



**Environmental Impact Study**

**Graham Property**  
**Lot 28, Concession 9**  
**(geographic Township of Albion and**  
**Part 2 of Plan 43R-21080)**  
**In the Town of Caledon and the Region of Peel**

Prepared for:  
Tim Van Stralen

Prepared by:  
Azimuth Environmental  
Consulting, Inc.

October 2007  
Updated July 2017 and March 2020

AEC06-057



Environmental Assessments & Approvals

March 10, 2020

AEC06-057

Tim Van Stralen  
c/o Robert Russell Planning Consultants Inc.  
1857 Concession Road 2  
Township of Adjala  
Palgrave ON L0N 1V5

Attention: Tim Van Stralen

Re: **2020 Update to Environmental Impact Study for a Property  
Known as Part 2 of Plan 43R-21080  
Located in Lot 28, Concession 9, Town of Caledon, Region of Peel**

Dear Mr. Van Stralen:

As requested, Azimuth Environmental Consulting, Inc. (Azimuth) has completed an update for the Environmental Impact Study (EIS) prepared for the property described above.

The purpose of the 2020 EIS update is to address comments provided by the review agencies including the Town of Caledon (April 23, 2018) and NVCA (April 17, 2018).

Yours truly,  
AZIMUTH ENVIRONMENTAL CONSULTING, INC.

Lisa Moran, B.Sc.Env.  
Terrestrial Ecologist



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## 1.0 INTRODUCTION

Azimuth Environmental Consulting, Inc. (Azimuth) was retained to undertake an Environmental Impact Study (EIS) for a proposed estate residential development to be located in Lot 28, Concession 9 in the Town of Caledon and the Region of Peel (Figure 1). The following applicable policies have triggered the Region of Peel to require an EIS: the property is located within the Greenbelt Plan Area (MMAH, 2017), it contains areas designated as Environmental Zones (1 and 2) in the Town of Caledon Official Plan (2018), and is part of the Oak Ridges Moraine Conservation Plan (ORMCP) Area (2017).

The EIS report was originally prepared in October 2007. The report was then updated in 2017 to address comments received by the Town of Caledon, Nottawasaga Valley Conservation Authority (NVCA) and R.J. Burnside & Associates. The updated 2017 report was reviewed and comments have been provided by the review agencies including the Town of Caledon (April 23, 2018) and NVCA (April 17, 2018). The purpose of the 2020 Updated EIS is to address the most recent comments from the Town of Caledon and NVCA. The policy sections within the EIS related to the Region of Peel and Town of Caledon have been updated to reflect recent updates within their Official Plans, however, this application was commenced under a previous version of the Official Plans and as per the Clergy principle should be evaluated under the former policies.

In addition, a secondary report addressing the issues of the proposed development and its conformity to Official Plan Amendment (OPA) 186 of the ORMCP was prepared as a part of the original 2007 EIS report.

## 2.0 PLANNING CONTEXT

### 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). According to the PPS development and site alteration shall not be permitted in:

- *Significant wetlands* in Ecoregions 5E, 6E and 7E, and,
- *Significant coastal wetlands*.

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

- *Significant woodlands* in Ecoregions 6E and 7E;
- *Significant valleylands* in Ecoregions 6E and 7E;



- *Significant wildlife habitat;*
- *Significant areas of natural and scientific interest;* and
- *Coastal wetlands* in Ecoregions 5E, 6E and 7E that are not considered to be significant.

Section 2.1.6 of the PPS states that development and site alteration is not permitted in fish habitat except in accordance with federal and provincial requirements.

Section 2.1.7 of the PPS states that development and site alteration shall not be permitted in habitat of Endangered (END) and Threatened (THR) species, except in accordance with provincial and federal requirements.

Furthermore, under Section 2.1.8 of the PPS, no development and site alteration will be permitted on lands adjacent to natural heritage features and areas defined above unless the ecological function of the adjacent lands has been evaluated and it has been demonstrated there will be no negative impacts on the natural features and ecological functions.

It is ultimately the responsibility of the Province and/or the Municipality to designate areas identified within Section 2.1.4 of the PPS as significant.

## **2.2 Endangered Species Act (Ontario)**

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

The various schedules of the ESA identify Species at Risk (SAR) in Ontario. These include species listed as Extirpated, END, THR and Special Concern (SC). Only species listed as END and THR receive protection from harm and destruction to habitat on which they depend.

Species listed under Ontario Regulation (O.Reg.) 230/08 of the ESA are addressed in this report.

## **2.3 Greenbelt Plan (2017)**

The property is within the Greenbelt Area within the Oak Ridges Moraine Area (Appendix A). According to Section 2.1 of the Greenbelt Plan, the requirements of the



ORMCP (O. Reg. 140/02), made under the Oak Ridges Moraine Conservation Act, 2001, continue to apply and the Protected Countryside policies do not apply with the exception of section 3.3. Section 3.3 of the Greenbelt Plan describes the policies surrounding Parkland, Open Space and Trails.

#### **2.4 Oak Ridges Moraine Conservation Plan (2017)**

The property is located within the Palgrave Estates Residential Community which is a component of the Countryside Area (Appendix A). Sections of the ORMCP that are relevant to this proposed development include the following:

- Section 20 pertaining to the support of landscape connectivity within development planning;
- Section 21 pertaining to minimum areas of influence and minimum vegetation protection zones;
- Section 22 pertaining to development with respect to key natural heritage features;
- Section 23 pertaining to natural heritage evaluations; and
- Section 26 pertaining to hydrologically sensitive features.

#### **2.5 Region of Peel (2018)**

The property falls within an Estate Residential Community within an Area with Special Policies (Appendix A). The property is further identified within the Palgrave Estates Residential Community (Appendix A). As per Section 2.2.9.3.7 of the Region's Official Plan, the Palgrave Estate Residential community is an additional component of the Countryside Area (within the ORMCP) and residential development is permitted, subject to the Town of Caledon Official Plan and specified provisions of the ORMCP. As indicated above, the property is also located within the Greenbelt and Oak Ridges Moraine (ORM) Planning Areas. The Greenbelt defers to the ORMCP, with relevant policies listed above in section 2.4.

#### **2.6 Town of Caledon (2018)**

The property is located within the Palgrave Estate Residential Community [Section 7.1, Schedule I (Appendix A), Town of Caledon Official Plan (Caledon OP), 2018], which permits the development of estate residential plans of subdivision. Schedule I delineates Environmental Zones within the Palgrave Estate Residential Community; small sections of the property are designated as either Environmental Zone 1 or 2 (EZ1 or EZ2). Section 7.1.9.1 of the Caledon OP outlines the definitions for these zoning designations. Section 7.1.9.2 Caledon OP states that: *“The specific type(s) of individual EZ 1 and EZ 2 features and refinements to their boundaries shall be determined through detailed*



*studies, such as a Natural Heritage Evaluation and/or Hydrological Evaluation, or the requirements of Section 7.1.18 where applicable*". Therefore, potential boundary refinements for areas designated as EZ1 and EZ2 are subject to evaluation in this EIS.

Within the Palgrave Estate Residential Community, the property is located within Policy Area 3 (Schedule G; Appendix A). The uses permitted on lands designated as Policy Areas 1, 2 and 3, exclusive of lands designated EZ 1 on Schedule I, will be agriculture and associated residential uses, rural estate residential uses, conservation, open space, non-intensive recreation, intensive recreation, including golf courses, residential uses on existing lots of record and new lots created by consent, legally existing uses, home occupations, small scale institutional uses, and presently licensing extractive industrial uses.

The Town of Caledon has a program in place that will permit the development of additional lots within a subdivision development, on lands approved for development, provided areas of reforestation are established. For every 4 hectares (ha) of land to be reforested an additional residential lot may be permitted (Section 7.1.9.12).

## **2.7 Nottawasaga Valley Conservation Authority**

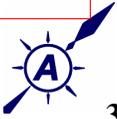
The property is located within the jurisdiction of the NVCA. The NVCA administers the Regulation of Development, Interference with Wetlands and Alteration to Shorelines and Watercourses (O. Reg. 172/06) made under the *Conservation Authorities Act*, 1990. A portion of the property is currently regulated under O. Reg 172/06 (Appendix B). There is no development or site alteration proposed as a part of this application within the NVCA regulated lands.

## **3.0 STUDY APPROACH**

### **3.1 Study Area**

The proposed development is located in Nottawasaga River watershed (Ecoregion 6E) on part of Lots 28 and 29, Concession 9 in the Town of Caledon.

For the purpose of this project, the 'property' refers to the entire assessment parcel on which development is proposed. 'Adjacent lands' include areas of adjacent parcels and includes lands within 120m of the property; these may be discussed if and when considered pertinent to the Azimuth's impact assessment. Both the property and adjacent lands comprise the study area.



### 3.2 Study Approach and Background Data

A combination of field investigation and searches of background information was used to fulfill objectives of the EIS. Azimuth consulted with NVCA to confirm the scope of work undertaken for this project. NVCA responded to indicate that the level of field work completed is generally satisfactory but SAR consideration should be given to grassland birds (Appendix B). Azimuth undertook the following research and field activities for this study to satisfy the information requirements of the NVCA:

- Obtained background information related to the property and surrounding area from the Town of Caledon, the Region of Peel, and the Ministry of Natural Resources and Forestry (MNRF);
- Classified vegetation communities of the property based on air photo interpretation and site visits conducted on July 5, 2006, June 12, 2007, July 23, 2007 and February 5, 2019 using the general methods of the Ecological Land Classification System (ELC) for southern Ontario (Lee *et al.* 1998);
- Conducted reconnaissance plant surveys of the property on July 5, 2006, June 12, 2007, July 23, 2007 and February 5, 2019;
- Conducted an early morning spring breeding survey on June 12, 2007 and documented incidental observations of wildlife on the property during site visits;
- Assessed the property for the presence of plant and animal species of conservation concern locally, provincially or nationally;
- Mapped the distribution of vegetation communities and significant natural heritage features of the property on aerial photography to show the relationship between these features;
- Assessed the impact of the proposed conceptual development on the natural heritage features of the property;
- Conducted a hydrogeological assessment of slopes, soil and soil drainage, and seasonal water table;
- Assessed the potential impacts of the proposed development plan on environmental features of the property and adjacent lands; and
- Developed a mitigation strategy to address the potential environmental impacts.

A review of background documents provided information on site characteristics, habitat, wildlife, rare species and communities, and general cultural/historic aspects of the study area. This background data review included:

- Aerial images (Google, VuMap);
- MNRF's Natural Heritage Information Center (NHIC) Make-A-Map: Natural Heritage Areas application [website];



- MNRF SAR Information Request (Appendix C);
- Atlas of the Breeding Birds of Ontario (OBBA) [website];
- MNRF's Species at Risk in Ontario list;
- ELC for Southern Ontario (Lee *et al.* 1998);
- Ontario Nature – Ontario Reptile and Amphibian Atlas [website];
- Dobbyn, J. (1994) – Atlas of the Mammals of Ontario; and
- NVCA Interactive Mapping [website].

ORM flora and fauna ranks and scores were used to evaluate ORM rarity and Riley (1989) was used to determine regional rarity.

### 3.3 Vegetation Community Mapping and Surveys

ELC for Southern Ontario (Lee *et al.*, 1998) was used as a general guide to the classification of vegetation community types. Azimuth pre-evaluated vegetation communities based on air photo interpretation using recent aerial photo imagery for the study area. ELC and mapping was completed during site visits on July 5, 2006, June 12, 2007, July 23, 2007 and February 5, 2019. Table 1 describes the vegetation communities identified on site and provides detailed explanations for the ELC community codes used in this report (*e.g.* FOD, CUP). Figure 2 depicts the locations of each community classified on the property.

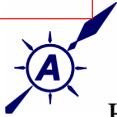
Azimuth also conducted reconnaissance plant surveys of the property on July 5, 2006, June 12, 2007, July 23, 2007 and February 5, 2019. Vascular plant data is provided in Table 2.

### 3.4 Wildlife Surveys

Azimuth Ecologists conducted a dawn breeding bird survey on June 12, 2007 and documented incidental observations of wildlife on the property during site visits. Survey details and data for breeding birds are provided in Table 3.

### 3.5 Species at Risk

The SAR screening included an analysis of the habitat requirements of SAR reported to occur in the area to identify those having potential to occur on or adjacent to the property based on habitats present. Background information was obtained from the MNRF, who provided a list of species that have the potential to occur within the study area (Appendix C). These species have been incorporated into our assessment (Table 4). A dawn breeding bird survey helped determine if any SAR birds are utilizing the property and/or adjacent lands. During vascular plant and ELC surveys Azimuth ecologists were conscious of any SAR or rare species with potential to occur within the surveyed areas.



Habitat requirements and appropriate designations (END, THR, or SC) for all species included in the screening are outlined in Table 4.

## 4.0 EXISTING CONDITIONS

### 4.1 Land Use

#### 4.1.1 On-site Land Use

The property is 30.17ha in size and located southeast of the Highway 9 and Mount Pleasant Road intersection. The western two-thirds of the property are occupied by active agricultural land use (wheat and soy) and a small coniferous plantation (Figure 2). The eastern portion of the property is occupied by an existing residential lot and several cultural and disturbed vegetated communities located in proximity to the residence.

#### 4.1.2 Adjacent Land Use

Adjacent lands to the north, south, and east are also occupied by agricultural land use containing the occasional rural residences and farmsteads. The property to the west is occupied by a residential subdivision development within a former coniferous plantation.

### 4.2 Terrestrial Resources

#### 4.2.1 Vegetation

Azimuth ecologists documented approximately 100 species of vascular plants within the study area (Table 2). None of the plant species observed are considered rare in the NVCA watershed (Riley, 1989). One plant species observed on the property, Black Walnut (*Juglans nigra*), is considered rare within the boundaries of the ORM. The Black Walnut was observed within vegetation community CUW1 in proximity to the existing residence in the northwest portion of the property where trees have been planted; it is likely a result of past planting efforts. Species of regional rarity do not receive habitat protection. None of the species observed are considered provincially or nationally rare, nor are they of federal or provincial conservation concern.

There are no elements of occurrence (EO ID) records for provincially rare, END or THR vegetation species were on file with the MNRF NHIC database (NHIC 2019) on the property or on adjacent (*i.e.* within 120m) lands.

#### 4.2.2 Wetlands

No wetland communities were observed or documented on or adjacent to the property during Azimuth's field studies. Likewise, no wetland communities have been mapped by the MNRF or NVCA within proximity (120m) of the proposed development (Appendix B and C).



#### 4.2.3 Woodland

Woodland units have been identified on site (*i.e.* CUP, CUW and FOD communities at either end of the property, Figure 2). The woodland feature in the northeast section of the property is contiguous with woodland in the adjacent lands.

#### 4.2.4 Wildlife

Wildlife species utilizing the property were identified from direct observation and through interpretation of sign (*i.e.* tracks, scats, vocalizations) as a matter of course while conducting site visits. Mammal species detected using the property included White-tailed Deer (*Odocoileus virginianus*), Eastern Cottontail (*Sylvilagus floridanus*), Eastern Chipmunk (*Tamias striatus*), Grey Squirrel (*Sciurus carolinensis*), Red Squirrel (*Tamiasciurus hudsonicus*) and Meadow Vole (*Microtus pennsylvanicus*). None of the species observed are of provincial conservation concern or are rare within the NVCA watershed.

There are records for Eastern Meadowlark and Eastern Wood-pewee within the general area according to the MNRF NHIC online database (NHIC 2019).

According to the OBBA database there were four regionally rare bird species that were listed in the Breeding Bird atlas square as confirmed breeders (Appendix D). These species are Common Merganser, Barred Owl, Hermit Thrush, and White-winged Crossbill (2001-2005 survey (*includes the subject area*, 17NJ96, see Appendix D).

A total of 20 bird species were observed on the property during the field investigations. Bird species observed on the property are listed in Table 3.

None of the bird species observed on the property are rare within the boundaries of the Oak Ridges Moraine (ORMCP, 2002). Only Grasshopper Sparrow is considered at-risk provincially and is designated as SC.

### 4.3 Terrestrial Species at Risk

SAR were assessed for their potential to occur within the habitats present on or adjacent to the property (Table 4). The following species were identified to have potential to occur within the study area:

- Mammals: Little Brown Myotis (*Myotis lucifugus*) (END), Northern Myotis (*Myotis septentrionalis*) (END) and Tri-colored Bat (*Perimyotis subflavus*) (END);
- Birds: Barn Swallow (*Hirundo rustica*) (THR) and Grasshopper Sparrow (SC).



Of the species listed above, only Grasshopper Sparrow was documented to occur on the property.

#### **4.4 Aquatic Resources.**

There are no permanent or intermittent watercourses on the property, and therefore no fish habitat. This was confirmed on site in March 2016 when NVCA (Dave Featherstone and Lee Bull) met with Town staff and the project team on site to review potential EZ features (Appendix B).

## **5.0 NATURAL HERITAGE FEATURES AND FUNCTIONS**

### **5.1 Significant Wetland**

There are no wetlands identified on the property (Figure 2). There are no Provincially Significant Wetlands (PSW) located on or adjacent (*i.e.* within 120m) of the property (Appendix C).

### **5.2 Habitat for Threatened and Endangered Species**

Potential habitat for THR and END species was identified on and adjacent to the property through a SAR assessment (Table 4). Our assessment considered field survey data and an evaluation of the potential functions of natural and cultural vegetation communities found on the property. Potential habitat for the following species was identified:

#### **5.2.1 END Bat Species**

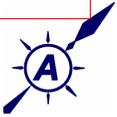
Little Brown Myotis, Northern Myotis and Tri-colored Bat use a wide variety of habitats for summer roosting including rock crevices, buildings, bridges, caves, mines, and large snags (>25cm diameter at breast height) in the early stages of decay within coniferous, deciduous and mixed forest/swamp communities (MNR 2014, COSEWIC 2013a). Forest communities located at the northeast section of the property (Figure 2) may provide suitable roosting habitat for these END bat species.

#### **5.2.2 Barn Swallow**

The property provides some potential habitat function for this species. A potentially suitable nesting structure (existing dwelling) is present on the property, and the adjacent cultural meadows/agricultural lands provide potential foraging opportunities. Azimuth's field studies yielded no observations or indication that Barn Swallow is utilizing the property.

#### **5.2.3 Butternut**

The hedgerows and woodland communities provide potentially suitable habitat for Butternut. There were no Butternut documented during Azimuth's field investigations.



### **5.3 Fish Habitat**

There are no watercourses or fish habitat on the property (Figure 2).

### **5.4 Areas of Natural and Scientific Interest**

There are no ANSI's on or adjacent (*i.e.* within 120m) of the property (Appendix C).

### **5.5 Significant Valleylands**

There are no valleylands on the property.

### **5.6 Significant Woodlands**

Two woodland units have been identified on the property (Figure 2).

The woodland unit in the southwest portion of the property is entirely cultural plantation, measuring less than 1ha in size. According to the ORMCP Technical Paper No. 7, significant woodlands in ORM Countryside land designations do not include managed plantations and must be a minimum of 4ha in size. This woodland unit does not meet the abovementioned specifications and therefore, is not considered significant according to the ORMCP.

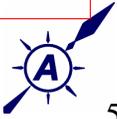
The woodland unit in the northeast portion of the property is contiguous with an off-site woodland, measuring less than 4ha in size.. Furthermore, there are no Key Natural Heritage Features (KNHF) or Hydrologically Sensitive Features (HSF) or their associated Minimum Vegetation Protection Zone that intercept the woodland. Therefore; the woodland on the property would not be considered to be significant according to the ORMCP.

### **5.7 Candidate Significant Wildlife Habitat**

Potential Significant Wildlife Habitat (SWH) was identified on and adjacent to the property through a SWH assessment (Table 5.1-5.6). Our assessment considered field survey data, NHIC data for tracked species, and an evaluation of the potential functions of natural and cultural vegetation communities found on the property. The following candidate SWH was identified:

#### **5.7.1 Bat Maternity Colonies**

Forest communities and an existing dwelling, features both located at the east section of the property (Figure 2), may provide suitable habitat for bat maternity colonies.



### 5.7.2 Special Concern and Rare Wildlife Species

#### Grasshopper Sparrow

A singing male Grasshopper Sparrow was documented during Azimuth's breeding bird surveys within the agricultural fields on the property.

### 5.8 Sand Barrens, savannahs and tallgrass prairies

There are no sand barrens, savannahs or tallgrass prairies on the property (Figure 2).

### 5.9 Key Natural Heritage Features Summary

These Natural Heritage Features and Candidate Features are included within our Impact Assessment:

- Candidate SWH (Bat Maternity Colony, Special Concern & Rare Wildlife Species);
- Potential habitat for END or THR Species (END bat species, Barn Swallow (THR) and Butternut (END)).

## 6.0 PROPOSED DEVELOPMENT

The development concept for the property includes the establishment of a new 21 lot residential subdivision, plus a lot to contain the existing dwelling on the eastern half of the property (Figure 3). The lots will be accessed from a cul-de-sac road off of Mt. Pleasant Road. Water will be provided by municipal services and wastewater will be dealt with by individual septic systems. A stormwater management pond located in the southern most corner (Block 23) of the property will service the proposed development.

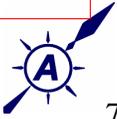
The proposed development plan also incorporates the reforestation of a total of 12.2 ha within the 30.17ha property in keeping with an objective of the Town of Caledon Official Plan (2018). The areas to be reforested include a portion of the rear of each of the residential lots and the majority of the eastern half of property (Figure 3).

## 7.0 IMPACT ASSESSMENT

### 7.1 Candidate Significant Wildlife Habitat

#### 7.1.1 Bat Maternity Colonies

(See 7.2.1)



### 7.1.2 Special Concern and Rare Wildlife Species

#### Grasshopper Sparrow

The type of agriculture on this property (row cash crops) does not function as potential breeding or nesting habitat for this species. Although potential breeding behaviour was observed during surveys, there is no potential for breeding activity to occur on the property. Any potential function associated with small cultural communities within the east portion of the property will be maintained post-development.

## **7.2 Habitat for Threatened and Endangered Species**

### 7.2.1 END Bat Species

Development is restricted to the west portion of the property where no areas of natural or cultural cover are present. The plantation within the southwest portion of the property is young and does not offer potentially suitable habitat for SAR bats. Potential habitat function associated with the existing dwelling and forest communities on the east portion of the property would remain post-development.

### 7.2.2 Barn Swallow

Any potential nesting function associated with the existing dwelling on the property would remain post-development. While there is potential foraging function associated with areas of agricultural cover on the property, an abundance of higher quality opportunities are likely present within the general area. For Barn Swallows, both urban and rural residential areas are considered to be foraging habitat for the species within Ontario (MNR, 2014).

## **7.3 General**

### 7.3.1 Vegetation

The portion of the property occupied by active agricultural land use will be replaced by the proposed estate residential subdivision including reforestation areas (Figure 2). The cultural woodland community (CUW1) and 0.45ha of the cultural plantation in the southwest portion of the property will remain unchanged, as it is contained within the proposed reforestation area. The remaining 0.27ha of this plantation will be removed due to the proposed development of the stormwater management pond (SWMP). Opportunity exists to transplant the trees within the plantation to another area on the property that will be protected for the long-term. The small deciduous forest community (FOD4) in the southwest corner of the property is proposed to be removed as part of the SWMP. A large proportion of the manicured lawn associated with the existing residence is being proposed for reforestation. All of the existing vegetation communities located in proximity of the existing residence will remain unchanged (Figure 2).



The plant species, Black Walnut (*Juglans nigra*), observed on the property that is considered rare within the boundaries of the ORM will not be impacted by the proposed development (Figure 2).

### 7.3.2 Wildlife

The wildlife species detected on the property are all species generalists, found commonly in agricultural areas throughout southern Ontario. The continually disturbed habitats of the agricultural fields and manicured lawns will be lost with the proposed development of the property. There will be no loss or disruption of the habitat function of existing forested and field vegetation communities on the east portion of the property. In addition, the proposed development plan will result in the reforestation of approximately 12.2ha of the property, providing a greater area and diversity of wildlife habitat (as the community matures).

The four regionally rare bird species confirmed breeding in the OBBA square all require more specialized habitat than this property currently provides. The Common Merganser is a duck species requiring large water bodies surrounded by forests to breed in (Cornell, 2006). Barred Owl requires large continuous mature or old-growth forest tracts to breed in (Cornell, 2006). Hermit Thrush requires interior forest with a preference for internal forest edges and the White-winged Crossbill requires mature conifer forest habitat (Cornell, 2006). This property does not contain any waterbodies, large tracts of deciduous or coniferous forest habitat, and thus, it could not support any of the four regionally rare bird species confirmed breeding in the OBBA square associated with the property.

## 8.0 RECOMMENDATIONS

### 8.1 Timing Restrictions

Limited tree removals associated with hedgerow and young plantation habitat may be required. Tree removals should be restricted outside the window of April 1 – October 31 of any given year to avoid impacts to bird nests containing eggs and/or chicks. This recommendation is also important to ensure no contraventions of the ESA related to END bats. While the trees within the fencerow are not expected to facilitate bat maternity colonies, lone males will continually move through the landscape and could utilize fencerow trees for daily roosting throughout this period.

### 8.2 Species at Risk

While no SAR are expected to be encountered within the proposed development limits on this property, on-site workers should be trained of SAR that are common in the general area and have potential to occur on-site. Workers should be instructed to stop work



immediately and contact the local Ministry of Environment, Conservation and Parks office immediately if any SAR are encountered within the work area. Individuals working on-site should ensure that SAR are not harmed during construction or killed by heavy machinery, vehicles or other equipment.

### **8.3 Sediment and Erosion Controls**

At the time of development, install silt control fencing adjacent to areas where development contractors deem erosion to be a concern. Install silt controls based on best management practices in place at the time of future development; monitor and maintain the fencing throughout the development and during construction activities to ensure a protective barrier to sedimentation. Where sediment and erosion controls are employed, the contractor should avoid the use of wire mesh fencing and erosion control blankets which have the potential to trap wildlife. Restore areas of disturbed/exposed soil as soon as possible, stabilizing the areas with native trees, shrubs, grasses or other suitable native vegetation.

### **8.4 Environmental Management and Reforestation Plan**

The proposed development plan incorporates the reforestation of approximately 12.2 ha of the property. The areas to be reforested include a portion of the rear of each of the residential lots and the majority of the eastern half of property (Figure 3). The gentle slopes and arability of most of the property indicate that reforestation is ideally suited. Where steep slopes are present in Block 22, strategic selection of species and management protocol will be required to ensure successful reforestation.

The areas proposed for reforestation are primarily devoid of any natural vegetation communities (currently in crop production or comprised of manicured grass) with the exception of the southwest corner of the property which is in a state of early succession due to the recent (*i.e.* < 10 years) change in land use from agriculture to managed plantation. Therefore; the potential to improve the ecological form and function of the area at the landscape level is significant. The establishment of native tree and shrub species in the formation of forested habitat will provide wildlife habitat and increase not only the area of forest habitat, but diversity of vegetation community and species. The reforestation of the eastern side of the property will increase the size of the matrix of forest/woodland/field habitat located to the east of the property while maintaining the existing forest communities. These areas will also provide a vegetative buffer from the road for local residents. The ground layer species could be expected to naturally colonize the area over time.



The specific species assemblages, densities and planting techniques needed for the establishment of the proposed reforestation area will be dealt with in the detailed site design approval process.

We would recommend the installation of a sediment fence at the southern perimeter to prevent any sediment from running off of the site. At this time, there are no additional protection measures required for the recommend Reforestation Area and associated planting that is to occur within and around the identified EZ areas. Care should be taking when working around treed habitats that trees that are to remain on the landscape are not damaged during enhancement operations.

## **9.0 POLICY AND REGULATION CONFORMITY**

### **9.1 Provincial Planning Policy**

There are no PSW's or ANSI's on or adjacent (*i.e.* within 120m) of the property. To our knowledge the province or municipality has not identified Significant Woodlands or Valley Lands on or adjacent to the property. There are no watercourses or water bodies on the property and, therefore, no fish habitat. Habitat for THR and END Species is addressed within Table 4 and above in section 7.1, where it is determined that no potential significant habitat function exists within the proposed development envelope on the property for any THR or END species. Candidate SWH is addressed within Table 5 and above in section 7.1, where it is determined that there will be no impacts to potential SWH on the property. Therefore, the proposed development is in conformity with both the ESA (2007) and the PPS (2014).

### **9.2 Oak Ridges Moraine Conservation Plan Act**

Since the property does not contain any KNHF or HSF the relevant sections of the ORMCP (Sections 20, 21, 22, 26) do not apply. The property is subject to the conformity requirements of OPA 186 of the Oak Ridges Moraine Act. A secondary report addressing the issues of the proposed development and its conformity to OPA186 of the ORMCP has been prepared to accompany this report (Appendix E). Further, this report satisfies the natural heritage evaluation requirement of Section 23, and thus, is in conformity with relevant policies for the ORMCP.

### **9.3 Town of Caledon**

The proposed estate residential development is a permitted use within the Palgrave Estates Residential Community Policy Area 3.



Both EZ1 and EZ2 is currently identified on the property according to Schedule I of the Town's OP and as depicted on Figure 2, parts of which are contained within the proposed building envelope.

The EZ1 designated areas within the westernmost portion of the property are contained within the agricultural fields of the west, including within the proposed building envelope (Appendix A, Figure 2). This EZ1 designated areas are under cover of row-planted cash crops, and thus, from a natural heritage perspective are providing no significant ecological function. Based on our understanding of the EZ1 criteria, all areas of active agriculture on the property should have EZ1 designations removed. Provided our recommendations are accepted, the proposed development will be in conformity with Township policies.

Subsequent to our initial assessment, during the March 2016 on-site investigation, it was confirmed that the mapped westernmost 'feature' does not meet the definition of either EZ1 or EZ2 (Appendix A). NVCA is in agreement that the EZ1 feature currently mapped on the west portion of the property is indistinct on the landscape and does not need either the EZ1 or EZ2 status (NVCA, 2018).

The central EZ1 feature (to the east), in actuality is confirmed as an EZ2 feature as it is a dry lowland swale that performs natural run-off, detention and ground water recharge functions (as confirmed by the sandy soils present on the site). NVCA has indicated that the two south arms should also be included within the EZ2 mapping (NVCA, 2018). As shown by the topographic contours, these areas are swales and will direct runoff. The shallow soils are sandy in nature and will allow infiltration, although the soils are consistent with the remainder of the property and therefore the infiltration function is not enhanced within the swale area. The water table is at depth and therefore the EZ2 designation is not related to a shallow water table. Any functions of the area designated as EZ2 on the property will remain post-development, as these sections of the property is not contained with the building envelope (Figure 3).

Within the east portion of the property, EZ1 designated areas exists that is associated with the woodland habitat (Appendix A, Figure 2). The EZ1 features include areas of native upland and lowland woodlands. Although the CUP3-1 is not considered to be native, we are proposing to include these areas within the EZ1 designation to maintain the existing forest cover on the property. Since the woodland is not a KNHF, only the feature itself would be considered EZ1. There is no related Minimum Vegetation Protection Zone associated with this feature. All forested areas would also be maintained post-development.



Figure 2 depicts the current EZ1 and EZ2 mapping within the Town OP. Figure 3 depicts the recommended EZ1 and EZ2 designations based on the current conditions of the property and as confirmed by NVCA in addition to 2018 NVCA comment (related to EZ2 zones).

## 10.0 CONCLUSIONS

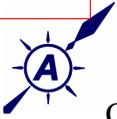
The proposed development plan will result in the development of 21 estate residential lots, the maintenance of the existing residence (lot 22), and the reforestation of nearly 12.2ha of active agricultural land and manicured grass. The proposed development plan will not result in the removal or negative impact of the existing forest and old field vegetation communities on the property. The proposed development does not affect PSW, ANSI, Significant Woodlands, Valley Lands or Wildlife Habitat on or adjacent (*i.e.* within 120m) of the property as defined by the Provincial Policy Statement (MMAH, 2014). There are no watercourses or water bodies and therefore, there is no fish habitat on the property. No habitat of federally or provincially THR or END species will be affected by the proposed development plan.

No KNHF, or HSF were found as described in the ORMCP (2017). The recommended Environmental Zone 1 included forest habitat on site (Figure 3). The areas of the property recommended as Environmental Zones 2, is a topographic low that conveys occasional seasonal over land flow. These features are located east of the proposed development footprint and will be maintained and is included as part of the area being proposed for reforestation (Figure 3). The reforestation of the feature will not impact its function to accommodate occasional seasonal over land flow, provided that reforestation/re-vegetation planning incorporates site specific species recommendations. The property is within an area mapped as the Palgrave Estate Residential Community area in which estate residential subdivision development may be permitted if the environmental features are not adversely impacted (Town of Caledon, 2018). Our assessment did not identify any adverse environmental impacts within the proposed development and, as such, is in compliance with the policies of the Town.



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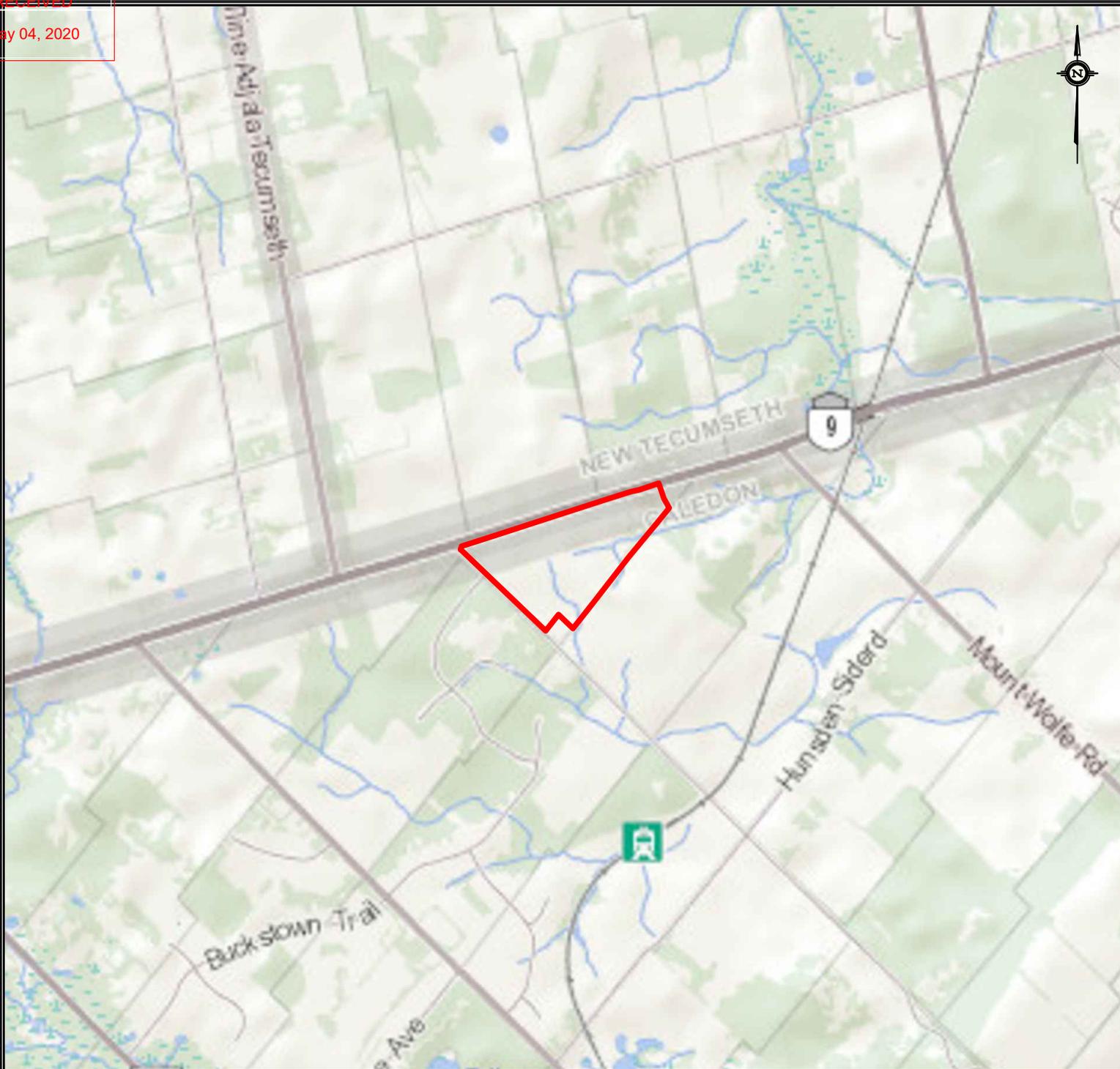
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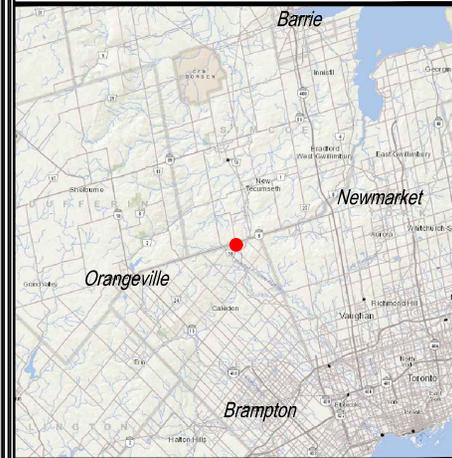
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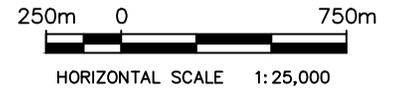


**LEGEND:**

 *Approx. Property Boundary*



REG MAP



Study Area Location

Lot 28 Concession 9,  
 Town of Caledon, ON

DATE ISSUED: <i>October 2019</i>	Figure No.
CREATED BY: <i>JLM</i>	1
PROJECT NO.: <i>06-057</i>	
REFERENCE: <i>MNRF</i>	



- Legend:**
- Property Boundary
  - Reforestation Area (12.2ha)
  - Vegetation Communities
  - Current Environmental Zone 1 (Schedule I, TCOP, 2016)
  - Current Environmental Zone 2 (Schedule I, TCOP, 2016)
- Oak Ridges Moraine Rare Plant Species Locations**  
 9 Black Walnut (*Juglans nigra*)
- CUM1-1 Dry-Moist Old Field Meadow Type
  - CUMW1 Mineral Cultural Woodland Ecosite
  - CUP3-1 Red Pine Coniferous Plantation Type
  - CUP3-8 White Spruce-European Larch Coniferous Plantation Type
  - FOD4 Dry-Fresh Deciduous Forest Ecosite
  - FOD5 Dry-Fresh Sugar Maple Deciduous Forest Ecosite
  - FOD5-6 Dry-Fresh Sugar Maple-Basswood Deciduous Forest Type
  - FOD7 Fresh-Moist Lowland Deciduous Forest Ecosite



## ENVIRONMENTAL MANAGEMENT AND REFORESTATION PLAN

Date Issued: October 2019  
 Created By: JLM  
 Project No. 06-057  
 File Name: Figure 2

VanStralen EIS Lot  
 28, Concession 9  
 Town of Caledon

Figure No.  
2



Legend:	
	Property Boundary
	Recommended Environmental Zone 1
	Recommended Environmental Zone 2
	Reforestation Area (12.2ha)

**PROPOSED DEVELOPMENT**

Date Issued: October 2019	VanStralen EIS Lot 28, Concession 9 Town of Caledon	Figure No.
Created By: PHD		3
Project No: 06-057		
File Name: Figure 3		

**Table 1: Ecological Land Classification (ELC)**

Ecological Land Classification <sup>1</sup>				
System	Community Class	Community Series	Ecosite	Description
Terrestrial	Forest	FOD, Deciduous Forest	FOD4, Dry - Fresh Deciduous Forest Ecosite	This Ecosite is one of two FOD4 communities identified on the property, located northeast of the agricultural area (Figure 2). Forest canopy composed of species such as Eastern Hop-hornbeam, American Basswood and Eastern Hemlock. Common associates include American Elm, Trembling Aspen and White Spruce. Shrubs present within this unit include species such as Common Elderberry, Prickly Gooseberry and Black Raspberry. Groundcover was largely composed of Virginia Creeper and Small
Terrestrial	Forest	FOD, Deciduous Forest	FOD4, Dry - Fresh Deciduous Forest Ecosite	This Ecosite is one of two FOD4 communities identified on the property, located southwest of the agricultural area (Figure 2). This remnant forest community largely consists of non-native tree species ( <i>i.e.</i> Manitoba Maple, Norway Maple, and Scots Pine). Ground cover includes a variety of grass species and goldenrods.
Terrestrial	Forest	FOD, Deciduous Forest	FOD5, Dry - Fresh Sugar Maple Deciduous Forest Ecosite	Forest canopy largely composed of Sugar Maple with Eastern Hemlock, Black Cherry and Eastern Hop-hornbeam. White Ash and Alternate-leaf Dogwood are also found within the understory layer. Groundcover is largely composed of Virginia Creeper with Red Baneberry, Wild Grape and Small Enchanter's Nightshade.
Terrestrial	Forest	FOD, Deciduous Forest	FOD5-6, Dry - Fresh Sugar Maple Basswood Deciduous Forest Type	Forest canopy composed of American Basswood and Sugar Maple with the occasional Manitoba Maple and Red Pine. Virginia Creeper and Wild Grape largely dominate the groundcover.
Terrestrial	Forest	FOD, Deciduous Forest	FOD7, Fresh - Moist Lowland Deciduous Forest Ecosite	This lowland forest community is composed primarily of Manitoba Maple. Shrubs are limited throughout the community but include species such as Red Raspberry and Prickly Gooseberry. Groundcover is largely dominated by Herb-robert, Small Enchanter's Nightshade and Climbing Bittersweet.
Terrestrial	Cultural	CUP, Cultural Plantation	CUP3-1, Red Pine Coniferous Plantation	Dense area of red pine trees. No shrub layer. Understorey layer is sparse and is composed of species such as Awnless Brome, Red Raspberry and Brown-seed Dandelion.
Terrestrial	Cultural	CUP, Cultural Plantation	CUP3-8, White Spruce - European Larch Coniferous Plantation Type	This coniferous plantation is relatively young in nature ( <i>i.e.</i> < 10 years). Planted tree species include White Spruce and Colorado Blue Spruce, with the occasional Red Pine and non-native Fir species. Ground cover is sparse with grasses, Wild Carrot, and goldenrods.
Terrestrial	Cultural	CUM, Cultural Meadow	CUM1-1, Dry - Moist Cultural Meadow	Edges of property boundaries, and along fencerows contained old field meadow species. Fencerows contained cultural meadow and occasional mature trees and scattered shrubs.
Terrestrial	Cultural	CUW, Cultural Woodland	CUW1, Mineral Cultural Woodland Ecosite	This Ecosite is one of two CUW1 communities identified on the property, located northeast of the agricultural area (Figure 2). Community composed of a scattering of trees such as American Elm, Red Pine, Eastern Hemlock, Manitoba Maple and Sugar Maple. Staghorn sumac and Red Raspberry and large components to this community. Common early successional field species are
Terrestrial	Cultural	CUW, Cultural Woodland	CUW1, Mineral Cultural Woodland Ecosite	This Ecosite is one of two CUW1 communities identified on the property, located southwest of the agricultural area (Figure 2). This is another very young community ( <i>i.e.</i> < 10 years) dominated with Sugar Maple saplings. Secondary tree species include Trembling Aspen, Red Oak, and Red Pine. Very minimal groundcover diversity; species include Wild Carrot, Grasses, Milkweed, and Mullein.
Terrestrial	n/a	n/a	Highly Disturbed Area	This area is described as highly disturbed, largely due to the presence of heaping mounds of gravel and sand across the land. Predominantly meadow species growing in this area ( <i>i.e.</i> Wild Carrot, Grasses, Mullein, goldenrods, <i>etc.</i> ) with the occasional Red Maple, Manitoba Maple, and Red Pine sapling.

Table 2: Plant Species Observations 2006 - 2019

FAMILY <sup>1</sup>	Scientific Name	Common Name	Vegetation Communities <sup>2</sup>															Conservation Ranking <sup>3</sup>					Regional <sup>4</sup>	
			CUM1-1 (northeast)	CUM1-1 (southwest)	CUW1 (northeast)	CUW1 (southwest)	CUP3-1	CUP3-8	FOD4 (northeast)	FOD4 (southwest)	FOD5	FOD5-6	FOD7	Fencerow	Hedgerow	Planted Hedgerow	Highly Disturbed Area	GRANK	SRANK	COSEWIC	MNR	TRACK	ORM	NVCA
ACERACEAE	<i>Acer negundo</i>	Box Elder			X						X	X	X			X	G5	S5			N			
ACERACEAE	<i>Acer platanoides</i>	Norway Maple											X				GNR	SNA			N			
ACERACEAE	<i>Acer rubrum</i>	Red Maple														X	G5	S5			Y			
ACERACEAE	<i>Acer saccharum</i>	Sugar Maple		X		X					X			X			G5	S5			N			
ANACARDIACEAE	<i>Rhus typhina</i>	Staghorn Sumac			X												G5	S5			N			
APIACEAE	<i>Daucus carota</i>	Wild Carrot	X	X		X	X	X								X	GNR	SNA			N			
ARACEAE	<i>Arisaema triphyllum</i>	Jack-in-the-pulpit									X			X			G5	S5			N			
ARISTOLOCHIACEAE	<i>Asarum canadense</i>	Canada Wild-ginger									X						G5	S5			N			
ASCLEPIADACEAE	<i>Asclepias syriaca</i>	Kansas Milkweed	X	X		X											G5	S5			N			
ASTERACEAE	<i>Achillea millefolium</i>	Yarrow	X														G5	S5			N			
ASTERACEAE	<i>Arctium minus</i>	Lesser Burdock	X										X				GNR	SNA			N			
ASTERACEAE	<i>Chrysanthemum leucanthemum</i>	Oxeye Daisy	X														GNR	SNA			N			
ASTERACEAE	<i>Cichorium intybus</i>	Chicory	X														GNR	SNA			N			
ASTERACEAE	<i>Cirsium vulgare</i>	Bull Thistle	X														GNR	SNA			N			
ASTERACEAE	<i>Erigeron annuus</i>	White-top Fleabane	X								X						G5	S5			N			
ASTERACEAE	<i>Erigeron hyssopifolius</i>	Daisy Fleabane	X									X					G5	S5			N			
ASTERACEAE	<i>Hieracium aurantiacum</i>	Orange Hawkweed	X														GNR	SNA			N			
ASTERACEAE	<i>Hieracium caespitosum</i>							X									GNR	SNA			N			
ASTERACEAE	<i>Packera paupercula</i>	Balsam Ragweed						X									G5	S5			N			
ASTERACEAE	<i>Solidago sp.</i>	Goldenrod sp.	X	X	X				X			X				X								
ASTERACEAE	<i>Taraxacum officinale</i>	Brown-seed Dandelion	X					X			X						GNR	SNA			N			
ASTERACEAE	<i>Tragopogon porrifolius</i>	Purple Goat's-beard	X														GNR	SNA			N			
BERBERIDACEAE	<i>Caulophyllum thalictroides</i>	Blue Cohosh									X						G4G5	S5			N			
BERBERIDACEAE	<i>Podophyllum peltatum</i>	May Apple									X						G5	S5			N			
BETULACEAE	<i>Ostrya virginiana</i>	Eastern Hop-hornbeam			X						X						G5	S5			N			
BORAGINACEAE	<i>Myosotis scorpioides</i>	True Forget-me-not									X						GNR	SNA			N			
BRASSICACEAE	<i>Alliaria petiolata</i>	Garlic Mustard	X														GNR	SNA			Y			
BRASSICACEAE	<i>Hesperis matronalis</i>	Dame's Rocket	X									X					GNR	SNA			N			
CAPRIFOLIACEAE	<i>Lonicera tatarica</i>	Tartarian Honeysuckle			X		X										GNR	SNA			N			
CAPRIFOLIACEAE	<i>Sambucus canadensis</i>	Common Elderberry	X								X						G5	S5			N			
CAPRIFOLIACEAE	<i>Viburnum trilobum</i>	Highbush Cranberry											X				G5T5	S5			N			
CARYOPHYLLACEAE	<i>Cerastium arvense</i>	Field Mouse-ear Chickweed			X												G5	S5			N			
CARYOPHYLLACEAE	<i>Silene vulgaris</i>	Maiden's Tears	X				X										GNR	SNA			N			
CELASTRACEAE	<i>Celastrus scandens</i>	Climbing Bittersweet											X				G5	S5			N			
CLUSIACEAE	<i>Hypericum punctatum</i>	Common St. John's-wort	X														G5	S5			Y			
CONVOLVULACEAE	<i>Convolvulus arvensis</i>	Field Bindweed	X														GNR	SNA			N			
CORNACEAE	<i>Cornus alternifolia</i>	Alternate-leaf Dogwood									X		X				G5	S5			N			
CORNACEAE	<i>Cornus stolonifera</i>	Red-osier Dogwood			X												G5	S5			N			
CUPRESSACEAE	<i>Thuja occidentalis</i>	Eastern White Cedar					X										G5	S5			N			
CYPERACEAE	<i>Carex rosea</i>	Rosy Sedge															G5	S5			N			
DRYOPTERIDACEAE	<i>Dryopteris carthusiana</i>	Spinulose Shield Fern											X				G5	S5			N			
DRYOPTERIDACEAE	<i>Matteuccia struthiopteris</i>	Ostrich Fern											X				G5	S5			N			
ELAEAGNACEAE	<i>Elaeagnus angustifolia</i>	Russian Olive												X			GNR	SNA			N			
EUPHORBIACEAE	<i>Euphorbia cyparissias</i>	Cypress Spurge					X										G5	SE5			N			
FABACEAE	<i>Coronilla varia</i>	Common Crown-vetch					X										GNR	SNA			N			
FABACEAE	<i>Medicago sativa</i>	Alfalfa					X										GNR	SNA			N			
FABACEAE	<i>Trifolium pratense</i>	Red Clover	X														GNR	SNA			Y			
FABACEAE	<i>Vicia americana</i>	American Purple Vetch	X														G5	S5			N			
FAGACEAE	<i>Quercus rubra</i>	Northern Red Oak				X								X			G5	S5			N			
GERANIACEAE	<i>Geranium robertianum</i>	Herb-robert			X						X	X					GNR	SNA			N			
GROSSULARIACEAE	<i>Ribes americanum</i>	Wild Black Currant									X						G5	S5			N			
GROSSULARIACEAE	<i>Ribes cynosbati</i>	Prickly Gooseberry			X							X	X				G5	S5			Y			
GROSSULARIACEAE	<i>Ribes sp.</i>	Currant					X														N			
GROSSULARIACEAE	<i>Ribes triste</i>	Swamp Red Currant											X				G5	S5			N			
HYDROPHYLLACEAE	<i>Hydrophyllum virginianum</i>	John's Cabbage								X		X					G5	S5			N			
JUGLANDACEAE	<i>Juglans nigra</i>	Black Walnut			X												G5	S4			Y	X		

Table 2: Plant Species Observations 2006 - 2019

FAMILY <sup>1</sup>	Scientific Name	Common Name	Vegetation Communities <sup>2</sup>															Conservation Ranking <sup>3</sup>					Regional <sup>4</sup>	
			CUM1-1 (northeast)	CUM1-1 (southwest)	CUW1 (northeast)	CUW1 (southwest)	CUP3-1	CUP3-8	FOD4 (northeast)	FOD4 (southwest)	FOD5	FOD5-6	FOD7	Fencerow	Hedgerow	Planted Hedgerow	Highly Disturbed Area	GRANK	SRANK	COSEWIC	MNR	TRACK	ORM	NVCA
LAMIACEAE	<i>Glechoma hederacea</i>	Ground Ivy			X												GNR	SNA			N			
LAMIACEAE	<i>Leonurus cardiaca</i>	Common Mother-wort						X					X	X	X		GNR	SNA			N			
LAMIACEAE	<i>Nepeta cataria</i>	Catnip	X														GNR	SNA			N			
LAMIACEAE	<i>Origanum vulgare</i>	Wild Marjoram								X							GNR	SNA			N			
LAMIACEAE	<i>Prunella vulgaris</i>	Self-heal	X														G5	S5			N			
LILIACEAE	<i>Maianthemum canadense</i>	Wild-lily-of-the-valley								X							G5	S5			N			
LILIACEAE	<i>Maianthemum racemosum</i>																G5	S5						
LILIACEAE	<i>Trillium erectum</i>	Red Trillium								X							G5	S5			N			
OLEACEAE	<i>Fraxinus americana</i>	White Ash								X		X					G5	S5			N			
OLEACEAE	<i>Fraxinus pennsylvanica</i>	Green Ash						X									G5	S5			N			
ONAGRACEAE	<i>Circaea alpina</i>	Small Enchanter's Nightsshade	X							X		X	X	X			G5	S5			N			
ONAGRACEAE	<i>Epilobium ciliatum</i>	Hairy Willow-herb												X			G5	S5			N			
PAPAVERACEAE	<i>Sanguinaria canadensis</i>	Bloodroot								X							G5	S5			N			
PINACEAE	<i>Abies sp.</i>	Fir sp.									X						G5	S5			N			
PINACEAE	<i>Picea glauca</i>	White Spruce						X	X					X		X	G5	S5			N			
PINACEAE	<i>Picea pungens</i>	Blue Spruce						X							X		G5	SE1			N			
PINACEAE	<i>Pinus resinosa</i>	Red Pine		X	X		X	X				X			X	X	G5	S5			Y			
PINACEAE	<i>Pinus sylvestris</i>	Scotch Pine						X		X							G?	SE5			N			
PINACEAE	<i>Tsuga canadensis</i>	Eastern Hemlock			X					X							G5	S5			N			
POACEAE	<i>Bromus inermis</i>	Awnless Brome	X	X	X		X			X						X	GNR	SNA						
POACEAE	<i>Dactylis glomerata</i>	Orchard Grass	X							X							GNR	SNA			N			
POACEAE	<i>Phleum pratense</i>	Meadow Timothy	X														GNR	SNA			Y			
POACEAE	<i>Poa pratensis</i>		X		X		X										G5T5?	S5			N			
POACEAE	<i>Poaceae spp.</i>	Grass spp.		X		X		X		X						X								
POLYGONACEAE	<i>Rumex crispus</i>	Curly Dock	X														GNR	SNA			N			
PTERIDACEAE	<i>Pteridium aquilinum</i>	Bracken Fern	X							X				X			G5	S5			N			
RANUNCULACEAE	<i>Actaea rubra</i>	Red Baneberry									X						G5	S5			N			
RANUNCULACEAE	<i>Ranunculus acris</i>	Tall Butter-cup	X							X							GNR	SNA			N			
ROSACEAE	<i>Geum canadense</i>	White Avens	X														G5	S5			N			
ROSACEAE	<i>Potentilla recta</i>	Sulphur Cinquefoil	X														GNR	SNA			N			
ROSACEAE	<i>Prunus serotina</i>	Wild Black Cherry								X							G5	S5						
ROSACEAE	<i>Prunus virginiana</i>	Choke Cherry						X						X			G5	S5			N			
ROSACEAE	<i>Rubus idaeus</i>	Common Red Raspberry	X		X								X				G5	S5			N			
ROSACEAE	<i>Rubus occidentalis</i>	Black Raspberry			X					X							G5	S5			N			
ROSACEAE	<i>Waldsteinia fragarioides</i>	Barren Strawberry															G5	S5			N			
SALICACEAE	<i>Populus tremuloides</i>	Trembling Aspen	X			X				X				X			G5	S5			N			
SAXIFRAGACEAE	<i>Tiarella cordifolia</i>	Heart-leaved Foam-flower								X							G5	S5			N			
SCROPHULARIACEAE	<i>Verbascum thapsus</i>	Great Mullein	X	X		X										X	GNR	SNA			N			
SOLANACEAE	<i>Solanum ptychanthum</i>	Black Nightshade						X									G5	S5			Y			
TAXACEAE	<i>Taxus canadensis</i>	Canadian Yew								X							G5	S4			N			
TILIACEAE	<i>Tilia americana</i>	American Basswood			X					X		X		X			G5	S5			N			
ULMACEAE	<i>Ulmus americana</i>	American Elm			X		X			X							G5?	S5			N			
URTICACEAE	<i>Urtica dioica</i>	Stinging Nettle											X				G5	S5			N			
VITACEAE	<i>Parthenocissus quinquefolia</i>	Virginia Creeper	X		X		X			X	X						G5	S4?			N			
VITACEAE	<i>Vitis riparia</i>	Riverbank Grape			X						X			X			G5	S5			N			

<sup>1</sup> Nomenclature based on Ontario Ministry of Natural Resources (OMNR), Natural Heritage Information Centre (NHIC) database - <http://nhic.mnr.gov.on.ca/MNR/nhic/species.cfm>

<sup>2</sup> ELC Code - See Table 1 for community description.

<sup>3</sup> Conservation Rankings: From Ontario Ministry of Natural Resources, Natural Heritage Information Centre ([http://nhic.mnr.gov.on.ca/nhic\\_cfm](http://nhic.mnr.gov.on.ca/nhic_cfm))

<sup>4</sup> Regional - **ORM** Oak Ridges Moraine (ORM) - Oak Ridges Moraine Technical Paper: Identification of Significant Portions of Habitat for Endangered, Rare and Threatened Species on the Oak Ridges Moraine (Feb. 2004)

**NVCA** Nottawasag Valley Conservation Authority - J.L. Riley. 1989. Distribution and Status of the Vascular Plants of Central Region, Ontario Ministry of Natural Resources. Parks and Recreational Areas Section.

Table 3: Bird Species Observations

Graham Property EIS: AEC 06-057  
Observers: T.Etwell, L.Moran

FAMILY	Scientific Name	Common Name	Provincial Conservation Ranking <sup>1</sup>					ORM <sup>5</sup>	May, 29, 2006 & June 12, 2007 <sup>2</sup>	
			GRANK	SRANK	COSEWIC	MNR	TRACK		West Property (Agricultural Lands) <sup>3,4</sup>	East Property (Forest and Cultural Communities) <sup>3,4</sup>
CARDINALIDAE	<i>Passerina cyanea</i>	Indigo Bunting	G5	S5B,SZN			N		S	
COLUMBIDAE	<i>Zenaida macroura</i>	Mourning Dove	G5	S5B,SZN			N		S	
EMBERIZIDAE	<i>Ammodramus savannarum</i>	Grasshopper Sparrow	G5	S4B,SZN		SC	Y		S	
EMBERIZIDAE	<i>Melospiza melodia</i>	Song Sparrow	G5	S5B,SZN			N		X	
EMBERIZIDAE	<i>Passerculus sandwichensis</i>	Savannah Sparrow	G5	S5B,SZN			N		S	
EMBERIZIDAE	<i>Spizella passerina</i>	Chipping Sparrow	G5	S5B,SZN			N		S	
EMBERIZIDAE	<i>Spizella pusilla</i>	Field Sparrow	G5	S5B,SZN			N		S	
FRINGILLIDAE	<i>Carduelis tristis</i>	American Goldfinch	G5	S5B,SZN			N		S	
ICTERIDAE	<i>Molothrus ater</i>	Brown-headed Cowbird	G5	S5B,SZN			N		S	
PARIDAE	<i>Poecile atricapillus</i>	Black-capped Chickadee	G5	S5			N		S	
STURNIDAE	<i>Sturnus vulgaris</i>	European Starling	G5	SE			N		S	
TURDIDAE	<i>Turdus migratorius</i>	American Robin	G5	S5B,SZN			N		S	
TYRANNIDAE	<i>Tyrannus tyrannus</i>	Eastern Kingbird	G5	S5B,SZN			N		X	
VIREONIDAE	<i>Vireo olivaceus</i>	Red-eyed Vireo	G5	S5B,SZN			N		S	

1 Conservation Rankings: From Ontario Ministry of Natural Resources, Natural Heritage Information Centre ([http://nhic.mnr.gov.on.ca/nhic\\_.cfm](http://nhic.mnr.gov.on.ca/nhic_.cfm))

2 Weather: Temperature +15 C, Wind: Nil, Cloud Cover 0%, Precipitation NIL, Search Time 06:00hr to 07:15hr

3 Refers to general area of observation on the property. See Figure 2.

4 Breeding Bird Evidence Codes: X - Species observed; S - Singing male (Possible Breeding)

5 Regional - Oak Ridges Moraine (ORM) - Oak Ridges Moraine Technical Paper: Identification of Significant Portions of Habitat for Endangered, Rare and Threatened Species on the Oak Ridges Moraine (Feb. 2004)

Bird observations outside of the breeding season (August 2006)

CORVIDAE	<i>Corvus brachyrhynchos</i>	American Crow	G5	S5B,SZN			N	
CORVIDAE	<i>Cyanocitta cristata</i>	Blue Jay	G5	S5			N	
HIRUNDINIDAE	<i>Tachycineta bicolor</i>	Tree Swallow	G5	S5B,SZN			N	
ICTERIDAE	<i>Icterus galbula</i>	Baltimore Oriole	G5	S5B,SZN			N	
PHASIANIDAE	<i>Meleagris gallopavo</i>	Wild Turkey	G5	S4			N	
PICIDAE	<i>Picoides villosus</i>	Hairy Woodpecker	G5	S5			N	

Table 4: Species at Risk Habitat Summary and Assessment

Common Name	Species Name	MNR	SARA	Key Habitats Used By Species <sup>1</sup>	Initial Assessment
American Badger (Southwestern Ontario population)	<i>Taxidea taxus jacksoni</i>	END	END	Non-forested grassland and shrubland biomes. Agricultural areas support badgers provided there is sufficient hedgerows, fencerows and field edges. Also know from alpine areas and wetlands. Soil and prey availability are key defining habitat features (COSEWIC, 2012d).  ESA Protection: Species and regulated habitat protection	Habitat on the property is not representative of key habitat.
American Ginseng	<i>Panax quinquefolia</i>	END	END	Requires rich, moist, undisturbed and relatively mature Sugar Maple-dominated deciduous woods in areas of circumneutral soil such as over limestone or marble bedrock.  ESA Protection: Species and regulated habitat protection	Habitat on the property is not representative of key habitat. While upland deciduous communities provide key habitat for this species, the small community size and high likelihood of disturbance are generally unsuitable. Further, vascular plant surveys on the property did not document this species. No further evaluation undertaken.
Bank Swallow	<i>Riparia riparia</i>	THR	No status	Nests in burrows excavated in natural and human-made settings with vertical sand and silt faces. Commonly found in sand or gravel pits, road cuts, lakeshore bluffs, and along riverbanks (COSEWIC, 2013d).  ESA Protection: Species and general habitat protection	Habitat on the property is not representative of key habitat.
Barn Swallow	<i>Hirundo rustica</i>	THR	No status	Ledges and walls of man-made structures such as buildings, barns, boathouses, garages, culverts and bridges. Also nest in caves, holes, crevices and cliff ledges (COSEWIC, 2011d).  ESA Protection: Species and general habitat protection	The property provides some potential habitat function for this species. Potentially suitable nesting habitat (existing dwelling) is present adjacent to open agricultural fields, and cultural meadows/agricultural lands provide potential foraging opportunities. The proposed development and re-forestation plan would result in the removal of the majority of the potential foraging habitat. However, such potential habitat is abundant on the immediately surrounding landscape. Further, the existing building will remain in place post-construction.
Blanding's Turtle	<i>Emydoidea blandingii</i>	THR	THR	Blanding's Turtles are a primarily aquatic species that prefer wetland habitats, lakes, ponds, slow-moving streams, etc., however they may utilize upland areas to search for suitable basking and nesting sites. In general, preferred wetland sites are eutrophic and characterized by clear, shallow water, with organic substrates and high density of aquatic vegetation (COSEWIC, 2005a).  ESA Protection: Species and general habitat protection	Habitat on the property is not representative of key habitat. Although Blanding's Turtle are known to make long seasonal migrations, there are no major wetland features within or adjacent to the property that would suggest this species would utilize the property for movement or any other life processes. No further evaluation undertaken.
Bobolink	<i>Dolichonyx oryzivorus</i>	THR	No Status	Nests primarily in forage crops (e.g. hayfields and pastures) dominated by a variety of species such as clover, Timothy, Kentucky Bluegrass, tall grass, and broadleaved plants. Also occurs in wet prairie, graminoid peatlands, and abandoned fields dominated by tall grasses. Does not generally occupy fields of row crops (e.g. corn, soybeans, wheat) or short-grass prairie. Sensitive to habitat size and has lower reproductive success in small habitat fragments (COSEWIC, 2010h).  ESA Protection: Species and general habitat protection	Habitat on the property is not representative of key habitat. The majority of open habitat on the property is maintained as active row crop agriculture. While Bobolink may utilize cultural meadows and hayfields in the vicinity of the property, the property itself offers no such suitable features. No further evaluation undertaken.
Butler's Gartersnake	<i>Thamnophis butleri</i>	END	THR	Old fields, disturbed sites, urban and industrial sites and Tallgrass Prairie. Essential habitat components includes a dense cover of grasses or herbs with a heavy thatch layer and an abundance of earthworms as prey (COSEWIC, 2010c).	Habitat on the property is not representative of key habitat. No further evaluation undertaken.
Butternut	<i>Juglans cinerea</i>	END	END	Commonly found in riparian habitats, but is also found in rich, moist, well-drained loams, and well-drained gravels. Butternut is intolerant of shade (COSEWIC, 2003b).  ESA Protection: Species and general habitat protection	No Butternut identified on the Property.
Cerulean Warbler	<i>Dendroica cerulea</i>	THR	SC	Associated with large tracts of mature deciduous forest with tall trees and an open understorey. Found in both wet bottomland forests and upland areas (COSEWIC, 2010g).  ESA Protection: Species and general habitat protection	NHIC data contains documented occurrences of Cerulean Warbler in close proximity to the property. However, this species is typically associated with large (>10ha) mature deciduous forests (COSEWIC, 2010). Cerulean Warbler is not expected to be present in the small deciduous wooded areas on the property. No further evaluation undertaken.
Chimney Swift	<i>Chaetura pelagica</i>	THR	THR	Nests primarily in chimneys though some populations (i.e. in rural northern areas) may nest in cavity trees (COSEWIC, 2007h). Recent changes in chimney design may be a significant factor in recent declines in numbers (Cadman et al., 2007).  ESA Protection: Species and general habitat protection	There is potential for Chimney Swift to be utilizing buildings in the vicinity; however, the buildings on the property are of relatively modern design and likely do no support adequate chimney design. Regardless, the existing building will remain in place post-construction.
Common Nighthawk	<i>Chordeiles minor</i>	SC	THR	Open habitats including sand dunes, beaches recently logged/burned over areas, forest clearings, short grass prairies, pastures, open forests, bogs, marshes, lakeshores, gravel roads, mine tailings, quarries, and other open relatively clear areas (COSEWIC, 2007i).  ESA Protection: N/A	Habitat is not representative of key habitat. No further evaluation undertaken.
Eastern Hog-nosed Snake	<i>Heterodon platirhinos</i>	THR	THR	Habitat features include: well-drained soil; loose or sandy soil; open vegetative cover; brushland or forest edge; proximity to water; and climatic conditions typical of the eastern deciduous forest biome. In the Georgian Bay region, open grass, sand, human-impacted and forest habitats over rock, wetland, and aquatic habitats are preferable (COSEWIC, 2007g).  ESA Protection: Species and general habitat protection	Habitat is not representative of key habitat. Populations of this species are not known to occur in the vicinity of the property. No further evaluation undertaken.
Eastern Meadowlark	<i>Sturnella magna</i>	THR	No status	Most common in grassland, pastures, savannahs, as well as anthropogenic grassland habitats, including hayfields, weedy meadows, young orchards, golf courses, restored surface mines, etc. Occasionally nest in row crop fields such as corn and soybean, but there are considered low-quality habitat. Large tracts of grassland are preferred over smaller fragments and the minimum area required is estimated at 5 ha (COSEWIC, 2011e).  ESA Protection: Species and general habitat protection	Habitat on the property is not representative of key habitat. The majority of open habitat on the property is maintained as active row crop agriculture. While Eastern Meadowlark may utilize cultural meadows and hayfields in the vicinity of the property, the property itself offers no such suitable features. No further evaluation undertaken.
Eastern Small-footed Myotis	<i>Myotis leibii</i>	END	No status	In the spring and summer, eastern small-footed bats will roost in a variety of habitats, including in or under rocks, in rock outcrops, in buildings, under bridges, or in caves, mines, or hollow trees. In the winter, these bats hibernate, most often in caves and abandoned mines. They seem to choose colder and drier sites than similar bats and will return to the same spot each year (MNR, 2016).  ESA Protection: Species and general habitat protection.	There is potential for this species to be utilizing both the buildings and adjacent small area of upland forest on the property. There is potential for this species to be utilizing both the buildings and adjacent small area of upland forest on the property. These potential habitat features will be maintained post-development.
Eastern Whip-poor-will	<i>Antrostomus vociferus</i>	THR	THR	Semi-open forests or patchy forests with clearings, such as barrens or forests that are regenerating following major disturbances, are preferred nesting habitats (COSEWIC, 2009a).  ESA Protection: Species and general habitat protection	Habitat is not representative of key habitat. No further evaluation undertaken.
Eastern Wood-pewee	<i>Contopus virens</i>	SC	No status	Mostly in mature and intermediate-age deciduous and mixed forests having an open understorey. It is often associated with forests dominated by Sugar Maple and oak. Usually associated with forest clearings and edges within the vicinity of its nest (COSEWIC, 2012h).  ESA Protection: N/A	The property provides potentially habitat for this species. Small sections of upland hardwood forest may provide suitable nesting and foraging opportunities, although these communities may be too small to be of any value. Regardless, these sections of forest and any associated habitat function would remain post-construction.
Grasshopper Sparrow <i>pratensis</i> subspecies	<i>Ammodramus savannarum pratensis</i>	SC	No status	Typically breeds in large human-created grasslands (≥ 5 ha), such as pastures and hayfields, and natural prairies, such as alvars, characterized by well-drained, often poor soil dominated by low, sparse perennial herbaceous vegetation (COSEWIC, 2013e).  ESA Protection: N/A	Habitat is not representative of key habitat. Any cultural meadow-type communities on the property are too small to provide value for this species.
Hart's-tongue Fern	<i>Asplenium scolopendrium</i> var. <i>americanum</i>	SC	SC	Grows on calcareous rocks in deep shade on slopes in deciduous forest. Most occurrences are in maple-beech forest (MNR, 2016).  ESA Protection: N/A	Habitat is not representative of key habitat. No further evaluation undertaken.

Table 4: Species at Risk Habitat Summary and Assessment

Graham Property EIS: AEC06-067

Common Name	Species Name	MNR	SARA	Key Habitats Used By Species <sup>1</sup>	Initial Assessment
Henslow's Sparrow	<i>Ammodramus henslowii</i>	END	END	Requires grassland habitat and occurs more frequently and at higher densities in large patches of suitable habitat. Nests in tallgrass prairie, wet meadow, and marsh habitats as well as agricultural grasslands, lightly grazed pasture and grasslands on reclaimed surface mines (COSEWIC, 2011a).  ESA Protection: Species and general habitat protection	Habitat is not representative of key habitat. Any cultural meadow-type communities on the property are too small to provide value for this species.
Jefferson Salamander	<i>Ambystoma jeffersonianum</i>	END	THR	Deciduous or mixed upland forests containing, or adjacent to, suitable breeding ponds. Breeding ponds are normally ephemeral, or vernal, woodland pools that dry in late summer. Terrestrial habitat is in mature woodlands that have small mammal burrows or rock fissures that enable adults to over-winter underground below the frost line (COSEWIC, 2010b).  ESA Protection: Species and general habitat protection	Habitat is not representative of key habitat. No further evaluation undertaken.
Little Brown Myotis	<i>Myotis lucifugus</i>	END	END	Forests and regularly aging human structures as maternity roost sites. Regularly associated with attics of older buildings and barns for summer maternity roost colonies. Overwintering sites are characteristically mines or caves, but can often include buildings (MNR 2014, COSEWIC, 2013c).  ESA Protection: Species and general habitat protection	There is potential for this species to be utilizing both the buildings and adjacent small area of upland forest on the property. These potential habitat features will be maintained post-development.
Monarch	<i>Danaus plexippus</i>	SC	SC	Breeding habitat is confined to sites where milkweeds, the sole food of caterpillars, grow. Milkweeds grow in a variety of environments, including meadows in farmlands, along roadsides and in ditches, open wetlands, dry sandy areas, short and tall grass prairie, river banks, irrigation ditches, arid valleys, and south-facing hills (COSEWIC, 2010k).  ESA Protection: N/A	There is potential habitat for this species on the property. Any areas of cultural meadow provide potential foraging opportunities. Considering that the property is primarily under cover of row crops, the proposed development would not significantly reduce opportunities for this species.
Northern Bobwhite	<i>Colinus virginianus</i>	END	END	Early successional habitat interspersed with grassland, cropland, and brushy cover. Population is predominantly at Walpole Island, Ontario (COSEWIC, 2013a).  ESA Protection: Species and general habitat protection	While potential habitat opportunities exist on and adjacent to the property, this species is not known to occur in the general area.
Northern Myotis	<i>Myotis septentrionalis</i>	END	END	Maternity roost sites are generally located within deciduous and mixed forests and focused in snags including loose bark and cavities of trees. Overwintering sites are characteristically mines or caves (COSEWIC, 2013c).  ESA Protection: Species and general habitat protection	There is potential for this species to be utilizing both the buildings and adjacent small area of upland forest on the property. As the general area is lacking in over-watering foraging sites, it may be considered less suitable. Regardless, these potential habitat features will be maintained post-development.
Olive-sided Flycatcher	<i>Contopus cooperi</i>	SC	THR	Natural forest openings, forest edges near natural openings (such as wetlands) or open to semi-open forest stands. Occasionally human made openings (such as clear cuts). Presence of tall snags and residual live trees is essential. (COSEWIC, 2007j)  ESA Protection: N/A	Habitat on the property is not representative of key habitat. No further evaluation undertaken.
Red-headed Woodpecker	<i>Melanerpes erythrocephalus</i>	SC	THR	Occurs in open deciduous forests, particularly those dominated by oak and beech, grasslands, forest edges, orchards, pastures along rivers and roads, urban parks, golf courses, cemeteries, beaver ponds and timber stands that have been treated with herbicides (COSEWIC, 2007i).  ESA Protection: N/A	Species not expected to be present on or adjacent to the Property. Habitat is not representative of key habitat.
Rusty-patched Bumble Bee	<i>Bombus affinis</i>	END	END	Found in a wide variety of habitats including mixed farmland, sand dunes, marshes, urban and wooded areas.(COSEWIC, 2010m).  ESA Protection: Species and general habitat protection	There is potential habitat for this species on the property. Any areas of cultural meadow provide potential foraging opportunities. Considering that the property is primarily under cover of row crops, the proposed development would not significantly reduce opportunities for this species.
Short-eared Owl	<i>Asio flammeus</i>	SC	SC	A wide variety of unforested habitats are used, including grasslands, fallow pastures, and occasionally fields planted with row-crops (COSEWIC, 2008e).  ESA Protection: N/A	Species not expected to be present on or adjacent to the Property. Habitat is not representative of key habitat.
Tri-colored Bat	<i>Perimyotis subflavus</i>	END	END	Maternity roost sites include forests and modified landscapes (barns or human-made structures). Overwintering sites include mines and caves (COSEWIC, 2013c).  ESA Protection: Species and general habitat protection	There is potential for this species to be utilizing both the buildings and adjacent small area of upland forest on the property. There is potential for this species to be utilizing both the buildings and adjacent small area of upland forest on the property. These potential habitat features will be maintained post-development.
Wood Thrush	<i>Hylocichla mustelina</i>	SC	No status	Found in moist, deciduous hardwood or mixed stands, often previously disturbed, with a dense deciduous undergrowth and with tall trees for singing perches (COSEWIC, 2012i).  ESA Protection: N/A	Although a small area of upland hardwood forest is present on the property, there is no area of suitable core forest to support this species. No further evaluation undertaken.

1. Habitat as outlined within the Species at Risk in MNR's Parry Sound District Excel file version 3, updated as of May 10, 2012, MNR's Species at Risk in Ontario website files (<https://www.ontario.ca/environment-and-energy/species-risk-ontario-list>), or Species Specific COSEWIC Reports referenced in this document.

Significant Wildlife Habitat Criteria Schedule for Ecoregion 6E

Table 5.1: Seasonal Concentrations of Areas of Animals

Wildlife Habitat	Wildlife Species	Candidate SHW		Confirmed SWH	Assessment
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	
<p><b>Waterfowl Stopover and Staging Areas (Terrestrial)</b></p> <p><b>Rationale:</b> Habitat important to migrating waterfowl.</p>	American Black Duck Wood Duck Green-winged Teal Blue-winged Teal Mallard Northern Pintail Northern Shoveler American Wigeon Gadwall	CUM1 CUT1 Plus evidence of annual spring flooding from melt water or run-off within these Ecosites.	Fields with sheet water during Spring (mid-March to May). <ul style="list-style-type: none"> <li>Fields flooding during spring melt and run-off provide important invertebrate foraging habitat for migrating waterfowl.</li> <li>Agricultural fields with waste grains are commonly used by waterfowl; these are not considered SWH unless they have spring sheet water available.</li> </ul> <p><u>Information Sources</u></p> <ul style="list-style-type: none"> <li>Anecdotal information from the landowner, adjacent landowners or local naturalist clubs may be good information in determining occurrence.</li> <li>Reports and other information available from Conservation Authorities</li> <li>Sites documented through waterfowl planning processes (e.g. EHJV implementation plan)</li> <li>Field Naturalist Clubs</li> <li>Ducks Unlimited Canada</li> <li>Natural Heritage Information Centre (NHIC) Waterfowl Concentration Area</li> </ul>	Studies carried out and verified presence of an annual concentration of any listed species, evaluation methods to follow “Bird and Bird Habitats: Guidelines for Wind Power Projects” <ul style="list-style-type: none"> <li>Any mixed species aggregations of 100 or more individuals required.</li> <li>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.</li> <li>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).</li> <li>SWHMiST Index #7 provides development effects and mitigation measures.</li> </ul>	The study area does not meet criteria due to a lack of available spring sheet water. No further evaluation undertaken.
<p><b>Waterfowl Stopover and Staging Areas (Aquatic)</b></p> <p><b>Rationale:</b> Important for local and migrant waterfowl populations during the spring or fall migration or both periods combined. Sites identified are usually only one of a few in the eco-district.</p>	Canada Goose Cackling Goose Snow Goose American Black Duck Northern Pintail Northern Shoveler American Wigeon Gadwall Green-winged Teal Blue-winged Teal Hooded Merganser Common Merganser Lesser Scaup Greater Scaup Long-tailed Duck Surf Scoter White-winged Scoter Black Scoter Ring-necked duck Common Goldeneye Bufflehead Redhead Ruddy Duck Red-breasted Merganser Brant Canvasback	MAS1 MAS2 MAS3 SAS1 SAM1 SAF1 SWD1 SWD2 SWD3 SWD4 SWD5 SWD6 SWD7	<ul style="list-style-type: none"> <li>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.</li> <li>These habitats have an abundant food supply (mostly aquatic invertebrates and vegetation in shallow water).</li> </ul> <p><u>Information Sources</u></p> <ul style="list-style-type: none"> <li>Environment Canada</li> <li>Naturalist clubs often are aware of staging/stopover areas</li> <li>OMNRF Wetland Evaluations indicate presence of locally and regionally significant waterfowl staging.</li> <li>Sites documented through waterfowl planning processes (e.g. EHJV implementation plan)</li> <li>Ducks Unlimited projects</li> <li>Element occurrence specification by Nature Serve: <a href="http://www.natureserve.org">http://www.natureserve.org</a></li> <li>Natural Heritage Information Centre (NHIC) Waterfowl Concentration Areas</li> </ul>	Studies carried out and verified presence of: <ul style="list-style-type: none"> <li>Aggregations of 100 or more of listed species for 7 days, results in &gt; 700 waterfowl use days.</li> <li>Areas with annual staging of ruddy ducks, canvasbacks, and redheads are SWH.</li> <li>The combined area of the ELC ecosites and a 100m radius area is the SWH.</li> <li>Wetland area and shorelines associated with sites identified within the SWHTG Appendix K are significant wildlife habitat.</li> <li>Evaluation methods to follow “Bird and Bird Habitats: Guidelines for Wind Power Projects”.</li> <li>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).</li> <li>SWHMiST Index #7 provides development effects and mitigation measures.</li> </ul>	The study area does not meet ELC criteria. No further evaluation undertaken.

Table 5.1-5.6 (AEC 06-057)

Wildlife Habitat	Wildlife Species	Candidate SHW		Confirmed SWH	Assessment
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	
	Ruddy Duck				
<b>Shorebird Migratory Stopover Area</b>  <b>Rationale:</b> 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	<ul style="list-style-type: none"> <li>Shorelines of lakes, rivers and wetlands, including beach areas, bars and seasonally flooded, muddy and un-vegetated shoreline habitats.</li> <li>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.</li> <li>Sewage treatment ponds and storm water ponds do not qualify as a SWH.</li> </ul> <p><u>Information Sources</u></p> <ul style="list-style-type: none"> <li>Western hemisphere shorebird reserve network</li> <li>Canadian Wildlife Service (CWS) Ontario Shorebird Survey</li> <li>Bird Studies Canada</li> <li>Ontario Nature</li> <li>Local birders and naturalist clubs</li> <li>Natural Heritage Information Center (NHIC) Shorebird Migratory Concentration Area</li> </ul>	Studies confirming: <ul style="list-style-type: none"> <li>Presence of 3 or more of listed species and &gt; 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)</li> <li>Whimbrel stop briefly (&lt;24hrs) during spring migration, any site with &gt;100 Whimbrel used for 3 years or more is significant.</li> <li>The area of significant shorebird habitat includes the mapped ELC shoreline ecosites plus a 100m radius area.</li> <li>Evaluation methods to follow "Bird and Bird Habitats: Guidelines for Wind Power Projects".</li> <li>SWHMiST Index #8 provides development effects and mitigation measures.</li> </ul>	The study area does not meet ELC criteria. No further evaluation undertaken.
<b>Raptor Wintering Area</b>  <b>Rationale:</b> Sites used by multiple species of individuals and used annually are most significant	Rough-legged Hawk Red-tailed Hawk Northern Harrier American Kestrel Snowy Owl  <b>Special Concern:</b> Short-eared Owl Bald Eagle	<p><u>Hawks/Owls:</u>            Combination of ELC Community Series; need to have present one Community Series from each land class;            Forest:            FOD, FOM, FOC.             Upland:            CUM; CUT; CUS; CUW.   <u>Bald Eagle:</u>            Forest community Series:            FOD, FOM, FOC, SWD, SWM or SWC on shoreline areas adjacent to large rivers or adjacent to lakes with open water (hunting area).</p>	<ul style="list-style-type: none"> <li>The habitat provides a combination of fields and woodlands that provide roosting, foraging and resting habitats for wintering raptors.</li> <li>Raptor wintering sites (hawk/owl) need to be &gt; 20 ha with a combination of forest and upland.</li> <li>Least disturbed sites, idle/fallow or lightly grazed field/meadow (&gt;15ha) with adjacent woodlands.</li> <li>Field area of the habitat is to be windswept with limited snow depth or accumulation.</li> <li>Eagle sites have open water, large trees and snags available for roosting.</li> </ul> <p><u>Information Sources:</u></p> <ul style="list-style-type: none"> <li>OMNRF Ecologist or Biologist Field Naturalist Clubs</li> <li>Natural Heritage Information Center (NHIC) Raptor Winter Concentration Area</li> <li>Data from Bird Studies Canada</li> <li>Results of Christmas Bird Counts Reports and other information available from Conservation Authorities.</li> </ul>	Studies confirm the use of these habitats by: <ul style="list-style-type: none"> <li>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.</li> <li>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.</li> <li>The habitat area for an Eagle winter site is the shoreline forest ecosites directly adjacent to the prime hunting area.</li> <li>Evaluation methods to follow "Bird and Bird Habitats: Guidelines for Wind Power Projects".</li> <li>SWHMiST Index #10 and #11 provides development effects and mitigation measures.</li> </ul>	The study area does not meet criteria for minimum area of key ELC communities. No further evaluation undertaken.

Table 5.1-5.6 (AEC 06-057)

Wildlife Habitat	Wildlife Species	Candidate SHW		Confirmed SWH	Assessment
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	
<p><b>Bat Hibernacula</b></p> <p><b>Rationale:</b> Bat hibernacula are rare habitats in all Ontario landscapes.</p>	<p>Big Brown Bat Tri-coloured Bat</p>	<p>Bat Hibernacula may be found in these ecosites: CCR1 CCR2 CCA1 CCA2 (Note: buildings are not considered to be SWH)</p>	<ul style="list-style-type: none"> <li>Hibernacula may be found in caves, mine shafts, underground foundations and Karsts.</li> <li>Active mine sites should not be considered as SWH</li> <li>The locations of bat hibernacula are relatively poorly known.</li> </ul> <p><u>Information Sources</u></p> <ul style="list-style-type: none"> <li>OMNRF for possible locations and contact for local experts</li> <li>Natural Heritage Information Center (NHIC) Bat Hibernaculum Ministry of Northern</li> <li>Development and Mines for location of mine shafts.</li> <li>Clubs that explore caves (e.g. Sierra Club)</li> <li>University Biology Departments with bat experts.</li> </ul>	<ul style="list-style-type: none"> <li>All sites with confirmed hibernating bats are SWH.</li> <li>The habitat area includes a 200m radius around the entrance of the hibernaculum, for most development types and 1000m for wind farms</li> <li>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.</li> <li>SWHMIST Index #1 provides development effects and mitigation measures.</li> </ul>	<p>The study area does not meet ELC criteria. No further evaluation undertaken.</p>
<p><b>Bat Maternity Colonies</b></p> <p><b>Rationale:</b> Known locations of forested bat maternity colonies are extremely rare in all Ontario landscapes.</p>	<p>Big Brown Bat Silver-haired Bat</p>	<p>Maternity colonies considered SWH are found in forested Ecosites.</p> <p>All ELC Ecosites in ELC Community Series: FOD FOM SWD SWM</p>	<ul style="list-style-type: none"> <li>Maternity colonies can be found in tree cavities, vegetation and often in buildings (buildings are not considered to be SWH).</li> <li>Maternity roosts are not found in caves and mines in Ontario.</li> <li>Maternity colonies located in Mature deciduous or mixed forest stands with &gt;10/ha large diameter (&gt;25cm dbh) wildlife trees.</li> <li>Female Bats prefer wildlife tree (snags) in early stages of decay, class 1-3 or class 1 or 2.</li> <li>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.</li> </ul> <p><u>Information Sources</u></p> <ul style="list-style-type: none"> <li>OMNRF for possible locations and contact for local experts</li> <li>University Biology Departments with bat experts.</li> </ul>	<ul style="list-style-type: none"> <li>Maternity Colonies with confirmed use by; <ul style="list-style-type: none"> <li>&gt;10 Big Brown Bats</li> <li>&gt;5 Adult Female Silver-haired Bats</li> </ul> </li> <li>The area of the habitat includes the entire woodland or a forest stand ELC Ecosite or an Ecoelement containing the maternity colonies.</li> <li>Evaluation methods for maternity colonies should be conducted following methods outlined in the “Bats and Bat Habitats: Guidelines for Wind Power Projects”.</li> <li>SWHMIST Index #12 provides development effects and mitigation measures.</li> </ul>	<p>The study area does meet ELC criteria for areas of forest cover. Forest cover is limited and restricted to areas of the property where no development is proposed to occur. No impact to this potential function would be expected.</p>
<p><b>Turtle Wintering Areas</b></p> <p><b>Rationale:</b> Generally sites are the only known sites in the area. Sites with the highest number of individuals are most significant.</p>	<p>Midland Painted Turtle</p> <p><b>Special Concern:</b> Northern Map Turtle Snapping Turtle</p>	<p>Snapping and Midland Painted Turtles; ELC Community Classes; SW, MA, OA and SA, ELC Community Series; FEO and BOO</p> <p>Northern Map Turtle; Open Water areas such as deeper rivers or streams and lakes with current can also be used as over-wintering habitat.</p>	<ul style="list-style-type: none"> <li>For most turtles, wintering areas are in the same general area as their core habitat. Water has to be deep enough not to freeze and have soft mud substrates.</li> <li>Over-wintering sites are permanent water bodies, large wetlands, and bogs or fens with adequate Dissolved Oxygen.</li> <li>Man-made ponds such as sewage lagoons or storm water ponds should not be considered SWH.</li> </ul> <p><u>Information Sources</u></p> <ul style="list-style-type: none"> <li>EIS studies carried out by Conservation Authorities.</li> <li>Local field naturalists and experts, as well as university herpetologists may also know where to find some of these sites.</li> <li>OMNRF Ecologist or Biologist</li> </ul>	<ul style="list-style-type: none"> <li>Presence of 5 over-wintering Midland Painted Turtles is significant.</li> <li>One or more Northern Map Turtle or Snapping Turtle over-wintering within a wetland is significant.</li> <li>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.</li> <li>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)</li> <li>Congregation of turtles is more common where wintering areas are limited and therefore significant</li> </ul>	<p>The study area does not meet ELC criteria. No further evaluation undertaken.</p>

Table 5.1-5.6 (AEC 06-057)

Wildlife Habitat	Wildlife Species	Candidate SHW		Confirmed SWH	Assessment
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	
			<ul style="list-style-type: none"> <li>Field Naturalist clubs</li> <li>Natural Heritage Information Center (NHIC)</li> </ul>	<ul style="list-style-type: none"> <li>SWHMiST Index #28 provides development effects and mitigation measures for turtle wintering habitat.</li> </ul>	
<p><b>Reptile Hibernaculum Rationale;</b> Generally sites are the only known sites in the area. Sites with the highest number of individuals are most significant.</p>	<p><b>Snakes:</b> Eastern Gartersnake Northern Watersnake Northern Red-bellied Snake Northern Brownsnake Smooth Green Snake Northern Ring-necked Snake</p> <p><b>Special Concern:</b> Milksnake Eastern Ribbonsnake</p> <p><b>Lizard:</b> <b>Special Concern</b> (Southern Shield population): Five-lined Skink</p>	<p>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.</p> <p>Observations or congregations of snakes on sunny warm days in the spring or fall is a good indicator.</p> <p>For Five-lined Skink, ELC Community Series of FOD and FOM and Ecosites: FOC1 FOC3</p>	<ul style="list-style-type: none"> <li>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.</li> <li>Areas of broken and fissured rock are particularly valuable since they provide access to subterranean sites below the frost line.</li> <li>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.</li> <li>Five-lined skink prefer mixed forests with rock outcrop openings providing cover rock overlaying granite bedrock with fissures.</li> </ul> <p><b>Information Sources</b></p> <ul style="list-style-type: none"> <li>In spring, local residents or landowners may have observed the emergence of snakes on their property (e.g. old dug wells).</li> <li>Reports and other information available from Conservation Authorities.</li> <li>Field Naturalists clubs</li> <li>University herpetologists</li> <li>Natural Heritage Information Center (NHIC)</li> <li>OMNRF ecologist or biologist may be aware of locations of wintering skinks</li> </ul>	<p>Studies confirming:</p> <ul style="list-style-type: none"> <li>Presence of snake hibernacula used by a minimum of five individuals of a snake sp. or; individuals of two or more snake spp.</li> <li>Congregations of a minimum of five individuals of a snake sp. or; individuals of two or more snake spp. near potential hibernacula (e.g. foundation or rocky slope) on sunny warm days in Spring (Apr/May) and Fall (Sept/Oct)</li> <li><b>Note:</b> If there are Special Concern Species present, then site is SWH</li> <li><b>Note:</b> 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.</li> <li>SWHMiST Index #13 provides development effects and mitigation measures for snake hibernacula.</li> <li>Presence of any active hibernaculum for skink is significant.</li> <li>SWHMiST Index #37 provides development effects and mitigation measures for five-lined skink wintering habitat.</li> </ul>	<p>The study area does not meet key criteria. No further evaluation undertaken.</p>
<p><b>Colonially -Nesting Bird Breeding Habitat (Bank and Cliff)</b></p> <p><b>Rationale:</b> Historical use and number of nests in a colony make this habitat significant. An identified colony can be very important to local populations. All swallow population</p>	<p>Cliff Swallow Northern Rough-winged Swallow (this species is not colonial but can be found in Cliff Swallow colonies)</p>	<p>Eroding banks, sandy hills, borrow pits, steep slopes, and sand piles. Cliff faces, bridge abutments, silos, barns.</p> <p>Habitat found in the following ecosites: CUM1 CUT1 CUS1 BLO1 BLS1 BLT1 CLO1</p>	<ul style="list-style-type: none"> <li>Any site or areas with exposed soil banks, undisturbed or naturally eroding that is not a licensed/permitted aggregate area.</li> <li>Does not include man-made structures (bridges or buildings) or recently (2 years) disturbed soil areas, such as berms, embankments, and soil or aggregate stockpiles.</li> <li>Does not include a licensed/permitted Mineral Aggregate Operation.</li> </ul> <p><b>Information Sources</b></p> <ul style="list-style-type: none"> <li>Reports and other information available from Conservation Authorities.</li> <li>Ontario Breeding Bird Atlas</li> <li>Bird Studies Canada; <i>NatureCounts</i> <a href="http://www.birdscanada.org/birdmon/">http://www.birdscanada.org/birdmon/</a></li> </ul>	<p>Studies confirming:</p> <ul style="list-style-type: none"> <li>Presence of 1 or more nesting sites with 8or more cliff swallow pairs and/or rough-winged swallow pairs during the breeding season.</li> <li>A colony identified as SWH will include a 50m radius habitat area from the peripheral nests.</li> <li>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”.</li> <li>SWHMiST Index #4 provides development effects and mitigation measures.</li> </ul>	<p>The study area does not meet key criteria. No further evaluation undertaken.</p>

Table 5.1-5.6 (AEC 06-057)

Wildlife Habitat	Wildlife Species	Candidate SHW		Confirmed SWH	Assessment
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	
are declining in Ontario.		CLS1 CLT1	<ul style="list-style-type: none"> <li>Field Naturalist Clubs.</li> </ul>		
<b>Colonially -Nesting Bird Breeding Habitat (Tree/Shrubs)</b> <b>Rationale:</b> 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	<ul style="list-style-type: none"> <li>Nests in live or dead standing trees in wetlands, lakes, islands, and peninsulas. Shrubs and occasionally emergent vegetation may also be used.</li> <li>Most nests in trees are 11 to 15 m from ground, near the top of the tree.</li> </ul> <b>Information Sources</b> <ul style="list-style-type: none"> <li>Ontario Breeding Bird Atlas, colonial nest records.</li> <li>Ontario Heronry Inventory 1991 available from Bird Studies Canada or NHIC (OMNRF).</li> <li>Natural Heritage Information Center (NHIC) Mixed Wader Nesting Colony</li> <li>Aerial photographs can help identify large heronries.</li> <li>Reports and other information available from CAs.</li> <li>MNRF District Offices</li> <li>Local naturalist clubs</li> </ul>	Studies confirming: <ul style="list-style-type: none"> <li>Presence of 5 or more active nests of Great Blue Heron or other listed species.</li> <li>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 &lt;15.0ha with a colony is the SWH.</li> <li>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.</li> <li>SWHMiST Index #5 provides development effects and mitigation measures.</li> </ul>	The study area does not meet ELC criteria. No further evaluation undertaken.
<b>Colonially -Nesting Bird Breeding Habitat (Ground)</b> <b>Rationale:</b> 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	<ul style="list-style-type: none"> <li>Nesting colonies of gulls and terns are on islands or peninsulas associated with open water or in marshy areas.</li> <li>Brewers Blackbird colonies are found loosely on the ground in low bushes in close proximity to streams and irrigation ditches within farmlands.</li> </ul> <b>Information Sources</b> <ul style="list-style-type: none"> <li>Ontario Breeding Bird Atlas, rare/colonial species records.</li> <li>Canadian Wildlife Service</li> <li>Reports and other information available from CAs.</li> <li>Natural Heritage Information Center (NHIC) Colonial Waterbird Nesting Area</li> <li>MNRF District Offices</li> <li>Field Naturalist clubs</li> </ul>	Studies confirming: <ul style="list-style-type: none"> <li>Presence of &gt; 25 active nests for Herring Gulls or Ring-billed Gulls, &gt;5 active nests for Common Tern or &gt;2 active nests for Caspian Tern.</li> <li>Presence of 5 or more pairs for Brewer's Blackbird.</li> <li>Any active nesting colony of one or more Little Gull and Great Black-backed Gull is significant.</li> <li>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 &lt;3.0ha with a colony is the SWH.</li> <li>Studies would be done during May/June when actively nesting. Evaluation methods to follow "Bird and Bird Habitats: Guidelines for Wind Power Projects".</li> <li>SWHMiST Index #6 provides development effects and mitigation measures.</li> </ul>	The study area does not meet key criteria. No further evaluation undertaken.

Table 5.1-5.6 (AEC 06-057)

Wildlife Habitat	Wildlife Species	Candidate SHW		Confirmed SWH	Assessment
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	
<p><b>Migratory Butterfly Stopover Areas</b></p> <p><b>Rationale:</b> Butterfly stopover areas are extremely rare habitats and are biologically important for butterfly species that migrate south for the winter.</p>	<p>Painted Lady            Red Admiral</p> <p><u>Special Concern</u>            Monarch</p>	<p>Combination of ELC Community Series; need to have present one Community Series from each land class:</p> <p><u>Field:</u>            CUM            CUT            CUS</p> <p><u>Forest:</u>            FOC            FOD            FOM            CUP</p> <p>Anecdotally, a candidate site for butterfly stopover will have a history of butterflies being observed.</p>	<p>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.</p> <ul style="list-style-type: none"> <li>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.</li> <li>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.</li> <li>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.</li> </ul> <p><u>Information Sources</u></p> <ul style="list-style-type: none"> <li>OMNRF (NHIC)</li> <li>Agriculture Canada in Ottawa may have list of butterfly experts.</li> <li>Field Naturalist Clubs</li> <li>Toronto Entomologists Association</li> <li>Conservation Authorities</li> </ul>	<p>Studies confirm:</p> <ul style="list-style-type: none"> <li>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.</li> <li>Observational studies are to be completed and need to be done frequently during the migration period to estimate MUD.</li> <li>MUD of &gt;5000 or &gt;3000 with the presence of Painted Ladies or Red Admiral's is to be considered significant.</li> <li>SWHMiST Index #16 provides development effects and mitigation measures.</li> </ul>	<p>The study area does not meet key criteria. No further evaluation undertaken.</p>
<p><b>Landbird Migratory Stopover Areas</b></p> <p><b>Rationale:</b> Sites with a high diversity of species as well as high numbers are most significant.</p>	<p>All migratory songbirds. Canadian Wildlife Service Ontario website.</p> <p>All migratory songbirds. Canadian Wildlife Service Ontario website:</p>	<p>All Ecosites associated with these ELC Community Series;</p> <p>FOC            FOM            FOD            SWC            SWM            SWD</p>	<p>Woodlots need to be &gt;10 ha in size and within 5 km of Lake Ontario.</p> <ul style="list-style-type: none"> <li>If multiple woodlands are located along the shoreline those Woodlands &lt;2km from Lake Ontario are more significant.</li> <li>Sites have a variety of habitats; forest, grassland and wetland complexes.</li> <li>The largest sites are more significant.</li> <li>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.</li> </ul> <p><u>Information Sources</u></p> <ul style="list-style-type: none"> <li>Bird Studies Canada</li> <li>Ontario Nature</li> <li>Local birders and naturalist club</li> <li>Ontario Important Bird Areas (IBA) Program</li> </ul>	<p>Studies confirm:</p> <ul style="list-style-type: none"> <li>Use of the habitat by &gt;200 birds/day and with &gt;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.</li> <li>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".</li> <li>SWHMiST Index #9 provides development effects.</li> </ul>	<p>The study area does not meet key criteria. No further evaluation undertaken.</p>

Table 5.1-5.6 (AEC 06-057)

Wildlife Habitat	Wildlife Species	Candidate SHW		Confirmed SWH	Assessment
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	
<p><b>Deer Yarding Areas</b></p> <p><b>Rationale:</b> Winter habitat for deer is considered to be the main limiting factor for northern deer populations. In winter, deer congregate in “yards” to survive severe winter conditions. Deer yards typically have a long history of annual use by deer; yards typically represent 10-15% of an areas summer range.</p>	White-tailed Deer	<p>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.</p> <p>Or these ELC Ecosites;            CUP2            CUP3            FOD3            CUT</p>	<ul style="list-style-type: none"> <li>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.</li> <li>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%.</li> <li>OMNRF determines deer yards following methods outlined in “Selected Wildlife and Habitat Features: Inventory Manual”.</li> <li>Woodlots with high densities of deer due to artificial feeding are not significant.</li> </ul>	<p>No Studies Required:</p> <ul style="list-style-type: none"> <li>Snow depth and temperature are the greatest influence on deer use of winter yards. Snow depths &gt; 40cm for more than 60 days in a typically winter are minimum criteria for a deer yard to be considered as SWH.</li> <li>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).</li> <li>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.</li> <li>If a SWH is determined for Deer Wintering Area or if a proposed development is within Stratum II yarding area then Movement Corridors are to be considered as outlined in Table 1.4.1 of this Schedule.</li> <li>SWHMIST Index #2 provides development effects and mitigation measures.</li> </ul>	The study area does not meet key criteria. No further evaluation undertaken.
<p><b>Deer Winter Congregation Areas</b></p> <p><b>Rationale:</b> 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</p>	White-tailed Deer	<p>All Forested Ecosites with these ELC Community Series;            FOC            FOM            FOD            SWC            SWM            SWD</p> <p>Conifer plantations much smaller than 50 ha may also be used.</p>	<ul style="list-style-type: none"> <li>Woodlots will typically be &gt;100 ha in size. Woodlots &lt;100ha may be considered as significant based on MNRF studies or assessment.</li> <li>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.</li> <li>If deer are constrained by snow depth refer to the Deer Yarding Area habitat within Table 1.1 of this Schedule.</li> <li>Large woodlots &gt; 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.</li> <li>Woodlots with high densities of deer due to artificial</li> </ul>	<p>Studies confirm:</p> <ul style="list-style-type: none"> <li>Deer management is an MNRF responsibility, deer winter congregation areas considered significant will be mapped by MNRF.</li> <li>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.</li> <li>Studies should be completed during winter (Jan/Feb) when &gt;20cm of snow is on the ground using aerial survey techniques, ground or road surveys or a pellet count deer density survey.</li> <li>If a SWH is determined for Deer Wintering Area or if a proposed development is within Stratum II</li> </ul>	The study area does not meet key criteria. No further evaluation undertaken.

Table 5.1-5.6 (AEC 06-057)

Wildlife Habitat	Wildlife Species	Candidate SHW		Confirmed SWH	Assessment
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	
woodlands to reduce or avoid the impacts of winter conditions.			feeding are not significant. <u>Information Sources</u> <ul style="list-style-type: none"> <li>• MNR District Offices</li> <li>• LIO/NRVIS</li> </ul>	yarding area then Movement Corridors are to be considered as outlined in Table 1.4.1 of this Schedule. <ul style="list-style-type: none"> <li>• SWHMiST Index #2 provides development effects and mitigation measures.</li> </ul>	

**Table 5.2: Rare Vegetation Communities**

Rare Vegetation Community	Candidate SWH			Confirmed SWH	Assessment
	ELC Ecosite Code	Habitat Description	Detailed Information and Sources	Defining Criteria	
<p><b>Cliffs and Talus Slopes</b></p> <p><b>Rationale:</b> Cliffs and Talus Slopes are extremely rare habitats in Ontario.</p>	<p>Any ELC Ecosite within Community Series:</p> <p>TAO TAS TAT CLO CLS CLT</p>	<p>A Cliff is vertical to near vertical bedrock &gt;3m in height.</p> <p>A Talus Slope is rock rubble at the base of a cliff made up of coarse rocky debris.</p>	<p>Most cliff and talus slopes occur along the Niagara Escarpment.</p> <p><u>Information Sources</u></p> <ul style="list-style-type: none"> <li>The Niagara Escarpment Commission has detailed information on location of these habitats.</li> <li>OMNRF District</li> <li>Natural Heritage Information Center (NHIC) has location information available on their website</li> <li>Field Naturalist clubs</li> <li>Conservation Authorities</li> </ul>	<ul style="list-style-type: none"> <li>Confirm any ELC Vegetation Type for Cliffs or Talus Slopes</li> <li>SWHMiST Index #21 provides development effects and mitigation measures.</li> </ul>	<p>The study area does not meet ELC criteria. No further evaluation undertaken.</p>
<p><b>Sand Barren</b></p> <p><b>Rationale:</b> Sand barrens are rare in Ontario and support rare species. Most Sand Barrens have been lost due to cottage development and forestry</p>	<p>ELC Ecosites:</p> <p>SBO1 SBS1 SBT1</p> <p>Vegetation cover varies from patchy and barren to continuous meadow (SBO1), thicket-like (SBS1), or more closed and treed (SBT1). Tree cover always ≤ 60%.</p>	<p>Sand Barrens typically are exposed sand, generally sparsely vegetated and caused by lack of moisture, periodic fires and erosion. Usually located within other types of natural habitat such as forest or savannah. Vegetation can vary from patchy and barren to tree covered, but less than 60%.</p>	<p>A sand barren area &gt;0.5ha in size.</p> <p><u>Information Sources</u></p> <ul style="list-style-type: none"> <li>MNRF Districts</li> <li>Natural Heritage Information Center (NHIC) has location information available on their website.</li> <li>Field Naturalist clubs</li> <li>Conservation Authorities</li> </ul>	<ul style="list-style-type: none"> <li>Confirm any ELC Vegetation Type for Sand Barrens</li> <li>Site must not be dominated by exotic or introduced species (&lt;50% vegetative cover are exotic sp.)</li> <li>SWHMiST Index #20 provides development effects and mitigation measures.</li> </ul>	<p>The study area does not meet ELC criteria. No further evaluation undertaken.</p>
<p><b>Alvar</b></p> <p><b>Rationale:</b> Alvars are extremely rare habitats in Ecoregion 6E. Most alvars in Ontario are in Ecoregions 6E and 7E. Alvars in 6E are small and highly localized just north of the Palaeozoic-Precambrian contact.</p>	<p>ALO1 ALS1 ALT1 FOC1 FOC2 CUM2 CUS2 CUT2-1 CUW2</p> <p><b>Five Alvar Species:</b></p> <ol style="list-style-type: none"> <li><i>Carex crawei</i></li> <li><i>Panicum philadelphicum</i></li> <li><i>Eleocharis compressa</i></li> <li><i>Scutellaria parvula</i></li> <li><i>Trichostema brachiatum</i></li> </ol> <p>These indicator species are very specific to Alvars within Ecoregion 6E.</p>	<p>An alvar is typically a level, mostly unfractured calcareous bedrock feature with a mosaic of rock pavements and bedrock overlain by a thin veneer of soil. The hydrology of alvars is complex, with alternating periods of inundation and drought. Vegetation cover varies from sparse lichen-moss associations to grasslands and shrublands and comprising a number of characteristic or indicator plants. Undisturbed alvars can be phyto- and zoogeographically diverse, supporting many uncommon or are relict plant and animal species. Vegetation cover varies from patchy to barren with a less than 60% tree cover.</p>	<p>An Alvar site &gt; 0.5 ha in size.</p> <p><u>Information Sources</u></p> <ul style="list-style-type: none"> <li>Alvars of Ontario (2000), Federation of Ontario Naturalists.</li> <li>Ontario Nature – Conserving Great Lakes Alvars.</li> <li>Natural Heritage Information Center (NHIC) has location information available on their website</li> <li>OMNRF Districts</li> <li>Field Naturalist clubs</li> <li>Conservation Authorities</li> </ul>	<ul style="list-style-type: none"> <li>Field studies that identify four of the five <b>Alvar Indicator Species</b> at a Candidate Alvar site is Significant.</li> <li>Site must not be dominated by exotic or introduced species (&lt;50% vegetative cover are exotic sp.).</li> <li>The alvar must be in excellent condition and fit in with surrounding landscape with few conflicting land uses.</li> <li>SWHMiST Index #17 provides development effects and mitigation measures.</li> </ul>	<p>The study area does not meet ELC criteria. No further evaluation undertaken.</p>

Table 5.1-5.6 (AEC 06-057)

Rare Vegetation Community	Candidate SWH			Confirmed SWH	Assessment
	ELC Ecosite Code	Habitat Description	Detailed Information and Sources	Defining Criteria	
<b>Old Growth Forest</b> <b>Rationale:</b> Due to historic logging practices, extensive old growth forest is rare in the Ecoregion. Interior habitat provided by old growth forests is required by many wildlife species.	Forest Community Series: FOD FOC FOM SWD SWC SWM	Old Growth forests are characterized by heavy mortality or turnover of over-storey trees resulting in a mosaic of gaps that encourage development of a multi-layered canopy and an abundance of snags and downed woody debris.	Woodland areas 30 ha or greater in size or with at least 10 ha interior habitat assuming 100 m buffer at edge of forest. <u>Information Sources</u> <ul style="list-style-type: none"> <li>• OMNRF Forest Resource Inventory mapping</li> <li>• OMNRF Districts.</li> <li>• Field Naturalist clubs</li> <li>• Conservation Authorities</li> <li>• Sustainable Forestry Licence (SFL) companies will possibly know locations through field operations.</li> <li>• Municipal forestry departments</li> </ul>	Field Studies will determine: <ul style="list-style-type: none"> <li>• If dominant trees species are &gt;140 years old, then the area containing these trees is Significant Wildlife Habitat.</li> <li>• The forested area containing the old growth characteristics will have experienced no recognizable forestry activities (cut stumps will not be present).</li> <li>• The area of forest ecosites combined or an eco-element within an ecosite that contains the old growth characteristics is the SWH.</li> <li>• Determine ELC vegetation types for the forest area containing the old growth characteristics.</li> <li>• SWHMiST Index #23 provides development effects and mitigation measures.</li> </ul>	The study area does not meet minimum area criteria. No further evaluation undertaken.
<b>Savannah</b> <b>Rationale:</b> Savannahs are extremely rare habitats in Ontario.	TPS1 TPS2 TPW1 TPW2 CUS2	A Savannah is a tallgrass prairie habitat that has tree cover between 25 – 60%.	No minimum size to site. Site must be restored or a natural site. Remnant sites such as railway right of ways are not considered to be SWH. <u>Information Sources</u> <ul style="list-style-type: none"> <li>• Natural Heritage Information Center (NHIC) has location information available on their website</li> <li>• OMNRF Districts</li> <li>• Field Naturalist clubs</li> <li>• Conservation Authorities</li> </ul>	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. <ul style="list-style-type: none"> <li>• Area of the ELC Ecosite is the SWH.</li> <li>• Site must not be dominated by exotic or introduced species (&lt;50% vegetative cover are exotic sp.).</li> <li>• SWHMiST Index #18 provides development effects and mitigation measures.</li> </ul>	The study area does not meet ELC criteria. No further evaluation undertaken.
<b>Tallgrass Prairie</b> <b>Rationale:</b> Tallgrass Prairies are extremely rare habitats in Ontario.	TPO1 TPO2	A Tallgrass Prairie has ground cover dominated by prairie grasses. An open Tallgrass Prairie habitat has < 25% tree cover.	No minimum size to site. Site must be restored or a natural site. Remnant sites such as railway right of ways are not considered to be SWH. <u>Information Sources</u> <ul style="list-style-type: none"> <li>• Natural Heritage Information Center (NHIC) has location information available on their website</li> <li>• OMNRF Districts</li> <li>• Field Naturalist clubs</li> <li>• Conservation Authorities</li> </ul>	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. <ul style="list-style-type: none"> <li>• Area of the ELC Ecosite is the SWH.</li> <li>• Site must not be dominated by exotic or introduced species (&lt;50% vegetative cover are exotic sp.).</li> <li>• SWHMiST Index #19 provides development effects and mitigation measures.</li> </ul>	The study area does not meet ELC criteria. No further evaluation undertaken.
<b>Other Rare Vegetation Communities</b> <b>Rationale:</b> Plant communities that often contain rare species which depend on the habitat for survival.	Provincially Rare S1, S2 and S3 vegetation communities are listed in Appendix M of the SWHTG. Any ELC Ecosite Code that has a possible ELC Vegetation Type that is Provincially Rare is Candidate SWH.	Rare Vegetation Communities may include beaches, fens, forest, marsh, barrens, dunes and swamps.	ELC Ecosite codes that have the potential to be a rare ELC Vegetation Type as outlined in appendix M  The OMNRF/NHIC will have up to date listing for rare vegetation communities. <u>Information Sources</u> <ul style="list-style-type: none"> <li>• Natural Heritage Information Center (NHIC) has location information available on their website</li> <li>• OMNRF Districts</li> <li>• Field Naturalist clubs</li> <li>• Conservation Authorities</li> </ul>	Field studies should confirm if an ELC Vegetation Type is a rare vegetation community based on listing within Appendix M of SWHTG. <ul style="list-style-type: none"> <li>• Area of the ELC Vegetation Type polygon is the SWH.</li> <li>• SWHMiST Index #37 provides development effects and mitigation measures.</li> </ul>	The study area does not meet key criteria. No further evaluation undertaken.

Table 5.1-5.6 (AEC 06-057)

**Table 5.3: Specialized Habitat for Wildlife**

Wildlife Habitat	Wildlife Species	Candidate SHW		Confirmed SWH	Assessment
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	
<p><b>Waterfowl Nesting Area</b></p> <p><b>Rationale:</b>                      Important to local waterfowl populations, sites with greatest number of species and highest number of individuals are significant.</p>	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 <b>Note: includes adjacency to Provincially Significant Wetlands</b>	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. <ul style="list-style-type: none"> <li>Upland areas should be at least 120 m wide so that predators such as racoons, skunks, and foxes have difficulty finding nests.</li> <li>Wood Ducks and Hooded Mergansers utilize large diameter trees (&gt;40cm dbh) in woodlands for cavity nest sites.</li> </ul> <p><u>Information Sources</u></p> <ul style="list-style-type: none"> <li>Ducks Unlimited staff may know the locations of particularly productive nesting sites.</li> <li>OMNRF Wetland Evaluations for indication of significant waterfowl nesting habitat.</li> <li>Reports and other information available from Conservation Authorities.</li> </ul>	Studies confirmed: <ul style="list-style-type: none"> <li>Presence of 3 or more nesting pairs for listed species excluding Mallards, or;</li> <li>Presence of 10 or more nesting pairs for listed species including Mallards.</li> <li>Any active nesting site of an American Black Duck is considered significant.</li> <li>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”.</li> <li>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.</li> <li>SWHMiST Index #25 provides development effects and mitigation measures.</li> </ul>	The study area does not meet ELC criteria. No further evaluation undertaken.
<p><b>Bald Eagle and Osprey Nesting, Foraging and Perching Habitat</b></p> <p><b>Rationale:</b>                      Nest sites are fairly uncommon in Eco-region 6E and are used annually by these species. Many suitable nesting locations may be lost due to increasing shoreline development pressures and scarcity of habitat.</p>	Osprey <b>Special Concern</b> 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. <ul style="list-style-type: none"> <li>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.</li> <li>Nests located on man-made objects are not to be included as SWH (e.g. telephone poles and constructed nesting platforms).</li> </ul> <p><u>Information Sources</u></p> <ul style="list-style-type: none"> <li>Natural Heritage Information Center (NHIC) compiles all known nesting sites for Bald Eagles in Ontario.</li> <li>MNRF values information (LIO/NRVIS) will list known nesting locations. Note: data from NRVIS is provided as a point and does not represent all habitat.</li> <li>Nature Counts, Ontario Nest Records Scheme data.</li> <li>OMNRF Districts</li> <li>Check the Ontario Breeding Bird Atlas or Rare Breeding Birds in Ontario for species documented</li> </ul>	Studies confirm the use of these nests by: <ul style="list-style-type: none"> <li>One or more active Osprey or Bald Eagle nests in an area.</li> <li>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.</li> <li>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.</li> <li>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.</li> <li>To be significant a site must be used annually. When found inactive, the site must be known to be inactive for &gt; 3 years or suspected of not being used for &gt;5 years before being considered not significant.</li> <li>Observational studies to determine nest site use, perching sites and foraging areas need to be done from mid March to mid August.</li> <li>Evaluation methods to follow “Bird and Bird Habitats:</li> </ul>	The study area does not meet key criteria for proximity to waterbodies. No further evaluation undertaken.

Table 5.1-5.6 (AEC 06-057)

Wildlife Habitat	Wildlife Species	Candidate SHW		Confirmed SWH	Assessment
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	
			<ul style="list-style-type: none"> <li>• Reports and other information available from Conservation Authorities.</li> <li>• Field Naturalists clubs</li> </ul>	Guidelines for Wind Power Projects”. <ul style="list-style-type: none"> <li>• SWHMiST Index #26 provides development effects and mitigation measures.</li> </ul>	
<b>Woodland Raptor Nesting Habitat</b>  <b>Rationale:</b> 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 <ul style="list-style-type: none"> <li>• 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.</li> <li>• In disturbed sites, nests may be used again, or a new nest will be in close proximity to old nest.</li> </ul> <u>Information Sources</u> <ul style="list-style-type: none"> <li>• OMNRF Districts.</li> <li>• Check the Ontario Breeding Bird Atlas or Rare Breeding Birds in Ontario for species documented.</li> <li>• Check data from Bird Studies Canada.</li> <li>• Reports and other information available from Conservation Authorities.</li> </ul>	Studies confirm: <ul style="list-style-type: none"> <li>• Presence of 1 or more active nests from species list is considered significant.</li> <li>• Red-shouldered Hawk and Northern Goshawk – A 400m radius around the nest or 28 ha area of habitat is the SWH. (The 28 ha habitat area would be applied where optimal habitat is irregularly shaped around the nest).</li> <li>• Barred Owl – A 200m radius around the nest is the SWH.</li> <li>• Broad-winged Hawk and Coopers Hawk– A 100m radius around the nest is the SWH.</li> <li>• Sharp-Shinned Hawk – A 50m radius around the nest is the SWH.</li> <li>• 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.</li> <li>• SWHMiST Index #27 provides development effects and mitigation measures.</li> </ul>	The study area does not meet minimum area criteria. No further evaluation undertaken.
<b>Turtle Nesting Areas</b>  <b>Rationale:</b> 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	<ul style="list-style-type: none"> <li>• 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.</li> <li>• 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.</li> <li>• Sand and gravel beaches adjacent to undisturbed shallow weedy areas of marshes, lakes, and rivers are most frequently used.</li> </ul> <u>Information Sources</u> <ul style="list-style-type: none"> <li>• Use Ontario Soil Survey reports and maps to help find suitable substrate for nesting turtles (well-drained sands and fine gravels).</li> <li>• 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.</li> <li>• Natural Heritage Information Center (NHIC)</li> </ul>	Studies confirm: <ul style="list-style-type: none"> <li>• Presence of 5 or more nesting Midland Painted Turtles.</li> <li>• One or more Northern Map Turtle or Snapping Turtle nesting is a SWH.</li> <li>• 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.</li> <li>• Travel routes from wetland to nesting area are to be considered within the SWH as part of the 30-100m area of habitat.</li> <li>• 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.</li> <li>• SWHMiST Index #28 provides development effects and mitigation measures for turtle nesting habitat.</li> </ul>	The study area does not meet ELC criteria. No further evaluation undertaken.

Table 5.1-5.6 (AEC 06-057)

Wildlife Habitat	Wildlife Species	Candidate SHW		Confirmed SWH	Assessment
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	
			<ul style="list-style-type: none"> <li>Field Naturalist clubs</li> </ul>		
<b>Seeps and Springs</b>  <b>Rationale:</b> 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. <ul style="list-style-type: none"> <li>Seeps and springs are important feeding and drinking areas especially in the winter will typically support a variety of plant and animal species.</li> </ul> <u>Information Sources</u> <ul style="list-style-type: none"> <li>Topographical Map</li> <li>Thermography</li> <li>Hydrological surveys conducted by Conservation Authorities and MOE.</li> <li>Field Naturalists clubs and landowners.</li> <li>Municipalities and Conservation Authorities may have drainage maps and headwater areas mapped.</li> </ul>	Field Studies confirm: <ul style="list-style-type: none"> <li>Presence of a site with 2 or more seeps/springs should be considered SWH.</li> <li>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.</li> <li>SWHMiST Index #30 provides development effects and mitigation measures.</li> </ul>	The study area does not meet key criteria. No further evaluation undertaken.
<b>Amphibian Breeding Habitat (Woodland).</b>  <b>Rationale:</b> 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.	<ul style="list-style-type: none"> <li>Presence of a wetland, pond or woodland pool (including vernal pools) &gt;500m<sup>2</sup> (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.</li> <li>Woodlands with permanent ponds or those containing water in most years until mid-July are more likely to be used as breeding habitat.</li> </ul> <u>Information Sources</u> <ul style="list-style-type: none"> <li>Ontario Herpetofaunal Summary Atlas (or other similar atlases) for records.</li> <li>Local landowners may also provide assistance as they may hear spring-time choruses of amphibians on their property.</li> <li>OMNRF District</li> <li>OMNRF wetland evaluations</li> <li>Field Naturalist clubs</li> <li>Canadian Wildlife Service</li> <li>Amphibian Road Call Survey</li> </ul>	Studies confirm; <ul style="list-style-type: none"> <li>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.</li> <li>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.</li> <li>The habitat is the wetland area plus a 230m radius of woodland area. If a wetland area is adjacent to woodland, a travel corridor connecting the wetland to the woodland is to be included in the habitat.</li> <li>SWHMiST Index #14 provides development effects and mitigation measures.</li> </ul>	Vernal pool features not present within small woodland communities on the property. No further evaluation undertaken.

Table 5.1-5.6 (AEC 06-057)

Wildlife Habitat	Wildlife Species	Candidate SHW		Confirmed SWH	Assessment
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	
			<ul style="list-style-type: none"> <li>Ontario Vernal Pool Association:  <a href="http://www.ontariovernalpools.org">http://www.ontariovernalpools.org</a></li> </ul>		
<b>Amphibian Breeding Habitat (Wetlands)</b>  <b>Rationale:</b> Wetlands supporting breeding for these amphibian species are extremely important and fairly rare within Central Ontario landscapes.	Eastern Newt American Toad Spotted Salamander Four-toed Salamander Blue-spotted Salamander Gray Treefrog Western Chorus Frog Northern Leopard Frog Pickerel Frog Green Frog Mink Frog Bullfrog	ELC Community Classes SW, MA, FE, BO, OA and SA.  Typically these wetland ecosites will be isolated (>120m) from woodland ecosites, however larger wetlands containing predominantly aquatic species (e.g. Bull Frog) may be adjacent to woodlands.	<ul style="list-style-type: none"> <li>Wetlands &gt;500m<sup>2</sup> (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.</li> <li>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.</li> <li>Bullfrogs require permanent water bodies with abundant emergent vegetation.</li> </ul> <b>Information Sources</b> <ul style="list-style-type: none"> <li>Ontario Herpetofaunal Summary Atlas (or other similar atlases)</li> <li>Canadian Wildlife Service Amphibian Road Surveys and Backyard Amphibian Call Count.</li> <li>OMNRF Districts and wetland evaluations</li> <li>Reports and other information available from Conservation Authorities</li> </ul>	Studies confirm: <ul style="list-style-type: none"> <li>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.</li> <li>The ELC ecosite wetland area and the shoreline are the SWH.</li> <li>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.</li> <li>If a SWH is determined for Amphibian Breeding Habitat (Wetlands) then Movement Corridors are to be considered as outlined in Table 1.4.1 of this Schedule.</li> <li>SWHMiST Index #15 provides development effects and mitigation measures.</li> </ul>	The study area does not meet ELC criteria. No further evaluation undertaken.
<b>Woodland Area-Sensitive Bird Breeding Habitat</b>  <b>Rationale:</b> 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  <b>Special Concern:</b> Cerulean Warbler Canada Warbler	All Ecosites associated with these ELC Community Series; FOC FOM FOD SWC SWM SWD	Habitats where interior forest breeding birds are breeding, typically large mature (>60 yrs old) forest stands or woodlots >30 ha. <ul style="list-style-type: none"> <li>Interior forest habitat is at least 200 m from forest edge habitat.</li> </ul> <b>Information Sources</b> <ul style="list-style-type: none"> <li>Local bird clubs.</li> <li>Canadian Wildlife Service (CWS) for the location of forest bird monitoring.</li> <li>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.</li> <li>Reports and other information available from Conservation Authorities.</li> </ul>	Studies confirm: <ul style="list-style-type: none"> <li>Presence of nesting or breeding pairs of 3 or more of the listed wildlife species.</li> <li>Note: any site with breeding Cerulean Warblers or Canada Warblers is to be considered SWH.</li> <li>Conduct field investigations in spring and early summer when birds are singing and defending their territories.</li> <li>Evaluation methods to follow “Bird and Bird Habitats: Guidelines for Wind Power Projects”.</li> <li>SWHMiST Index #34 provides development effects and mitigation measures.</li> </ul>	The study area does not meet minimum area criteria. No further evaluation undertaken.

Table 5.1-5.6 (AEC 06-057)

**Table 5.4: Habitat for Species of Conservation Concern (Not including Endangered or Threatened Species)**

Wildlife Habitat	Wildlife Species	Candidate SHW		Confirmed SWH	Assessment
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	
<p><b>Marsh Breeding Bird Habitat</b></p> <p><b>Rationale:</b> Wetlands for these bird species are typically productive and fairly rare in Southern Ontario landscapes.</p>	<p>American Bittern Virginia Rail Sora Common Moorhen American Coot Pied-billed Grebe Marsh Wren Sedge Wren Common Loon Sandhill Crane Green Heron Trumpeter Swan</p> <p><b>Special Concern:</b> Black Tern Yellow Rail</p>	<p>MAM1 MAM2 MAM3 MAM4 MAM5 MAM6 SAS1 SAM1 SAF1 FEO1 BOO1</p> <p>For Green Heron: All SW, MA and CUM1 sites.</p>	<ul style="list-style-type: none"> <li>Nesting occurs in wetlands.</li> <li>All wetland habitat is to be considered as long as there is shallow water with emergent aquatic vegetation present.</li> <li>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.</li> </ul> <p><u>Information Sources</u></p> <ul style="list-style-type: none"> <li>OMNRF District and wetland evaluations.</li> <li>Field Naturalist clubs</li> <li>Natural Heritage Information Center (NHIC) Records.</li> <li>Reports and other information available from Conservation Authorities.</li> <li>Ontario Breeding Bird Atlas</li> </ul>	<p>Studies confirm:</p> <ul style="list-style-type: none"> <li>Presence of 5 or more nesting pairs of Sedge Wren or Marsh Wren or 1 pair of Sandhill Cranes; <b>or</b> breeding by any combination of 5 or more of the listed species.</li> <li>Note: any wetland with breeding of 1 or more Black Terns, Trumpeter Swan, Green Heron or Yellow Rail is SWH.</li> <li>Area of the ELC ecosite is the SWH.</li> <li>Breeding surveys should be done in May/June when these species are actively nesting in wetland habitats.</li> <li>Evaluation methods to follow “Bird and Bird Habitats: Guidelines for Wind Power Projects”.</li> <li>SWHMiST Index #35 provides development effects and mitigation measures.</li> </ul>	<p>The study area does not meet ELC criteria. No further evaluation undertaken.</p>
<p><b>Open Country Bird Breeding Habitat Sources Defining Criteria</b></p> <p><b>Rationale:</b> This wildlife habitat is declining throughout Ontario and North America. Species such as the Upland Sandpiper have declined significantly the past 40 years based on CWS (2004) trend records.</p>	<p>Upland Sandpiper Grasshopper Sparrow Vesper Sparrow Northern Harrier Savannah Sparrow</p> <p><b>Special Concern</b> Short-eared Owl</p>	<p>CUM1 CUM2</p>	<p>Large grassland areas (includes natural and cultural fields and meadows) &gt;30 ha.</p> <ul style="list-style-type: none"> <li>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).</li> <li>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.</li> <li>The Indicator bird species are area sensitive requiring larger grassland areas than the common grassland species.</li> </ul> <p><u>Information Sources</u></p> <ul style="list-style-type: none"> <li>Agricultural land classification maps, Ministry of Agriculture.</li> <li>Local bird clubs.</li> <li>Ontario Breeding Bird Atlas</li> <li>Reports and other information available from Conservation Authorities.</li> </ul>	<p>Field Studies confirm:</p> <ul style="list-style-type: none"> <li>Presence of nesting or breeding of 2 or more of the listed species.</li> <li>A field with 1 or more breeding Short-eared Owls is to be considered SWH.</li> <li>The area of SWH is the contiguous ELC ecosite field areas.</li> <li>Conduct field investigations of the most likely areas in spring and early summer when birds are singing and defending their territories.</li> <li>Evaluation methods to follow “Bird and Bird Habitats: Guidelines for Wind Power Projects”.</li> <li>SWHMiST Index #32 provides development effects and mitigation measures.</li> </ul>	<p>The study area does not meet minimum area criteria. No further evaluation undertaken.</p>
<p><b>Shrub/Early Successional Bird Breeding Habitat</b></p> <p><b>Rationale:</b> This wildlife habitat is declining throughout Ontario and North America. The Brown Thrasher has declined significantly over the past 40 years based on CWS (2004) trend records.</p>	<p>Indicator Spp: Brown Thrasher Clay-coloured Sparrow Common Spp. Field Sparrow Black-billed Cuckoo Eastern Towhee Willow Flycatcher</p> <p><b>Special Concern:</b> Yellow-breasted Chat Golden-winged</p>	<p>CUT1 CUT2 CUS1 CUS2 CUW1 CUW2</p> <p>Patches of shrub ecosites can be complexed into a larger habitat for some bird species</p>	<p>Large field areas succeeding to shrub and thicket habitats &gt;10haclxiv in size.</p> <ul style="list-style-type: none"> <li>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).</li> <li>Shrub thicket habitats (&gt;10 ha) are most likely to support and sustain a diversity of these species.</li> <li>Shrub and thicket habitat sites considered significant should have a history of longevity, either abandoned fields or pasturelands.</li> </ul> <p><u>Information Sources</u></p> <ul style="list-style-type: none"> <li>Agricultural land classification maps, Ministry of Agriculture.</li> <li>Local bird clubs</li> <li>Ontario Breeding Bird Atlas</li> <li>Reports and other information available from Conservation Authorities.</li> </ul>	<p>Field Studies confirm:</p> <ul style="list-style-type: none"> <li>Presence of nesting or breeding of 1 of the indicator species and at least 2 of the common species.</li> <li>A habitat with breeding Yellow-breasted Chat or Golden-winged Warbler is to be considered as Significant Wildlife Habitat.</li> <li>The area of the SWH is the contiguous ELC ecosite field/thicket area.</li> <li>Conduct field investigations of the most likely areas in spring and early summer when birds are singing and defending their territories.</li> <li>Evaluation methods to follow “Bird and Bird Habitats: Guidelines for Wind Power Projects”.</li> <li>SWHMiST Index #33 provides development effects and mitigation measures.</li> </ul>	<p>The study area does not meet minimum area criteria. No further evaluation undertaken.</p>

Table 5.1-5.6 (AEC 06-057)

Wildlife Habitat	Wildlife Species	Candidate SHW		Confirmed SWH	Assessment
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	
	Warbler				
<b>Terrestrial Crayfish</b>  <b>Rationale:</b> Terrestrial Crayfish are only found within SW Ontario in Canada and their habitats are very rare.	Chimney or Digger Crayfish; <i>(Fallicambarus fodiens)</i>  Devil Crayfish or Meadow Crayfish; <i>(Cambarus Diogenes)</i>	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. <ul style="list-style-type: none"> <li>Constructs burrows in marshes, mudflats, meadows; the ground can't be too moist. Can often be found far from water.</li> <li>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.</li> </ul> <b>Information Sources</b> <ul style="list-style-type: none"> <li>Information sources from "Conservation Status of Freshwater Crayfishes" by Dr. Premek Hamr for the WWF and CNF March 1998.</li> </ul>	Studies Confirm: <ul style="list-style-type: none"> <li>Presence of 1 or more individuals of species listed or their chimneys (burrows) in suitable meadow marsh, swamp or moist terrestrial sites.</li> <li>Area of ELC ecosite or an ecoelement area of meadow marsh or swamp within the larger ecosite area is the SWH.</li> <li>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.</li> <li>SWHMiST Index #36 provides development effects and mitigation measures.</li> </ul>	The study area does not meet ELC criteria. No further evaluation undertaken.
<b>Special Concern and Rare Wildlife Species</b>  <b>Rationale:</b> 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  <b>Information Sources</b> <ul style="list-style-type: none"> <li>Natural Heritage Information Centre (NHIC) will have Special Concern and Provincially Rare (S1-S3, SH) species lists with element occurrences data.</li> <li>NHIC Website "Get Information" : <a href="http://nhic.mnr.gov.on.ca">http://nhic.mnr.gov.on.ca</a></li> <li>Ontario Breeding Bird Atlas</li> <li>Expert advice should be sought as many of the rare spp. have little information available about their requirements.</li> </ul>	Studies Confirm: <ul style="list-style-type: none"> <li>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.</li> <li>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.</li> <li>SWHMiST Index #37 provides development effects and mitigation measures.</li> </ul>	One species of Special Concern, Grasshopper Sparrow, has been documented on the property. The property provides no significant function for this species due to a lack of adequate-sized natural or cultural grasslands/meadows.

Table 5.1-5.6 (AEC 06-057)

**Table 5.5: Animal Movement Corridors**

Wildlife Habitat	Wildlife Species	Candidate SHW		Confirmed SWH	Assessment
		ELC Ecosite	Habitat Criteria and Information Sources	Defining Criteria	
<b>Amphibian Movement Corridors</b>  <b>Rationale:</b> 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. <ul style="list-style-type: none"> <li>Corridors will be determined based on identifying the significant breeding habitat for these species in Table 1.1</li> </ul>	Movement corridors between breeding habitat and summer habitat. <ul style="list-style-type: none"> <li>Movement corridors must be determined when Amphibian breeding habitat is confirmed as SWH from Table 1.2.2 (<b>Amphibian Breeding Habitat –Wetland</b>) of this Schedule.</li> </ul> <u>Information Sources</u> <ul style="list-style-type: none"> <li>MNRF District Office</li> <li>Natural Heritage Information Center (NHIC)</li> <li>Reports and other information available from Conservation Authorities.</li> <li>Field Naturalist Clubs</li> </ul>	<ul style="list-style-type: none"> <li>Field Studies must be conducted at the time of year when species are expected to be migrating or entering breeding sites.</li> <li>Corridors should consist of native vegetation, with several layers of vegetation.</li> <li>Corridors unbroken by roads, waterways or bodies, and undeveloped areas are most significant.</li> <li>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 &lt;20m.</li> <li>Shorter corridors are more significant than longer corridors; however amphibians must be able to get to and from their summer and breeding habitat.</li> <li>SWHMiST Index #40 provides development effects and mitigation measures.</li> </ul>	The study area provides no potential function as an amphibian movement corridor. No further evaluation undertaken.
<b>Deer Movement Corridors</b>  <b>Rationale:</b> 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 <b>Deer Wintering Habitat</b> is confirmed as SWH from Table 1.1 of this schedule. <ul style="list-style-type: none"> <li>A deer wintering habitat identified by the OMNRF as SWH in Table 1.1 of this Schedule will have corridors that the deer use during fall migration and spring dispersion.</li> <li>Corridors typically follow riparian areas, woodlots, areas of physical geography (ravines, or ridges).</li> </ul> <u>Information Sources</u> <ul style="list-style-type: none"> <li>MNRF District Office</li> <li>Natural Heritage Information Center (NHIC).</li> <li>Reports and other information available from Conservation Authorities.</li> <li>Field Naturalist Clubs</li> </ul>	<ul style="list-style-type: none"> <li>Studies must be conducted at the time of year when deer are migrating or moving to and from winter concentration areas.</li> <li>Corridors that lead to a deer wintering habitat should be unbroken by roads and residential areas.</li> <li>Corridors should be at least 200m wide with gaps &lt;20m and if following riparian area with at least 15m of vegetation on both sides of waterway.</li> <li>Shorter corridors are more significant than longer corridors.</li> <li>SWHMiST Index #39 provides development effects and mitigation measures.</li> </ul>	The study area provides no significant function as a deer movement corridor. No further evaluation undertaken.

**Table 5.6: Exceptions for EcoRegion 6E**

EcoDistrict	Wildlife Habitat and Species	Candidate			Confirmed SWH	Assessment
		Ecosites	Habitat Description	Habitat Criteria and Information	Defining Criteria	
<b>6E-14</b> <u>Rationale:</u> 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.	<b>Mast Producing Areas</b>  Black Bear	All Forested habitat represented by ELC Community Series:  FOM FOD	<ul style="list-style-type: none"> <li>Black bears require forested habitat that provides cover, winter hibernation sites, and mast-producing tree species.</li> <li>Forested habitats need to be large enough to provide cover and protection for black bears.</li> </ul>	Woodland ecosites >30ha with mast-producing tree species, either soft (cherry) or hard (oak and beech).  <u>Information Sources</u> Important forest habitat for black bears may be identified by OMNRF.	All woodlands > 30ha with a 50% composition of these ELC Vegetation Types are considered significant: FOM1-1 FOM2-1 FOM3-1 FOD1-1 FOD1-2 FOD2-1 FOD2-2 FOD2-3 FOD2-4 FOD4-1 FOD5-2 FOD5-3 FOD5-7 FOD6-5  SWHMiST Index #3 provides development effects and mitigation measures.	The study area contains no significant stands of mast-producing species. No further evaluation undertaken.
<b>6E- 17</b> <u>Rationale:</u> 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	<ul style="list-style-type: none"> <li>The lek or dancing ground consists of bare, grassy or sparse shrubland. There is often a hill or rise in topography.</li> <li>Leks are typically a grassy field/meadow &gt;15ha with adjacent shrublands and &gt;30ha with adjacent deciduous woodland. Conifer trees within 500m are not tolerated.</li> </ul>	Grasslands (field/meadow) are to be >15ha when adjacent to shrubland and >30ha when adjacent to deciduous woodland. <ul style="list-style-type: none"> <li>Grasslands are to be undisturbed with low intensities of agriculture (light grazing or late haying)</li> <li>Leks will be used annually if not destroyed by cultivation or invasion by woody plants or tree planting</li> </ul> <u>Information Sources</u> <ul style="list-style-type: none"> <li>OMNRF district office</li> <li>Bird watching clubs</li> <li>Local landowners</li> <li>Ontario Breeding Bird Atlas</li> </ul>	Studies confirming lek habitat are to be completed from late March to June. <ul style="list-style-type: none"> <li>Any site confirmed with sharp-tailed grouse courtship activities is considered significant</li> <li>The field/meadow ELC ecosites plus a 200 m radius area with shrub or deciduous woodland is the lek habitat</li> <li>SWHMiST Index #32 provides development effects and mitigation measures</li> </ul>	The study area is not located on Manitoulin Island. No further evaluation undertaken.



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## APPENDICES

- Appendix A: Relevant Planning Documents**
  - Appendix B: Nottawasaga Valley Conservation Authority**
  - Appendix C: Ministry of Natural Resources and Forestry**
  - Appendix D: Ontario Breeding Bird Atlas**
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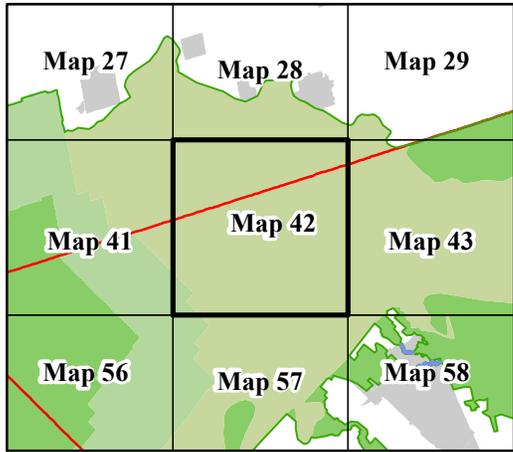
**APPENDIX A**

**Relevant Planning Documents**

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# greenbelt



### LEGEND



- Greenbelt Area\*
- Protected Countryside
- Natural Heritage System
- Towns / Villages
- Urban River Valleys
- Niagara Escarpment Plan Area
- Oak Ridges Moraine Area
- External Connections
- Settlement Areas Outside the Greenbelt
- Upper Tier Municipal Boundaries
- Lower & Single Tier Municipal Boundaries
- Lots and Concessions
- Major Road or Highway
- Minor Road
- F.N. First Nations

The information displayed on this map has been compiled from various sources. While every effort has been made to accurately depict the information, this map should not be relied on as being a precise indicator of locations of features or roads nor as a guide to navigation.

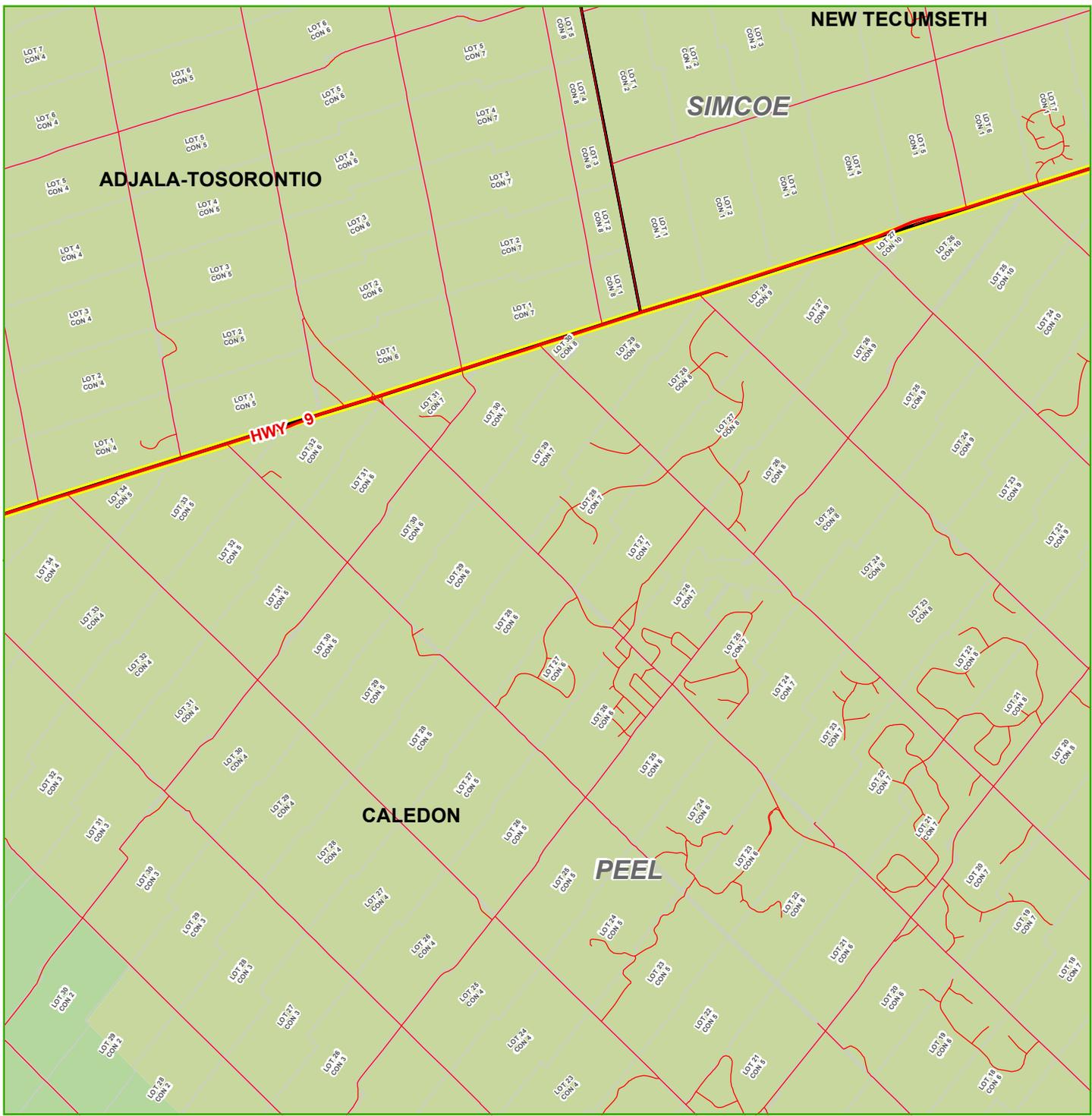
Settlement boundaries generally reflect information provided by the relevant municipality. For precise boundaries and locations of Settlement Areas (Greenbelt Towns/Villages and Hamlets) the appropriate municipalities should be consulted.

Source of Information:  
 Produced by and using data sources from the Ministry of Municipal Affairs, Ministry of Natural Resources and Forestry and the Ministry of Agriculture, Food and Rural Affairs.

Projection: UTM Zone 17 NAD83  
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\* Ontario Regulation 59/05, as amended.

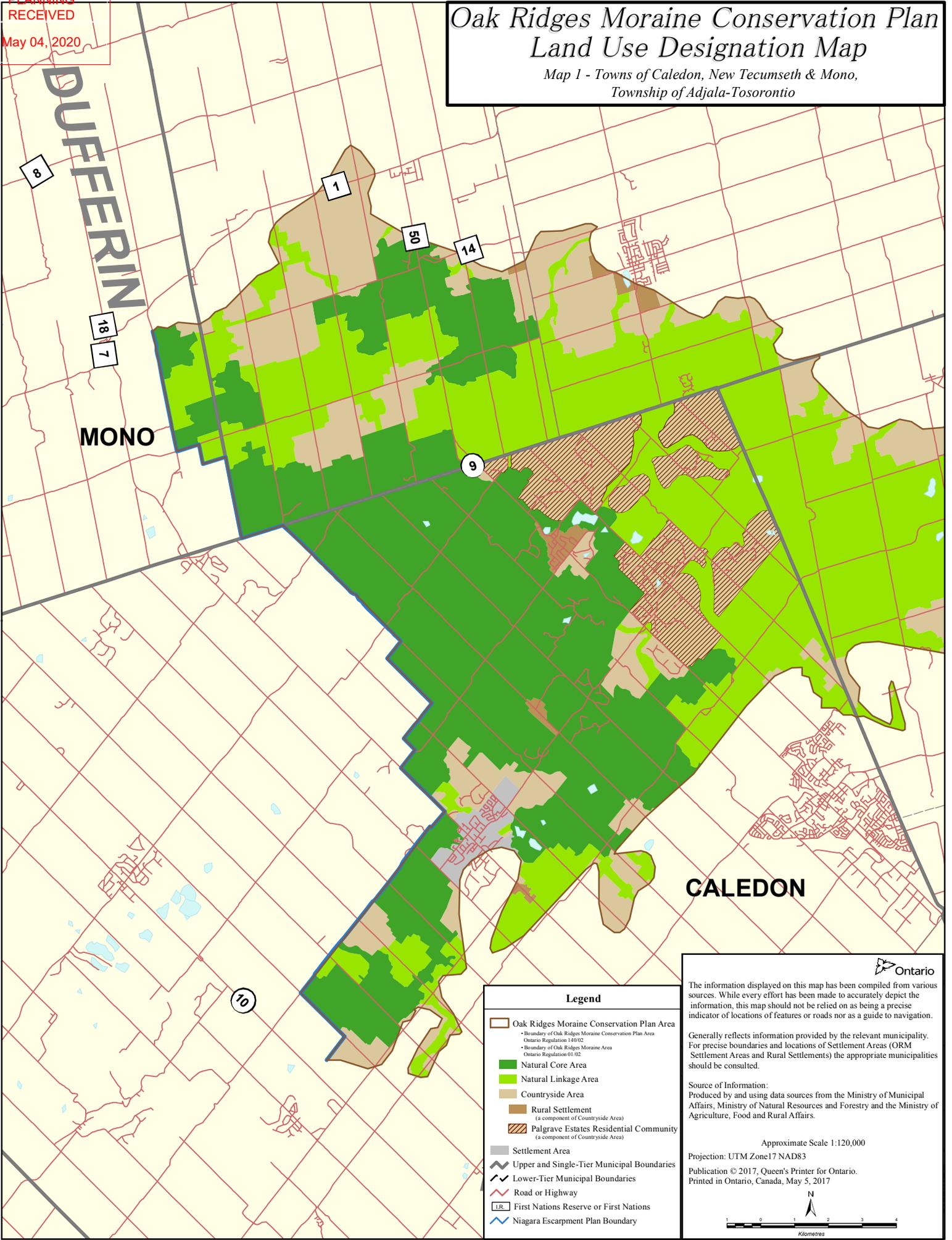




TOWN OF CALEDON  
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# Oak Ridges Moraine Conservation Plan Land Use Designation Map

Map 1 - Towns of Caledon, New Tecumseth & Mono,  
 Township of Adjala-Tosorontio



**Legend**

- Oak Ridges Moraine Conservation Plan Area
  - Boundary of Oak Ridges Moraine Conservation Plan Area (Ontario Regulation 140/02)
  - Boundary of Oak Ridges Moraine Area (Ontario Regulation 01/02)
- Natural Core Area
- Natural Linkage Area
- Countryside Area
- Rural Settlement (a component of Countryside Area)
- Palgrave Estates Residential Community (a component of Countryside Area)
- Settlement Area
- Upper and Single-Tier Municipal Boundaries
- Lower-Tier Municipal Boundaries
- Road or Highway
- 1R First Nations Reserve or First Nations
- Niagara Escarpment Plan Boundary

Ontario

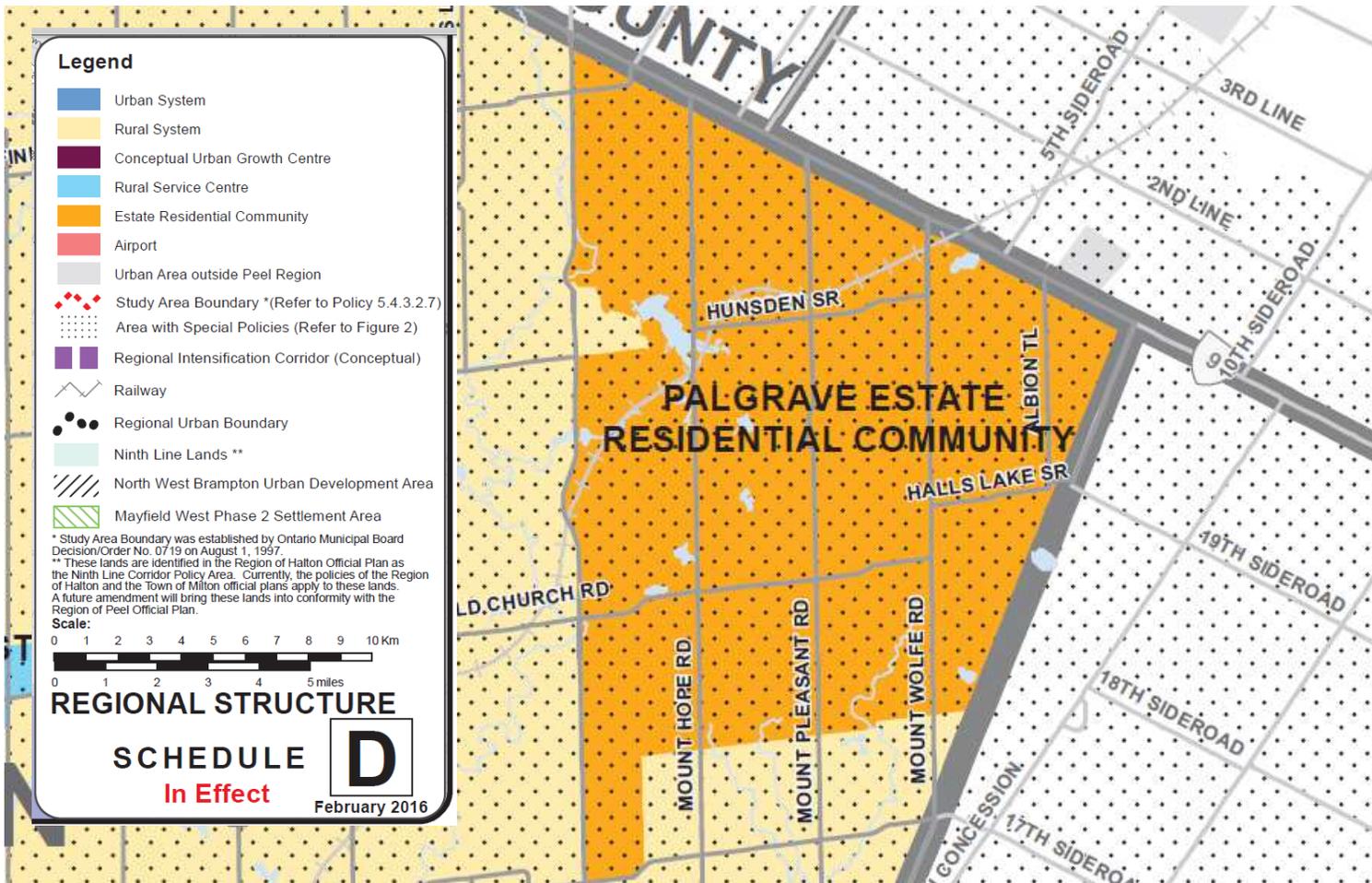
The information displayed on this map has been compiled from various sources. While every effort has been made to accurately depict the information, this map should not be relied on as being a precise indicator of locations of features or roads nor as a guide to navigation.

Generally reflects information provided by the relevant municipality. For precise boundaries and locations of Settlement Areas (ORM Settlement Areas and Rural Settlements) the appropriate municipalities should be consulted.

Source of Information:  
 Produced by and using data sources from the Ministry of Municipal Affairs, Ministry of Natural Resources and Forestry and the Ministry of Agriculture, Food and Rural Affairs.

Approximate Scale 1:120,000  
 Projection: UTM Zone17 NAD83  
 Publication © 2017, Queen's Printer for Ontario.  
 Printed in Ontario, Canada, May 5, 2017

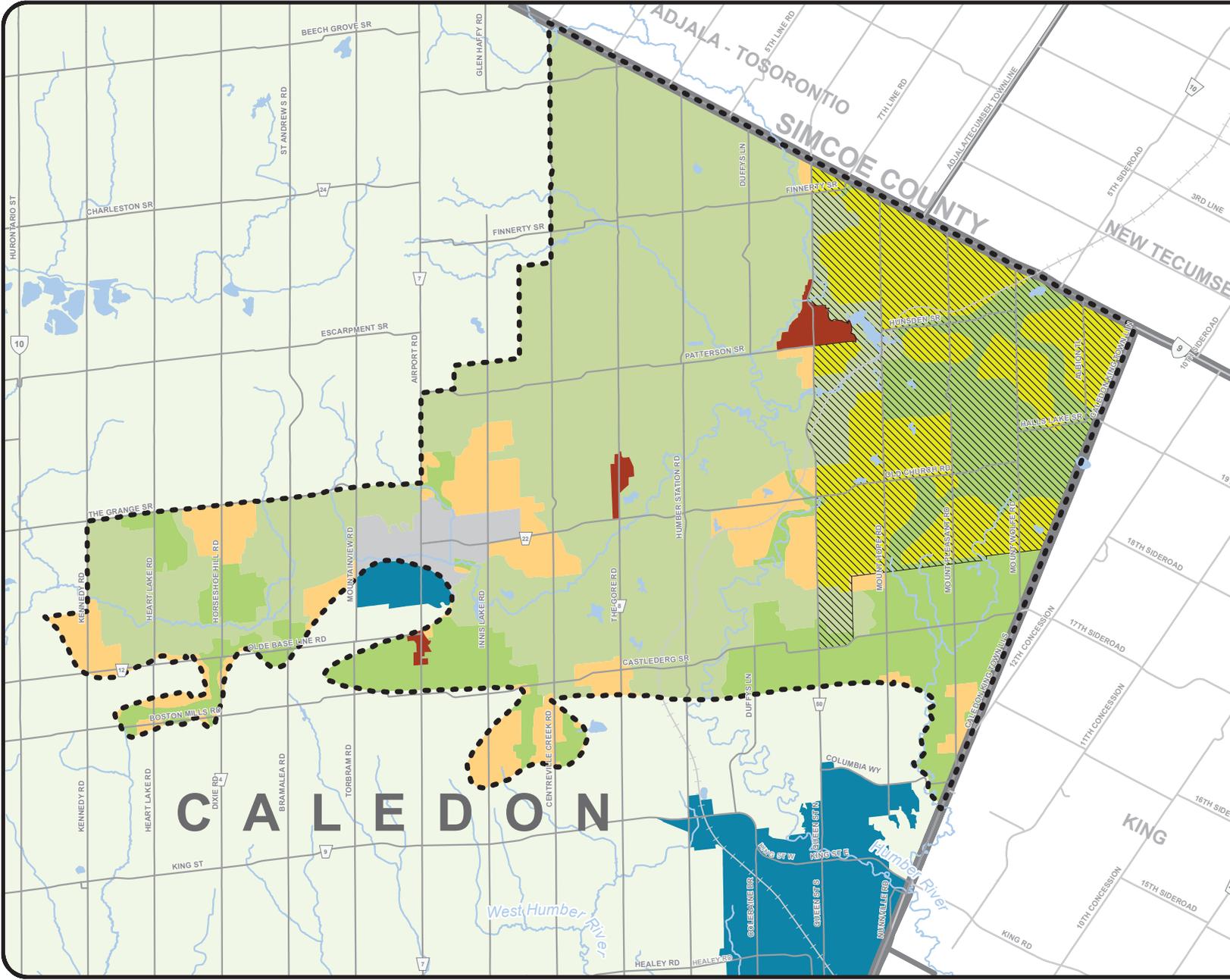
Kilometres



Excerpt from the Region of Peel Official Plan (Schedule D: Regional Structure)

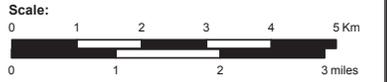
This Schedule forms part of the Region of Peel Official Plan and should be read in conjunction with the Plan's written text and with the area municipal official plans.

Information outside of Peel Region is shown on this Schedule for illustrative purposes to display inter-regional linkages.



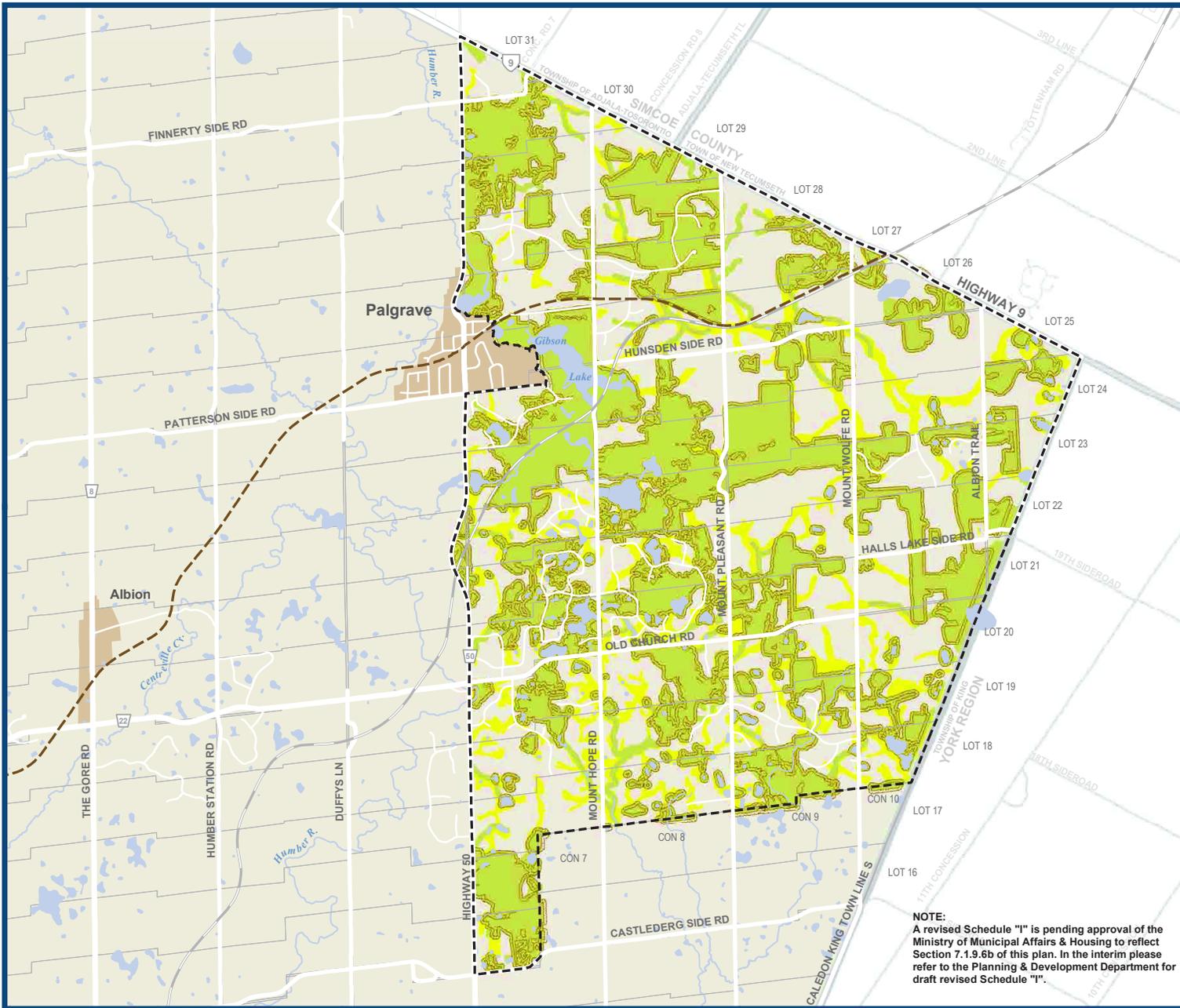
**Legend**

- Natural Core Area
- Natural Linkage Area
- Countryside Area
- Rural Settlement  
(Component of Countryside Area)
- Palgrave Estates Residential Community  
(Component of Countryside Area)
- Settlement Area
- Rural System Outside ORMCPA
- Rural Service Centre outside ORMCPA
- Palgrave Estates Residential Community  
(Refer to Town of Caledon Official Plan)
- External boundary of ORMCPA



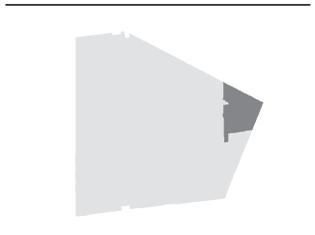
**OAK RIDGES MORaine  
 CONSERVATION  
 PLAN AREA (ORMCPA)  
 LAND USE DESIGNATIONS**

SCHEDULE **D1**  
 In Effect  
 October 2015



**TOWN OF CALEDON** Schedule I  
**PALGRAVE ESTATE  
 RESIDENTIAL COMMUNITY  
 ENVIRONMENTAL ZONING**

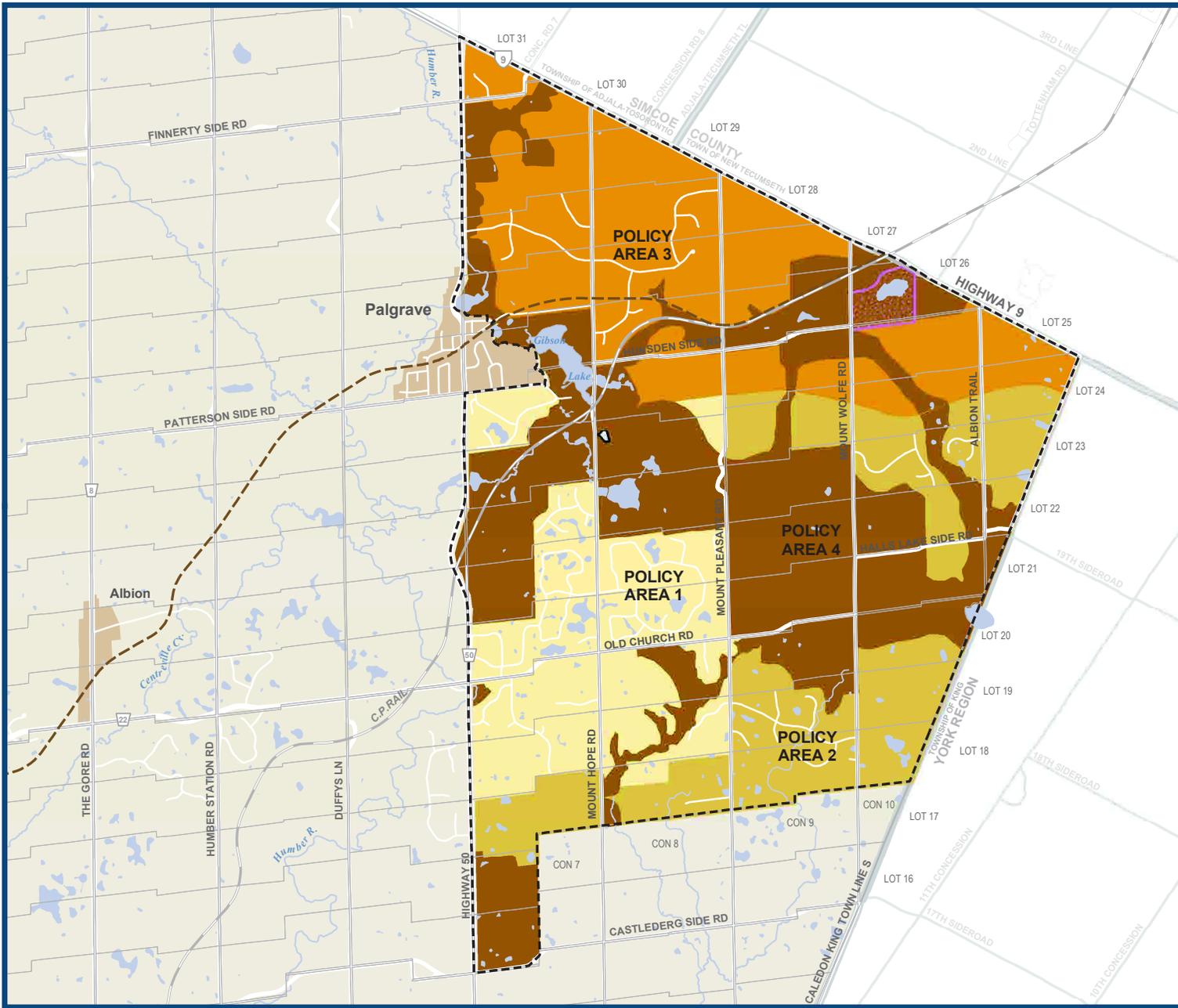
- Environmental Zone 1
  - Environmental Zone 2
  - Palgrave Estate Residential Community
  - Minimum Vegetation Protection Zone
  - Settlement Area
- 
- Provincial Road
  - Regional Road
  - Local Road
  - Railway
  - Caledon Trailway



Base Data Source: Town of Caledon

**NOTE:**  
 A revised Schedule "I" is pending approval of the Ministry of Municipal Affairs & Housing to reflect Section 7.1.9.6b of this plan. In the interim please refer to the Planning & Development Department for draft revised Schedule "I".



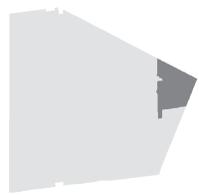




## Schedule G PALGRAVE ESTATE RESIDENTIAL COMMUNITY

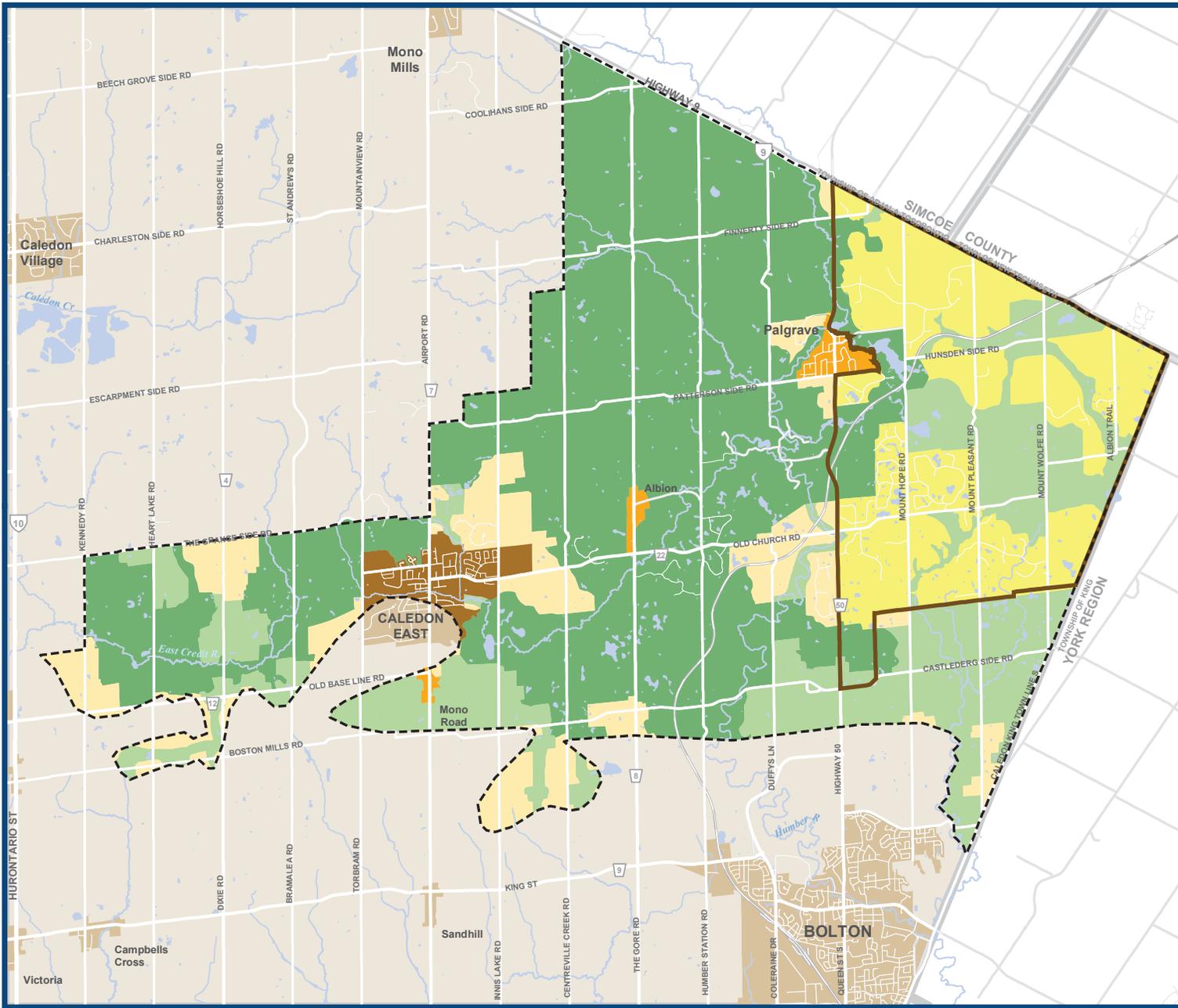
- Policy Area 1
- Policy Area 2
- Policy Area 3
- Policy Area 4
- Existing Extractive Industrial
- Special Policy Area - Waste Disposal
- Palgrave Estate Residential Community
- Settlement Area
- Caledon Trailway

- Provincial Road
- Regional Road
- Local Road
- Railway



Base Data Source: Town of Caledon





## Schedule P

Oak Ridges Moraine Conservation Plan

### LAND USE DESIGNATIONS

- Natural Linkage Area
- Natural Core Area
- Countryside Area
- Rural Settlement\*
- Palgrave Estate Residential Community\*
- Settlement Area
- Palgrave Estate Residential Community
- Oak Ridges Moraine Conservation Plan Area
- Settlement Area outside Oak Ridges Moraine

- Provincial Road
- Regional Road
- Local Road
- Railway

\*A component of Countryside Area



Base Data Source: Town of Caledon, Greenbelt Plan 2005






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**APPENDIX B**

**Nottawasaga Valley Conservation Authority**

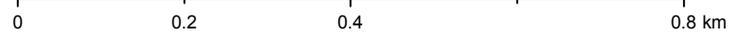
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May 04, 2020



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This map is intended for personal use, has been produced using data from a variety of sources and may not be current or accurate.  
Produced (in part) under license from:  
© Her Majesty the Queen in Right of Canada, Department of Natural Resources:



1:9,028

March 23, 2017



**Lisa Moran**

---

**From:** Dave Featherstone [dfeatherstone@nvca.on.ca]  
**Sent:** March-13-17 3:45 PM  
**To:** Lisa Moran; Lee Bull  
**Subject:** RE: Graham Property - Part of Lots 29 & 29, Concession 9, Town of Caledon  
**Attachments:** 102619Hwy9\_Caledon\_obs.jpg

Hi Lisa. My apologies for the delay in getting back to you. Field work as per your email below is generally satisfactory but you may wish to review SAR (particularly grassland birds) on non-row crop fields within the proposed development area. The use of the TRCA rare species list is appropriate and provides consistency with TRCA approaches to the south of this property.

Lee and I met with Town and project team staff on the property on March 2016 to review the potential EZ features in the west/central portion of the property. Based on the dry swale definition in Section 7.1 of the OP, the westernmost swale on the property does not appear to be an EZ feature (either EZ1 or EZ2). The central feature (to the east) may be an EZ2 feature – it is a dry lowland/distinct landscape feature (relative to the rest of the landscape; no defined channel form or wetland species). It seldom conveys surface flows but is likely part of a broader recharge zone.

Pleased to discuss.

David Featherstone, B.Sc.  
Manager, Watershed Monitoring Program  
Nottawasaga Valley Conservation Authority  
8195 8<sup>th</sup> Line, Utopia, ON  
L0M 1T0  
(705) 424-1479 Ext. 242  
[dfeatherstone@nvca.on.ca](mailto:dfeatherstone@nvca.on.ca)

---

**From:** Lisa Moran [<mailto:Lisa@Azimuthenvironmental.Com>]  
**Sent:** January-24-17 11:05 AM  
**To:** Lee Bull  
**Cc:** Dave Featherstone  
**Subject:** Graham Property - Part of Lots 29 & 29, Concession 9, Town of Caledon

Ms. Bull,

Azimuth has received and reviewed the comments prepared by NVCA (October 30, 2015) regarding the “Graham Property” in Caledon. We are currently in the process of updating the EIS to address your comments as it relates to Ecology and the Environmental Zoning (EZ).

At this time, I wanted to confirm that NVCA is satisfied with the level of field work completed for property which included:

- Vegetation surveys on July 5, 2006, June 12, 2007 and July 23, 2007;
- A single dawn breeding bird survey on June 12, 2007; and
- Documented all incidental wildlife observations while on site in 2006 and 2007.

TOWN OF CALEDON  
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Additionally, does NVCA want our updated report and figures to include references to TRCA rare species as I know we are close to the boundary of the TRCA watershed? Currently, our 2007 report makes reference to both Riley (1989) and TRCA rare species (which would be updated, if required).

Please advise.

Regards,

*Lisa Moran*  
Terrestrial Ecologist

Azimuth Environmental Consulting, Inc  
642 Welham Road  
Barrie, ON, L4N 9A1  
ph: (705) 721-8451 ext 202  
cell: (705) 331-1479  
[lisa@azimuthenvironmental.com](mailto:lisa@azimuthenvironmental.com)  
[www.azimuthenvironmental.com](http://www.azimuthenvironmental.com)

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

May 04 2018



**Nottawasaga Valley  
Conservation Authority**

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April 17, 2018

SENT BY EMAIL

Ms. Mary Nordstrom MCIP, RPP  
Senior Development Planner  
6311 Old Church Road  
Caledon, ON L7C 1J6

Dear Ms. Nordstrom

**Re: Graham Property Part of Lots 28 & 29, Concession 9  
Town of Caledon  
Proposed Draft Plan of Subdivision 21T-08001C  
Zoning By-law Amendment Application RZ 08-05**

The Nottawasaga Valley Conservation Authority (NVCA) has completed our review of the most recent submission in support of a 21 unit estate residential plan of subdivision including a stormwater management block. We offer the following comments.

NVCA staff has reviewed the information presented in:

- GHD, "Functional Servicing & Stormwater Management Report for the Graham Lands, Town of Caledon", dated March 2017
- V.A Woods Associates Limited "Hydrogeological Investigation- Proposed Residential Development, Highway 9/Mount Pleasant Road; Palgrave, Ontario" dated July, 2016
- Azimuth Environmental Consulting, "Environmental Impact Study" updated July 2017
- Robert Russell Planning Consultants Inc., "Response Matrix Letter Graham Property (1685078 Ontario Inc.)" dated July 24, 2017
- Golder Associates, dated Feb 14, 2018 titled "Peer review of hydrogeology report for proposed residential development Highway 9/Mount Pleasant Road, Palgrave, Ontario"

## **ENGINEERING**

### **Stormwater Management**

1. The NVCA recommends the use of the MTO's online tool available at [www.mto.gov.on.ca/IDF\\_Curves/terms.shtml](http://www.mto.gov.on.ca/IDF_Curves/terms.shtml) for the creation of IDF storm data.
2. A geotechnical investigation has been completed in support of the infiltration system. The NVCA accepts this analysis.
3. The curve numbers used are in the range of 62 to 68 for the pre-development scenario. In the post-development scenario the CN values should be higher. Please show calculations for the lower numbers.
4. Please show how the runoff coefficients were calculated along with the time of concentration and time to peak.

5. Please supply digital model of all stormwater calculations.
6. In the event of frozen or clogged soil there must be an emergency overflow path for the stormwater runoff. The calculations confirming the capacity of the emergency runoff flow path are required.
7. The storm sewer has been sized for the 100 year storm. In the event that the sewer is clogged please confirm that conveyance of the runoff will continue to the proposed pond. The drainage easement seems small to convey flow overland, and the grades may not work. Please confirm that the drainage will not flow on to the adjacent property to the south.
8. Please ensure that any riprap has been sized using the appropriate design flow rate. These calculations will need to be provided with the detailed design submission.
9. Easements for access to and from the infiltration pond are required. We defer to the municipality as to whether the maintenance accesses are sized in accordance with municipal standards.
10. Approval from the municipality is required for the acceptance of drainage from the property onto the adjacent right-of-way. A maintenance access way is shown from Mount Pleasant Road to the infiltration pond. Approval from the Municipality is required for an access from this roadway.
11. Detailed sediment and erosion control is to be provided with the detailed design submission.
12. Please provide landscape plans for the proposed stormwater management pond with the detailed design submission. Plantings should be native to the Caledon area.

### **Geotechnical Considerations**

13. Section 2.3 of the NVCA Stormwater Technical Guide requires a geotechnical engineer's letter/report confirming the feasibility of the conceptual stormwater management design from a geotechnical perspective

### **Hydrogeological Investigation**

14. Please provide information on the potential impacts that the development may have to: proximal water courses, wetland features and functions, and springs/seeps.
15. Please provide water balance calculations to evaluate post development recharge rates against pre development infiltration rates.
16. In the site description, please provide information on the site topography and drainage along with a description of the natural heritage features.
17. Regarding Section 2.0- geological information- please provide information on aquifer properties, depth to water table, and groundwater flow direction.
18. It is understood that the development will be serviced by individual septic systems. We note that review and approval of the individual septic systems (<10,000 l/day) is within the purview of the municipality.

19. The Golder Associates peer review comments which recommend the installation of monitoring wells to meet the Official Plan requirements, the completion of a water balance, and nitrate loading calculations are acceptable to NVCA staff.

## ECOLOGY

The NVCA has reviewed the Environmental Impact Study (Updated July 2017) prepared by Azimuth in support of proposed estate residential development on this property. We offer the following comments based on this review and previous site visits on this and adjacent properties.

20. We concur that the EZ1 feature currently mapped on the west portion of the property is indistinct on the landscape, part of active agricultural fields and does not need either EZ1 or EZ2 status based on the definition in the Town's Official Plan. However, we believe that the EZ2 mapping on Figure 3 is incomplete – it should include the two south arms of the feature roughly as depicted in the attachment. We note that the south arm(s) lie outside of the proposed development envelopes in an area of proposed reforestation so this may not be significant issue. NVCA staff believes reforestation in these areas is appropriate.
21. Eight Toronto Region Conservation Authority (TRCA) rare species were observed on the property. Most were observed along the south fencerow and the vegetation communities around the existing residential property well east of the proposed development. Four species lie within the proposed development area (along the south fencerow). The EIS correctly notes that none of these species are rare according to Riley (1989) which is our standard reference for rare species in our watershed (with some interpretation). We do not have a concern from our watershed perspective regarding these species and it is likely that they will persist provided the fencerows are left intact.
22. Significant woodlands (the forests associated with the existing residence and extending off property) may meet the size criterion for significant woodlands in Settlement Areas; however, these forests are far removed from proposed development. We are satisfied with the EZ1 mapping in this area.
23. Twelve hectares of reforestation is proposed in support of the proposed development. Concepts are proposed to be refined at detailed design stage of the planning process. As per other proposed developments in this area, we recommend that bollards/signage (or equivalent) be placed at the edge of these reforestation areas where they are part of proposed lots to educate landowners and discourage encroachment.

## LAND USE PLANNING

24. With respect to the proposed Zoning By-law Amendment, staff are in agreement with the Town's approach that a restrictive zoning of EPA1-ORM be applied to the EZ1 feature on proposed Lot 22.

TOWN OF CALEDON  
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May 04, 2020

**Graham Property 21T-08001C & RZ 08-05**  
**Part Lots 28 & 29, Concession 9**  
**Town of Caledon**

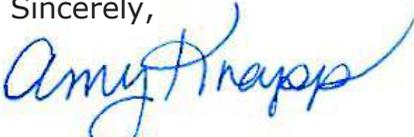
**April 17, 2018**

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Thank-you for the opportunity to provide further comments and we look forward to continuing our review on this project.

If you have any questions regarding the above comments, please do not hesitate to contact the undersigned at extension #233 or [aknapp@nvca.on.ca](mailto:aknapp@nvca.on.ca)

Sincerely,



Amy Knapp  
Planner II





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**APPENDIX C**

**Ministry of Natural Resources and Forestry**

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## Aurora MNR Information Request Form

Name:

Company Name:

Proponent Name:

Phone Number:

Email Address:

Project Name:

Property Location  
(address):

Township  
(Geographic):

Lot & Concession:

UTM Coordinates:

Brief Description  
of Undertaking

Have you previously contacted someone at MNR for information on this site?  Yes  No

If yes, when and  
who?

Provide a map of accurate scale to illustrate footprint/study area of the proposed activity in relation to the surrounding landscape (e.g. property boundaries, roads, waterbodies, natural features, towns, transmission corridors, and other human landmarks). Use of aerial photography is strongly encouraged. Include scale, north arrow and legend.

**ATTACHMENTS** - I have attached a:

Picture

Map

Other

**REQUEST** - I would like to request the following information for the property identified above:

- Fish Dot Information (fish and other aquatic species found in a particular area of a watercourse)  ANSI Mapping (hard copy) and/or check- sheet - please provide name of ANSI if known
- Wetland Mapping (hard copy) and/or evaluation and data record - please provide name of wetland if known  Nesting Sites  Species at Risk

Please forward the completed form to: [esa.aurora@ontario.ca](mailto:esa.aurora@ontario.ca)

Or send by mail:

Attn: Assistant Species at Risk Biologist  
Aurora District, Ministry of Natural Resources  
50 Bloomington Rd Aurora, ON L4G 0L8

May 04, 2020

Ministry of  
Natural Resources  
and Forestry

Aurora District Office  
50 Bloomington Road  
Aurora, Ontario L4G 0L8

Ministère des  
Richesses naturelles  
et des Forêts

Telephone: (905) 713-7400  
Facsimile: (905) 713-7361



February 9, 2017

Lisa Moran  
Terrestrial Ecologist  
Azimuth Environmental Consulting Inc.  
642 Welham Road  
Barrie, ON L4N 9A1  
705-721-8451 ext. 202  
[Lisa@Azimuthenvironmental.com](mailto:Lisa@Azimuthenvironmental.com)

**Re: Graham Property, Mount Pleasant Road and Highway 9, Caledon**

Dear Lisa Moran,

In your email dated January 26, 2017 you requested information regarding the above location.

Species at risk recorded in the vicinity include Butternut (endangered), Bobolink (threatened) and Eastern Meadowlark (threatened). There is potential for endangered bats (i.e., Eastern Small-footed Myotis, Little Brown Myotis, Northern Myotis, Tri-colored Bat) in cavities.

Absence of information provided by MNRF for a given geographic area, or lack of current information for a given area or element, does not categorically mean the absence of sensitive species or features. Appropriate inventory work is needed depending on the undertakings proposed. Approval from MNRF may be required if work you are proposing could cause harm to any species that receive protection under the *Endangered Species Act 2007*.

Species at risk information is highly sensitive and is not intended for any person or project unrelated to this undertaking. Please do not include any specific sensitive information in reports that will be available for public record. As you complete your fieldwork in these areas, please report all information related to any species at risk to our office. This will assist with updating our database and facilitate early consultation regarding your project.

If you have any questions or comments, please do not hesitate to contact [ESA.aurora@ontario.ca](mailto:ESA.aurora@ontario.ca) or [Bohdan.Kowalyk@Ontario.ca](mailto:Bohdan.Kowalyk@Ontario.ca).

Sincerely,

A handwritten signature in black ink that reads "B. Kowalyk".

Bohdan Kowalyk, R.P.F.

Technical Specialist, Aurora District, Ontario Ministry of Natural Resources and Forestry



**Legend**

- Assessment Parcel
- Woodland
- Conservation Reserve
- Provincial Park
- Natural Heritage System
- Ecoregion
- Wetland**
  - Provincially Significant Wetland Evaluated
  - Non - Provincially Significant Wetland Evaluated
  - Unevaluated Wetland
- Area of Natural Heritage & Scientific Interest (ANSI)**
  - Provincially Significant Life Science ANSI
  - Provincially Significant Earth Science ANSI
- Greenbelt Plan**
  - Boundary
  - River Valley Connections
- Land Use Designations**
  - Protected Countryside
  - Towns and Villages
  - Hamlets
  - Urban River Valley
  - Specialty Crop Area
- Niagara Escarpment Plan (NEP)**
  - Boundary
  - Parks and Open Space System
- Land Use Designations**
  - Escarpment Natural Area
  - Escarpment Protection Area
  - Escarpment Rural Area
  - Mineral Resource Extraction Area
  - Escarpment Recreation Area
  - Urban Area
  - Minor Urban Centre
- Oak Ridges Moraine Conservation Plan (ORM)**
  - Boundary
  - Natural Core Area
  - Natural Linkage Area
  - Countryside Area
  - Rural Settlement
  - Palgrave Estates Residential Community
  - Settlement Area

0.5 0 0.23 0.5 Kilometers

Scale: 1 : 9,027



This map should not be relied on as a precise indicator of routes or locations, nor as a guide to navigation. The Ontario Ministry of Natural Resources and Forestry(OMNRF) shall not be liable in any way for the use of, or reliance upon, this map or any information on this map.

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**APPENDIX D**

**Ontario Breeding Bird Atlas**

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PLANNING RECEIVED  
May 04, 2020



**Square Summary (17NJ96)**

#species (1st atlas)				#species (2nd atlas)				#hours		#pc done	
poss	prob	conf	total	poss	prob	conf	total	1st	2nd	road	offrd
16	29	67	112	10	35	85	130	138	208	52	7

**Region summary (#10: Halton-Peel-Dufferin)**

#squares	#sq with data		#species		#pc done	target #pc
	1st	2nd	1st	2nd		
38	38	38	160	177	1681	950

**Target number of point counts in this square:** 21 road side, 4 off road (2 in deciduous forest, 1 in coniferous forest, 1 in mixed forest). Please try to ensure that each off-road station is located such that the entire 100m radius circle is within the prescribed habitat.

SPECIES	BE 2nd	BE 1st	% 2nd	% 1st
Pied-billed Grebe	FY		36	10
American Bittern	S	H	23	31
Least Bittern ?	T		15	7
Great Blue Heron §	NY	H	65	73
Green Heron §	T	NY	86	97
Yellow-crn N.-Heron ?		H	0	2
Turkey Vulture	FY	P	89	73
Canada Goose	FY	FY	100	94
Wood Duck	FY	AE	89	78
Gadwall ?			7	2
American Wigeon ?			7	2
American Black Duck	H	P	28	31
Mallard	FY	FY	97	100
Blue-winged Teal		FY	34	81
Northern Shoveler ?			5	2
Northern Pintail			2	7
Green-winged Teal			10	0
Hooded Merganser	FY		42	18
Common Merganser ?	FY		5	5
Osprey ?			13	2
Northern Harrier	T	CF	81	86
Sharp-shinned Hawk	CF	H	76	44
Cooper's Hawk	FY		68	21
Northern Goshawk	FY		34	18
Red-should Hawk ?			23	15
Broad-winged Hawk	AE	H	57	47
Red-tailed Hawk	FY	CF	100	100
American Kestrel	FY	NY	92	100
Ring-necked Pheasant		T	21	28

SPECIES	BE 2nd	BE 1st	% 2nd	% 1st
Ruffed Grouse	D	FY	78	89
Wild Turkey	FY		68	7
Northern Bobwhite ?			2	2
Virginia Rail	FY	T	71	52
Sora	T	T	57	57
Common Moorhen	P		23	7
American Coot			15	13
Coot/Moorhen			0	0
Killdeer	FY	DD	100	100
Spotted Sandpiper	FY	DD	84	97
Upland Sandpiper		FY	39	71
Common Snipe	D	T	65	55
American Woodcock	FY	T	92	84
Wilson's Phalarope ?			2	5
Herring Gull §		H	2	15
Black Tern ? §			2	2
Rock Dove	NY	NY	100	100
Mourning Dove	NE	NE	100	100
Black-billed Cuckoo	T	S	86	71
Yellow-billed Cuckoo	CF	H	52	28
Black/Yell-billed Cuckoo			34	0
Eastern Screech-Owl	AE	T	97	60
Great Horned Owl	FY	T	76	92
Barred Owl ?	FY		13	2
Long-eared Owl	H	T	10	13
North Saw-whet Owl	S		7	10
Common Nighthawk	H	T	31	42
Whip-poor-will	S	T	10	23
Chimney Swift	AE	D	71	71

SPECIES	BE 2nd	BE 1st	% 2nd	% 1st
Ruby-thr Hummingbird	AE	D	89	89
Belted Kingfisher	AE	CF	100	100
Red-head Woodpecker ?	H	S	26	76
Red-bell Woodpecker ?	H		36	5
Yellow-bellied Sapsucker	FY	P	55	57
Downy Woodpecker	NY	D	100	100
Hairy Woodpecker	FY	FY	100	97
Northern Flicker	FS	AE	100	100
Pileated Woodpecker	NY	P	97	81
Olive-sided Flycatcher ?			0	2
Eastern Wood-Pewee	T	FY	100	100
Alder Flycatcher	T	A	86	65
Willow Flycatcher	T	T	86	68
Least Flycatcher	T	CF	97	92
Eastern Phoebe	NY	NY	97	94
Gr Crested Flycatcher	T	CF	100	100
Eastern Kingbird	FY	CF	100	100
Yellow-throated Vireo			31	23
Blue-headed Vireo ?	S		42	2
Warbling Vireo	T	CF	100	100
Red-eyed Vireo	FY	CF	100	100
Blue Jay	AE	NY	100	100
American Crow	CF	CF	100	100
Common Raven ?	D		2	0
Horned Lark	T	P	92	97
Purple Martin	AE	NY	34	42
Tree Swallow	NY	NY	100	94
North Rgh-wing Swallow	CF	CF	84	100
Bank Swallow §	AE	NY	76	97

[next page >>](#)

Ontario Breeding Bird Atlas - Summary Sheet for Square 17NJ96 (page 2 of 2)

SPECIES	BE 2nd	BE 1st	% 2nd	% 1st	SPECIES	BE 2nd	BE 1st	% 2nd	% 1st	SPECIES	BE 2nd	BE 1st	% 2nd	% 1st
Cliff Swallow §	AE	NY	86	81	Northern Parula ?			5	2	Swamp Sparrow	T	FY	92	89
Barn Swallow	AE	NY	100	100	Yellow Warbler	FY	NY	100	97	White-throat Sparrow	FY	CF	76	81
Black-capp Chickadee	AE	NY	100	100	Chestn-sided Warbler	T	CF	84	71	Northern Cardinal	FY	CF	92	92
Red-breast Nuthatch	AE	CF	78	60	Magnolia Warbler	T	T	60	23	Rose-breast Grosbeak	FY	CF	100	97
White-breast Nuthatch	FY	FY	97	94	Black-thr Blue Warbler			39	2	Indigo Bunting	FY	CF	100	100
Brown Creeper	AE		71	47	Yellow-rumped Warbler	T	S	68	23	Bobolink	FS	NY	100	97
Carolina Wren ?			26	2	Black-thr Green Warbler	T		73	42	Red-wing Blackbird	AE	NY	100	100
House Wren	AE	NY	100	100	Blackburnian Warbler	T		47	34	Eastern Meadowlark	T	CF	97	100
Winter Wren	T	A	71	71	Pine Warbler	CF	S	84	42	Western Meadowlark ?			0	2
Sedge Wren	S		36	10	Black-white Warbler	T	S	84	76	Common Grackle	NE	CF	100	100
Marsh Wren	T		31	18	American Redstart	A	P	92	60	Brown-head Cowbird	T	D	100	100
Golden-crown Kinglet	FY	H	42	26	Ovenbird	NE	CF	92	92	Orchard Oriole			28	23
Blue-gr Gnatcatcher		S	36	23	North Waterthrush	FS	CF	73	73	Baltimore Oriole	FY	NY	100	100
Eastern Bluebird	NY	NY	84	44	Louis Waterthrush ?			15	10	Purple Finch	FY	A	68	39
Veery	T	CF	89	81	Mourning Warbler	FY	CF	94	76	House Finch	AE	P	86	18
Swainson's Thrush ?			0	2	Common Yellowthroat	FY	CF	100	100	Red Crossbill			0	7
Hermit Thrush ?	T		26	2	Canada Warbler		T	47	50	White-winged Crossbill ?	NY		2	0
Wood Thrush	A	A	100	89	Yellow-breast Chat ?			0	5	Pine Siskin	NB		10	13
American Robin	CF	NY	100	100	Scarlet Tanager	FY	S	84	76	American Goldfinch	FY	NY	100	100
Gray Catbird	FS	NE	100	100	Eastern Towhee	T	S	86	65	House Sparrow	AE	NY	100	100
Northern Mockingbird	FY		47	7	Chipping Sparrow	CF	CF	100	100					
Brown Thrasher	T	NE	97	100	Clay-colored Sparrow	CF		42	13					
European Starling	AE	CF	100	100	Field Sparrow	NY	CF	84	86					
Cedar Waxwing	FY	CF	100	100	Vesper Sparrow	FY	CF	78	92					
Blue-winged Warbler	CF		50	21	Savannah Sparrow	CF	CF	100	100					
Golden-winged Warbler	T		28	28	Grasshopper Sparrow	FY	CF	65	76					
Blue/Gold-wing Warbler			18	0	Henslow's Sparrow ?			2	10					
Brewster's Warbler ?			7	2	Song Sparrow	NE	NE	100	100					
Nashville Warbler	T	T	84	76	Lincoln's Sparrow ?			2	2					

This list includes all species found during the Ontario Breeding Bird Atlas (1st atlas: 1981-1985, 2nd atlas: 2001-2005) in the region #10 (Halton-Peel-Dufferin). Underlined species are those that you should try to add to this square. They have not yet been reported during the 2nd atlas, but were found during the 1st atlas in this square or have been reported in more than 50% of the squares in this region during the 2nd atlas so far. In the species table, "BE 2nd" and "BE 1st" are the codes for the highest breeding evidence for that species in square 17NJ96 during the 2nd and 1st atlas respectively. The % columns give the percentage of squares in that region where that species was reported during the 2nd and 1st atlas (this gives an idea of the expected chance of finding that species in region #10). Rare/Colonial Species Report Forms should be completed for species marked: § (Colonial), ? (regionally rare), or ? (provincially rare). Current as of 15/10/2007. An up-to-date version of this sheet is available from <http://www.birdsontario.org/atlas/summaryform.jsp?squareID=17NJ96>

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TOWN OF CALEDON  
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**APPENDIX E**

**ORMCP Conformity Report**

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## **OPA 186 – Oak Ridges Moraine Conservation Plan-Conformity Report- Protecting Ecological and Hydrological Integrity**

### **INTRODUCTION**

A proposed subdivision development is to be located in Lot 28, Concession 9, Town of Caledon (Town) and the Region of Peel (Region). An Environmental Impact Study (EIS) is required as the property has been designated as Greenbelt Plan Area according to the Region, as part of Environmental Zones (1 and 2) in the Town's Official Plan (OP), and as part of the Palgrave Estate Residential Community within the Oak Ridges Moraine Plan (ORM) Area. In accordance with the ORM Conservation Act, 2001, the Town adopted OP Amendment 186 to bring the Town's OP into conformity with the ORM Conservation Plan (CP, Ontario Regulation 140/02). This report addresses the issues of the ORM conformity OP Amendment 186.

### **LAND USE DESIGNATIONS**

#### **1. Section 13 (ORMCP) – Countryside Areas**

The property is within the Palgrave Estate Residential Community which is a component of the Countryside Area (Schedule P, Oak Ridges Moraine Conservation Plan, Land Use Designations, Town of Caledon, 2016). Residential development is permitted within this designation in accordance with Section 14 of the ORMCP.

### **PROTECTING ECOLOGICAL AND HYDROLOGICAL INTEGRITY**

#### **2. Section 20 (ORMCP) -Supporting Connectivity**

The property is not defined as a Natural Core or Natural Linkage Area thus this section does not apply to the subject property (Schedule P, Oak Ridges Moraine Conservation Plan, Land Use Designations, Town of Caledon, 2016).

#### **3. Section 21 (ORMCP) -Minimum area of influence and Minimum Vegetative Protection Zone**

There are no Key Natural Heritage Features (KNHF) or Hydrologically Sensitive Features (HSF) which would require Minimum Areas of Influence (MAI) nor Minimum Vegetative Protection Zones (MVPZ).

#### **4. Section 22 (ORMCP) -Key Natural Heritage Features**

There no KNHF defined by Section 22 of the ORMCP (Refer to Azimuth's EIS Report).



## **5. Section 23 (ORMCP) -Natural Heritage Evaluation**

A Natural Heritage Evaluation (NHE) has been completed as part of Azimuth's EIS demonstrating no adverse effects on the ecological functions of the property. (No KNHF exist on the property). Sections b) through f) are not relevant to the subject property since there are no KNHF, the property is not mapped as Natural Core Area or Natural linkage. Although the property is mapped as countryside area (as part of the Palgrave Estate Residential Community) there are no features that would require a MVPZ as per the table within Part III of the ORMCP.

## **6. Section 26 (ORMCP) - Key Hydrologic Features**

There are no HSF as defined by Section 26 of the ORMCP (Refer to Azimuth's EIS Report).

## **AQUIFER VULNERABILITY**

### **7. Section 29 (ORMCP) Areas of High Aquifer Vulnerability**

The property is within an area identified of High Aquifer Vulnerability (Schedule P-1, Oak Ridges Moraine Conservation Plan, Aquifer Vulnerability Areas, Town of Caledon, 2016). None of the prohibited uses as listed within Subsection (5) are proposed on the property.

## **SEWAGE AND WATER SERVICES**

### **8. Section 43 1 b (ORMCP) - Quantity and quality of groundwater and surface water will be maintained**

Given the nature of the proposed site development, runoff and infiltration will be affected from only about 3 ha of the total 30.17 ha site due to hard surface cover (roads, driveways and houses). Infiltration will be reduced (pre-mitigation) by approximately 8,400 m<sup>3</sup> (70% of the surplus from hard surface areas). This would be offset by an increase in surface runoff by the same amount. This infiltration loss will be mitigated through the construction of storm water infiltration areas, as detailed in the Functional Servicing Report (GHD (formerly Sernas Associates, 2007 with 2017 updates). Post-development infiltration may also be further maintained through direction of rooftop leaders to grassed areas.

Ground water quality impacts were assessed as part of the Hydrogeological Assessment conducted for the proposed development (Azimuth, 2007). The quality issues were related to potentially elevated nitrate and chloride concentrations resulting from septic effluent and road salting. Water quality issues relating to septic effluent discharge were



found to cause only negligible effects on the shallow ground water system. It should be noted that the current agricultural land use most likely provides a substantial source of nitrate to the shallow ground water and therefore any nitrate contributions from the proposed development will likely be lower than that due to the current land use.

Similarly, chloride impacts from the additional road salt added to the new road will prove to be insignificant relative to the contribution from Highway 9, which forms the northern boundary of the subject property.

For a more detailed description of the quality and quantity assessment please refer to the abovementioned report. Further clarification and discussion was provided by Azimuth within a response letter to comments from the Nottawasaga Valley Conservation Authority (NVCA) (February 2014).

## **STORMWATER MANAGEMENT**

### **9. Section 45 (ORMCP) – Stormwater Management Plans**

A Stormwater Management (SWM) Report has been prepared by GHD (Functional Servicing & Stormwater Management Report, revised March 2017). The details of the proposed SWM can be found within the GHD report

The SWM plan for the subject site does not require the disposal of stormwater into a kettle lake.

The proposed SWM infiltration basins are not located within a KNHF or HSF.

### **10. Section 47 (ORMCP) – Rapid Infiltration Basins**

There are no rapid infiltration basins or columns being proposed for the servicing of the subject site.