket habitats>10ha in size. • Shrub land or early successional fields, not class 1 or 2 agricultural lands, not being actively used for farming (i.e. no row-cropping, haying or live-stock pasturing in the last 5 years). • Shrub thicket habitats (>10 ha) are most likely to support and sustain a diversity of these species. • Shrub and thicket habitat sites considered significant should have a history of longevity, either abandoned fields or pasturelands. Information Sources • Agricultural land classification maps, Ministry of Agriculture. • Local bird clubs. • Ontario Breeding Bird Atlas • Reports and other information available from Conservation Authorities.	Field Studies confirm: • Presence of nesting or breeding of 1 of the indicator species and at least 2 of the common species. • A habitat with breeding Golden-winged Warbler is to be considered as Significant Wildlife Habitat. • The area of the SWH is the contiguous ELC ecosite field/thicket area. • Conduct field investigations of the most likely areas in spring and early summer when birds are singing and defending their territories • Evaluation methods to follow "Bird and Bird Habitats: Guidelines for Wind Power Projects" • Significant Wildlife Habitat Technical Guide Index #33 provides development effects and mitigation measures.	Vegetation communities within the study area are not appropriate to provide this function.

Wildlife Habitat	Wildlife Species	Candidate SHW		Confirmed SWH	Assessment
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	
Terrestrial Crayfish **<u>Rationale:</u>** Terrestrial Crayfish are only found within SW Ontario in Canada and their habitats are very rare.	Chimney or Digger Crayfish; (*Fallicambarus fodiens*) Devil Crayfish or Meadow Crayfish; (*Cambarus Diogenes*)	MAM1 MAM2 MAM3 MAM4 MAM5 MAM6 MAS1 MAS2 MAS3 SWD SWT SWM CUM1 with inclusions of above meadow marsh or swamp ecosites can be used by terrestrial crayfish.	Wet meadow and edges of shallow marshes (no minimum size) should be surveyed for terrestrial crayfish. • Constructs burrows in marshes, mudflats, meadows, the ground can't be too moist. Can often be found far from water. • Both species are a semi-terrestrial burrower which spends most of its life within burrows consisting of a network of tunnels. Usually the soil is not too moist so that the tunnel is well formed. <u>Information Sources</u> • Information sources from "Conservation Status of Freshwater Crayfishes" by Dr. Premek Hamr for the WWF and CNF March 1998	Studies Confirm: • Presence of 1 or more individuals of species listed or their chimneys (burrows) in suitable meadow marsh, swamp or moist terrestrial sites • Area of ELC ecosite or an ecoelement area of meadow marsh or swamp within the larger ecosite area is the SWH. • Surveys should be done April to August in temporary or permanent water. Note the presence of burrows or chimneys are often the only indicator of presence, observance or collection of individuals is very difficult • Significant Wildlife Habitat Technical Guide Index #36 provides development effects and mitigation measures.	Chimneys were not documented within the wetland community.
Special Concern and Rare Wildlife Species **<u>Rationale:</u>** These species are quite rare or have experienced significant population declines in Ontario.	All Special Concern and Provincially Rare (S1-S3, SH) plant and animal species. Lists of these species are tracked by the Natural Heritage Information Centre.	All plant and animal element occurrences (EO) within a 1 or 10km grid. Older element occurrences were recorded prior to GPS being available, therefore location information may lack accuracy	When an element occurrence is identified within a 1 or 10 km grid for a Special Concern or provincially Rare species; linking candidate habitat on the site needs to be completed to ELC Ecosites <u>Information Sources</u> • Natural Heritage Information Centre (NHIC) will have Special Concern and Provincially Rare (S1-S3, SH) species lists with element occurrences data. • NHIC Website "Get Information" : http://nhic.mnr.gov.on.ca • Ontario Breeding Bird Atlas • Expert advice should be sought as many of the rare spp. have little information available about their requirements.	Studies Confirm: • Assessment/inventory of the site for the identified special concern or rare species needs to be completed during the time of year when the species is present or easily identifiable. • The area of the habitat to the finest ELC scale that protects the habitat form and function is the SWH, this must be delineated through detailed field studies. The habitat needs be easily mapped and cover an important life stage component for a species e.g. specific nesting habitat or foraging habitat. • Significant Wildlife Habitat Technical Guide Index #37 provides development effects and mitigation measures.	No Special Concern or Rare species were documented within the development properties in 2019.

3.5 - Animal Movement Corridors

Wildlife Habitat	Wildlife Species	Candidate SHW		Confirmed SWH	Assessment
		ELC Ecosite	Habitat Criteria and Information Sources	Defining Criteria	
Amphibian Movement Corridors **Rationale;** Movement corridors for amphibians moving from their terrestrial habitat to breeding habitat can be extremely important for local populations.	Eastern Newt American Toad Spotted Salamander Four-toed Salamander Blue-spotted Salamander Gray Treefrog Western Chorus Frog Northern Leopard Frog Pickerel Frog Green Frog Mink Frog Bullfrog	Corridors may be found in all ecosites associated with water. • Corridors will be determined based on identifying the significant breeding habitat for these species	Movement corridors between breeding habitat and summer habitat. • Movement corridors must be determined when Amphibian breeding habitat is confirmed as SWH (**Amphibian Breeding Habitat –Wetland)** Information Sources • MNRF District Office. • Natural Heritage Information Center (NHIC). • Reports and other information available from Conservation Authorities. • Field Naturalist Clubs.	• Field Studies must be conducted at the time of year when species are expected to be migrating or entering breeding sites. • Corridors should consist of native vegetation, with several layers of vegetation. • Corridors unbroken by roads, waterways or bodies, and undeveloped areas are most significant • Corridors should have at least 15m of vegetation on both sides of waterway or be up to 200m wide of woodland habitat and with gaps <20mcxlix . • Shorter corridors are more significant than longer corridors, however amphibians must be able to get to and from their summer and breeding habitat. • Significant Wildlife Habitat Technical Guide Index #40 provides development effects and mitigation measures	Amphibian breeding habitat is not present within the development properties.
Deer Movement Corridors **Rationale:** Corridors important for all species to be able to access seasonally important life-cycle habitats or to access new habitat for dispersing individuals by minimizing their vulnerability while travelling.	White-tailed Deer	Corridors may be found in all forested ecosites. A Project Proposal in Stratum II Deer Wintering Area has potential to contain corridors.	Movement corridor must be determined when **Deer Wintering Habitat** is confirmed as SWH • A deer wintering habitat identified by the OMNRF as will have corridors that the deer use during fall migration and spring dispersion. • Corridors typically follow riparian areas, woodlots, areas of physical geography (ravines, or ridges). Information Sources • MNRF District Office. • Natural Heritage Information Center (NHIC). • Reports and other information available from Conservation Authorities. • Field Naturalist Clubs.	• Studies must be conducted at the time of year when deer are migrating or moving to and from winter concentration areas. • Corridors that lead to a deer wintering habitat should be unbroken by roads and residential areas. • Corridors should be at least 200m wide with gaps <20m and if following riparian area with at least 15m of vegetation on both sides of waterway. • Shorter corridors are more significant than longer corridors. • Significant Wildlife Habitat Technical Guide Index #39 provides development effects and mitigation measures	No deer wintering habitat is present on the property.

3.6 - Exceptions for Ecoregion 6E

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

Table 4. Bird Species Observed

Family	Scientific Name	English Common Name	Point Count Stations A, B		Breeding Evidence [C]	Conservation Rank [D]		
			1	Incidental		G-rank [E]	S-rank [F]	SARO Status [G]
Bombycillidae	*Bombycilla cedrorum*	Cedar Waxwing	C(3)[B]		Possible	G5	S5B	NAR
Corvidae	*Corvus brachyrhynchos*	American Crow	C(1)[B]		Possible	G5	S5B	NAR
Corvidae	*Cyanocitta cristata*	Blue Jay	C(1)[B]		Possible	G5	S5	NAR
Emberizidae	*Melospiza melodia*	Song Sparrow	S(1)[A,B]		Probable	G5	S5B	NAR
Fringillidae	*Carduelis tristis*	American Goldfinch	C(5)[A,B]	H	Probable	G5	S5B	NAR
Icteridae	*Agelaius phoeniceus*	Red-winged Blackbird	S(2)[A]		Possible	G5	S4	NAR
Columbidae	*Zenaida macroura*	Mourning Dove		H	Observed	G5	S5	NAR
Icteridae	*Molothrus ater*	Brown-headed Cowbird	C(1)[A,B]		Probable	G5	S4B	NAR
Paridae	*Poecile atricapillus*	Black-capped Chickadee		H	Observed	G5	S5	NAR
Icteridae	*Quiscalus quiscula*	Common Grackle	H(2)[A]		Possible	G5	S5B	NAR
Mimidae	*Dumetella carolinensis*	Gray Catbird	S(1)[A]		Possible	G5	S4B	NAR
Parulidae	*Geothlypis trichas*	Common Yellowthroat	S(1)[A]		Possible	G5	S5B	NAR
Troglodytidae	*Troglodytes aedon*	House Wren	S(1)[A,B]		Probable	G5	S5B	NAR
Turdidae	*Turdus migratorius*	American Robin	S(1)[A,B]		Probable	G5	S5B	NAR
Sturnidae	*Sturnus vulgaris*	European Starling	H(4)[A,B]		Probable	G5	S5	NAR
Cardinalidae	*Cardinalis cardinalis*	Northern Cardinal	S(1)[A,B]		Probable	G5	S5	NAR
Emberizidae	*Spizella passerina*	Chipping Sparrow	S(2)[A,B]		Probable	G5	S5B	NAR

Surveys Conditions:

[A]June 6, 2019; Start Time 0630hr/ End Time 0700hr; Temperature +13°C; Wind B0; Cloud Cover 100%; Precipitation Nil; Observer B.Baker

[B]June 22, 2019; Start Time 0800hr/ End Time 0830hr; Temperature +15°C; Wind B1 S; Cloud Cover 0%; Precipitation Nil; Observer B.Baker

[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

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

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

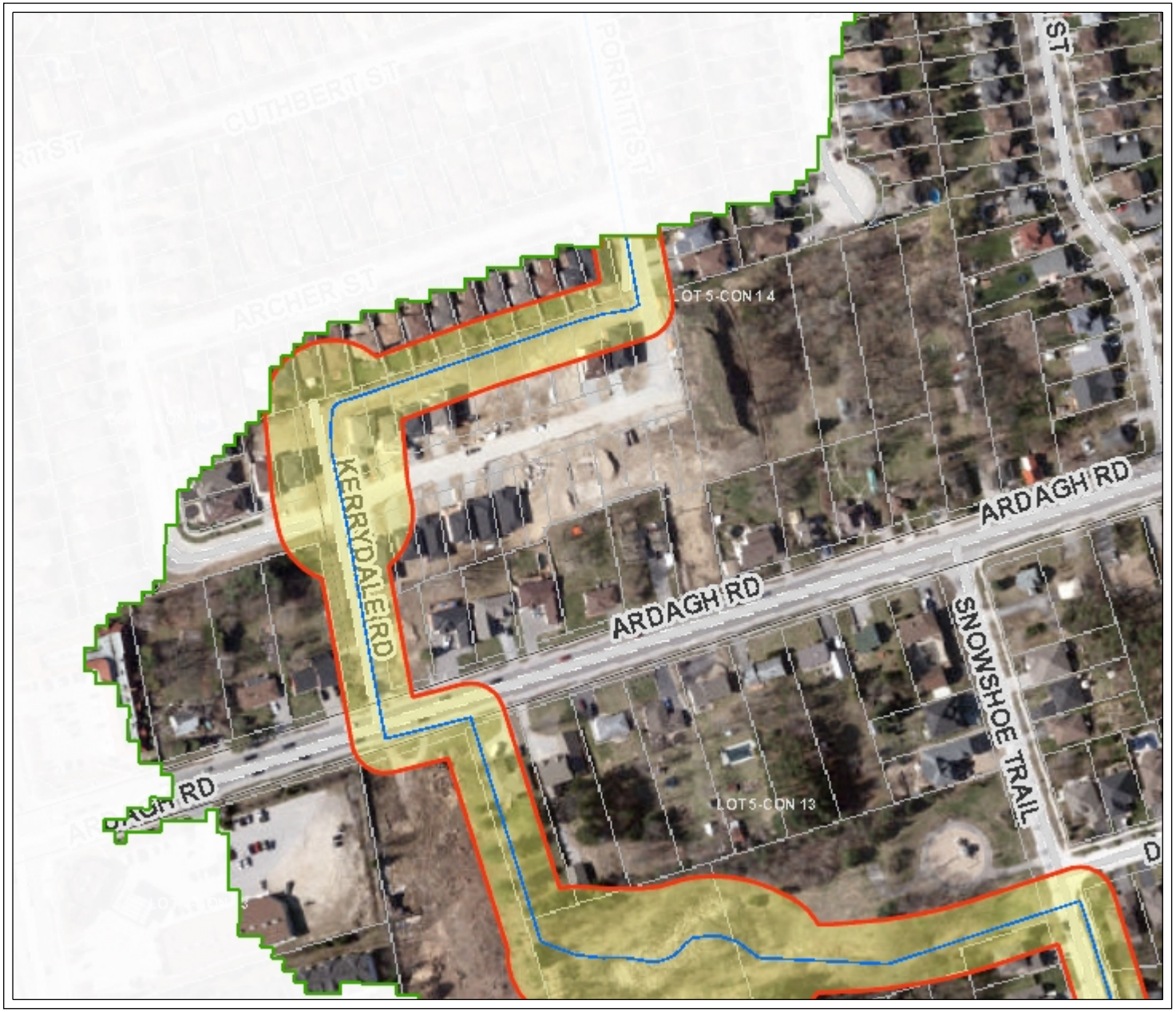
[E]G-Rank - G1 - Critically Imperiled, G2 - Imperiled, G3 - Vulnerable, G4 - Apparently Secure, G5 - Secure

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

APPENDIX A

LSRCA Regulation Mapping & Consultation

Lake Simcoe Region conservation authority



Features

- Regulation Map Index
- LSRCA Watershed Boundary
- Watercourse
- Regulated Area Boundary
- Regulated Area
- Assessment Parcel
- Lot and Concession

Roads

- Hwy 400 Series
- Highway, Arterials
- Local Road

Railway

Printed On:
3/25/2019

WGS_1984_Web_Mercator_Auxiliary_Sphere

Mapped By:

This product was produced by the Lake Simcoe Region Conservation Authority and some information depicted on this map may have been compiled from various sources. While every effort has been made to accurately depict the information, data/mapping errors may exist. This map has been produced for illustrative purposes from an interactive web mapping site. LSRCA GIS Services DRAFT printed 2019. © LAKE SIMCOE REGION CONSERVATION AUTHORITY, 2019. All Rights Reserved. The following data sets of Assessment Parcel, Roads, Upper & Lower Tier Municipalities, Wetlands are © Queens Printer for Ontario. Reproduced with Permission, 2019. The Current Regulation Limit and Boundary data sets are derived products from several datasets. © First Base Solutions, Inc., 2008, 2013, 2016, 2017 Orthophotography

Scale 1: 2,673

Meters

136 0 68 136

Paul Neals

From: Jessica Chan <J.Chan@lsrca.on.ca>
Sent: Friday, January 18, 2019 10:21 AM
To: Paul Neals
Cc: Melinda Bessey
Subject: RE: Pre-consultation D28-007-2018 (180 & 198 Ardagh / 158, 162 and 166 Ardagh Road

Good morning Paul,

The below terms of reference is acceptable with the following additions/corrections:

- Evaluate existing vegetation communities using 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 **two** breeding bird surveys in the appropriate window.
- Record observations of wildlife occurrences and assess wildlife habitat function including significant wildlife habitat on the property.
- Identify, assess and include detailed descriptions of the natural heritage features and functions on the property and the broader natural heritage system that it is within.
- Map natural heritage features (KHNFs & KHFs), vegetation communities and other environmental features (watercourses, wetlands, areas of groundwater discharge, wildlife habitat etc.) and proposed development on current high quality ortho-air photos.
- Provide an assessment of the potential impacts of the proposed development on the natural heritage system and its features along with their related ecological and hydrologic functions.
- Demonstrate conformity with the applicable policies with the Lake Simcoe watershed.
- Develop and provide an appropriate avoidance/mitigation/restoration strategy to address the potential impacts.

Please let me know if you have any questions.

Best,

Jessica Chan, B.Sc.(Env.)
Natural Heritage Ecologist
Lake Simcoe Region Conservation Authority
120 Bayview Parkway
Newmarket, Ontario L3Y 3W3
905-895-1281, ext. 132| 1-800-465-0437
j.chan@LSRCA.on.ca | www.LSRCA.on.ca
Twitter: @LSRCA
Facebook: LakeSimcoeConservation

Please note: the LSRCA Board of Directors approved a change to our Fee Policy. The new fees will take effect on January 1, 2019. Please click here for the new fee schedule.

The information in this message (including attachments) is directed in confidence solely to the person(s) named above and may not be otherwise distributed, copied or disclosed. The message may contain information that is privileged, confidential and exempt from disclosure under the Municipal Freedom of Information and Protection of Privacy Act and by the Personal Information Protection Electronic Documents Act. If you have received this message in error, please notify the sender immediately and delete the message without making a copy. Thank you.

From: Paul Neals [mailto:paul@orionenvironmentalsolutions.com]
Sent: January 9, 2019 11:32 AM
To: Melinda Bessey

Cc: Gregory Barker
Subject: Pre-consultation D28-007-2018 (180 & 198 Ardagh / 158, 162 and 166 Ardagh Road

Hi Melinda

My firm has been asked to provide a proposal to undertake the preparation of the scoped EIS for the ZBA for 158, 162 and 166 Ardagh Road. We need to clarify the status of the regulated area for two reasons; one, the watercourse shown on the mapping in proximity to the site is a storm water pipe that conveys storm water from the stormwater pond south of Ardagh Road north through a residential area; and second Level 1 Natural Heritage Resource (i.e., provincially significant wetlands, non-provincially significant wetlands greater than 0.5 hectare, significant woodlands greater than 10 hectares, significant habitat of endangered and threatened species, watercourses, minimum vegetation protection zones and connectivity linkages, and lands through the site specific planning and development process identified as environmental protection) do not appear to exist. Review of the aerial photography does not show any recognizable watercourse or natural corridor through the residential area.

I know when the natural heritage system mapping was prepared by the City no field verification was done to confirm the presence or significance of the features mapped. During that planning process I provided the City with a letter identifying 10 properties inaccurately identified based on completed/reviewed EIS studies, however the mapping was never corrected. Given the lack of natural features, surrounding urbanization, small size of the site and limited tree cover on the existing lots I would suggest the scope of field work for the EIS be limited to the following:

- Species at Risk Screening
- One site visit for a breeding bird survey (Reason – no expectation of any interior species, all species will be common to urbanized areas based on past surveys on Ardagh Road)
- One site visit for an amphibian breeding survey (Reason – no expectation of pooled water remaining for sufficient time to provide breeding habitat based on other amphibian surveys in the area)
- Spring/summer vegetation survey

This data will then be applied to assess compliance with the applicable policies.

I would appreciate your response as soon as possible so we can complete our proposal and the client can select the successful consultant so the SAR screening can be done this winter for bats.

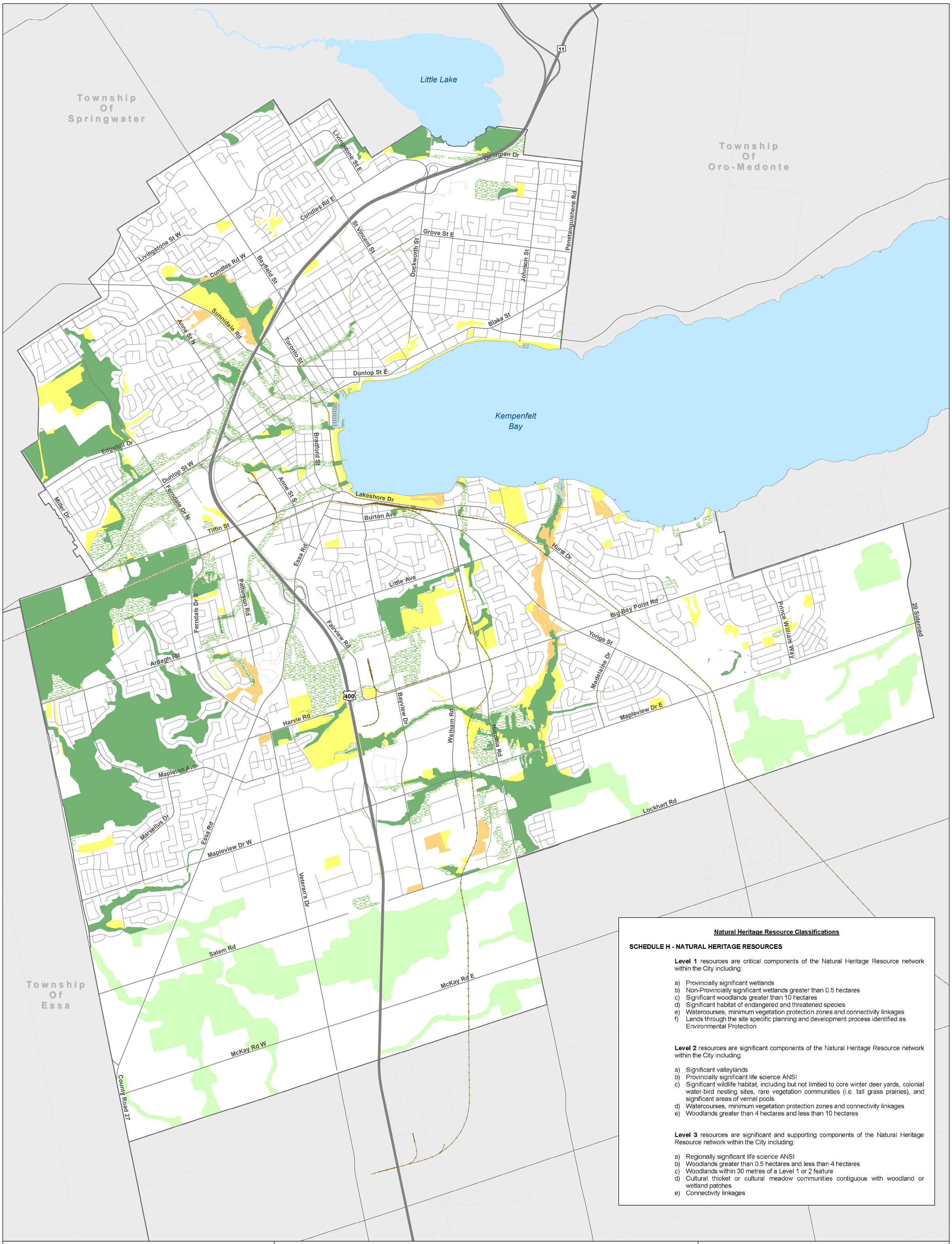
Thanks
Paul

APPENDIX B

City of Barrie Official Plan Schedule H

BIRKS

NATURAL HERITAGE CONSULTANTS



Natural Heritage Resource Classifications

SCHEDULE H - NATURAL HERITAGE RESOURCES

Level 1 resources are critical components of the Natural Heritage Resource network within the City including:

a) Provincially significant wetlands
b) Non-Provincially significant wetlands greater than 0.5 hectares
c) Significant woodlands greater than 10 hectares
d) Significant habitat of endangered and threatened species
e) Watercourses, minimum vegetation protection zones and connectivity linkages
f) Lands through the site specific planning and development process identified as Environmental Protection

Level 2 resources are significant components of the Natural Heritage Resource network within the City including:

a) Significant valleylands
b) Provincially significant life science ANSI
c) Significant wildlife habitat, including but not limited to core winter deer yards, colonial water-bird nesting sites, rare vegetation communities (i.e. tall grass prairies), and significant areas of vernal pools
d) Watercourses, minimum vegetation protection zones and connectivity linkages
e) Woodlands greater than 4 hectares and less than 10 hectares

Level 3 resources are significant and supporting components of the Natural Heritage Resource network within the City including:

a) Regionally significant life science ANSI
b) Woodlands greater than 0.5 hectares and less than 4 hectares
c) Woodlands within 30 metres of a Level 1 or 2 feature
d) Cultural thicket or cultural meadow communities contiguous with woodland or wetland patches
e) Connectivity linkages

OFFICIAL PLAN
Schedule H
Natural Heritage Resources
Office Consolidation
January 2018

- Level 1
- Level 1 with Existing Development Designation Subject to 3.5.2.4 d
- Level 2
- Level 3
- Natural Heritage System Salem and Hewitt's Secondary Plan Areas

Barrie

1:20,000

0 0.5 1 2 km

N

The City of Barrie does not warrant the accuracy, completeness, content, or currency of the information provided.
This is not a legal Plan of Survey
Copyright ©City of Barrie 2017
Produced (in part) under license from:
© Queens Printer, Ontario Ministry of Natural Resources. All rights reserved;
© Her Majesty the Queen in Right of Canada, Department of Natural Resources. All rights reserved;
© Members of the Ontario Geospatial Data Exchange. All rights reserved.
For information please contact Service Barrie at 705-726-4242 or ServiceBarrie@barrie.ca

GIS Branch 4/27/2018

Appendix C

NHIC 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

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

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

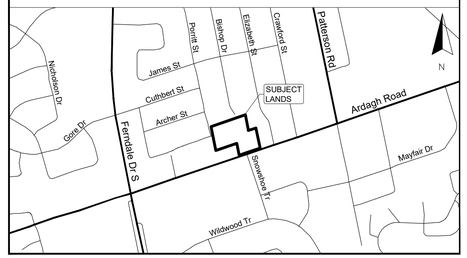
NHIC Data -- Grid ID = 1008256

Element Type	Common Name	Scientific Name	SRank	SARO Status	COSEWIC Status	Last Obs Date	EO ID	Details URL
NATURAL AREA	Bear Creek Wetland (ES6)						10466	http://nhic.mnr.gov.on.ca/natural_areas/areas.php?source=MaMNHA&feature=NA&areaid=
SPECIES	Houghton's Flatsedge	Cyperus houghtonii	S3			1972-10-07	59356	http://nhic.mnr.gov.on.ca/reports/public_details.php?source=1kmgriddetail&nhic_eo_id=59
SPECIES	Snapping Turtle	Chelydra serpentina	S3	SC	SC	2009-10-12	95737	http://nhic.mnr.gov.on.ca/reports/public_details.php?source=1kmgriddetail&nhic_eo_id=95

Appendix D

Detailed Site Plan

KEY MAP — Scale 1:10,000



CONCEPTUAL PLAN

158, 162, 166 & 170 ARDAGH ROAD,
PART OF LOT 5, CONCESSION 14
IN THE
CITY OF BARRIE

Scale 1:3,000

0 5 10 20 30m

LEGEND

- SUBJECT LANDS (Area: 1.62ha / 4.00ac)
- BLOCK/CLUSTER TOWNHOUSE DWELLING
- BACK-TO-BACK TOWNHOUSE DWELLINGS
- STREET TOWNHOUSE DWELLINGS (Area: 0.97ha / 2.40ac)
- BALCONIES
- SMALL LOT AREA
- EXCEEDS LOT COVERAGE (MAX.)

ZONING TABLE - CONDO TOWNHOUSE (31 UNITS)

PROVISION	REQUIRED RM2 ZONE	PROVIDED
Lot Area	720 (min)	7,079.4m² (1.75 ac)
Lot Frontage	21m (min)	102.2m
Setbacks		
Front Yard	7.0m (min)	3.0m
Interior Side Yard	1.8m (min)	1.8m
Exterior Side Yard	3.0m (min)	N.A.
Rear Yard	7.0m (min)	4.5m
Landscaped Open Space	35% (min)	45.0%
Amenity Area	12m² / unit (372.0m²)	1,514.1m²
Lot Coverage	35% (max)	35.0%
Gross Floor Area	60% of lot area (max)	89%
Building Height	10.0m (max)	10.0m
Parking	1.5 / unit (47 spaces, with 1 A & 2 B BF spaces)	72 spaces (10 visitor, with 1A & 2B BF spaces
Tandem Parking	not permitted	permitted
Secondary Means of Access	7.0m	4.5m
Density	40.0 u/ha	43.7 u/ha
Landscaped Buffer Area	3.0m	3.0m

ZONING TABLE - STREET TOWNHOUSE (27 UNITS)

PROVISION	REQUIRED RM2 ZONE	PROVIDED
Lot Area	200.0m² (min)	162.3m²
Lot Frontage	6.0m (min)	6.0m
Setbacks		
Front Yard	4.5m (min)	6.0m
Interior Side Yard	1.8m (min)	1.8m
Exterior Side Yard	3.0m (min)	3.7m
Rear Yard	7.0m (min)	7.0m
Lot Coverage	45% (max)	48%
Building Height	10.0m (max)	10.0m

Source: Parcel fabric by County of Simcoe Interactive Mapping, 2019
Note: This drawing is for discussion purposes only.
The information shown is approximate and subject to change.

CONCEPTUAL PLAN - 58 TOWNHOUSE UNITS

158, 162, 166 & 170 ARDAGH RD - CITY OF BARRIE

RESIDENTIAL	CURRENT OP DESIGNATION
R1(H95) & R3	CURRENT ZONING

SCHEDULE OF REVISIONS

No.	Date	Description	By

INNOVATIVE PLANNING SOLUTIONS
PLANNERS • PROJECT MANAGERS • LAND DEVELOPERS
150 DUNLOP STREET EAST, SUITE 201, BARRIE, ONTARIO L4M 1B1
tel: 705 • 812 • 3281 fax: 705 • 812 • 3438 e: info@ipsconsultinginc.com www.ipsconsultinginc.com

Date:	July 26, 2019	Drawn By:	AS
File:	14-529	Checked By:	GB