



**Scoped Environmental Impact Study**  
**Part of Lot 21, Concession 15**  
**Town of Innisfil, Simcoe County, ON**  
**Update**

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Southbrook Custom Homes

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## **1.0 INTRODUCTION**

Azimuth Environmental Consulting, Inc. (Azimuth) completed a Scoped Environmental Impact Study (EIS) for the proposed development of a Residential Subdivision on part of Lot 21, Concession 15, in the Settlement of Gilford, Town of Innisfil, Simcoe County in 2017 (Figure 1).

It is our understanding that the client wishes to obtain approval for a residential infill development of the property. A Scoped EIS was required by the Town of Innisfil (Town) and the Lake Simcoe Region Conservation Authority (LSRCA) to determine the natural environmental features and functions of the property and to assess the potential impacts of the proposed development upon the natural environmental features and functions in accordance with provincial and municipal planning policy. The original 2017 EIS report was submitted and reviewed by the LSRCA. Comments were provided within a letter dated March 27, 2019 (Appendix B). The intent of this update is to address LSRCA comments/concerns.

## **2.0 PLANNING CONTEXT**

### **2.1 Provincial Policy Statement (2014)**

The Planning Act requires that planning decisions shall be consistent with the *Provincial Policy Statement, 2014* (PPS; MMAH, 2014). 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.

Similarly, 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 within:

- Significant wetlands in the Canadian Shield north of Ecoregions 5E, 6E and 7E;
- Significant woodlands in Ecoregions 6E and 7E (excluding islands in Lake Huron and the St. Marys River);
- Significant valleylands in Ecoregions 6E and 7E (excluding islands in Lake Huron and the St. Marys River);
- 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.

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. The Natural Heritage Reference Manual (OMNR, 2010) and Ecoregion 6E Significant Wildlife Habitat Criterion Schedule (OMNR, 2015, Table 1) were used to identify candidate features considered applicable to the property and adjacent lands.

## **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 (EXT), END, THR, and Special Concern (SC). As noted above, only species listed as END and THR receive protection through the ESA from harm and destruction to habitat on which they depend. Species designated as SC may receive habitat protection under the SWH provisions of the PPS.

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

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

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

### **2.3 Federal Fisheries Act**

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

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

### **2.4 County of Simcoe**

Schedule 5.1- Land Use Designations of the County’s Official Plan (2016) shows the property as being located within the Settlement Area of Gilford. It is the County’s goal to focus population and employment growth and development within settlements. Specific landuse designations within the Settlement Area boundaries are defined within the local municipal plan (Section 3.5.5 of the County OP).

### **2.5 Town of Innisfil**

#### **2.5.1 Official Plan**

The property is mostly designated as Hamlet Residential, as per Schedule B10 of the Town of Innisfil Official Plan, 2018 (Appendix A). The northwest portion of the property is designated as Key Natural Heritage Features & Key Hydraulic Features, due to the presence of a permanent water feature.

The permitted uses associated the Hamlet Residential designation include: single detached dwellings, accessory dwelling units, home occupations, bed and breakfast

establishments, parks, community hubs including existing schools, places of worship and other local community uses as per Section 10.5.2 of the Town's Official Plan (2018). The lot density of the Village Residential Area should generally be in the range of 2.5 units per net hectare, but the specific density should be confirmed through a hydrogeological study that assesses the assimilative capability of the soils (Section 10.5, Our Place Innisfil Official Plan, 2018).

Permitted uses within Key Natural Heritage Features and Key Hydraulic Features are limited to forest, fish and wildlife management, conservation and flood or erosion control projects, infrastructure authorized under an environmental assessment process, passive low intensity recreational uses, existing buildings and structure, existing agricultural uses, buildings and structures and small scale structures for recreational purposes (Section 17-1-8 of the Town's Official Plan). Within settlement areas, a buffer shall be established adjacent to Key Natural Heritage Features and Key Hydrologic Features prior to permitting development on adjacent lands as determine by a Natural Heritage Evaluation (Section 17.1.18 Innisfil Official Plan, 2018).

#### 2.5.2 Zoning By-Law

According to the Town of Innisfil Zoning By-law (Appendix A), the property is mostly zoned as Agriculture General Zone. The watercourse is located within the Environmental Protection zone.

The permitted uses within the Agriculture General Zone include: agriculture, nursery, stable, various accessory uses, buildings and structures including home industry and single detached dwelling. In order for the development of a Residential Subdivision to occur, a rezoning application will be required.

### 2.6 Lake Simcoe Region Conservation Authority

A portion of the property is subject to Ontario Regulation 179/06 "Regulation of Development Interference with Wetlands and Alterations to Shorelines and Watercourses", associated with a permanent watercourse. A development permit will be required if development is proposed within regulated areas (Appendix B).

### 2.7 Lake Simcoe Protection Plan, 2009

The property is located within the Lake Simcoe watershed, and thus is subject to the policies of the Lake Simcoe Protection Plan (LSPP; MMAH, 2009). Specifically, policies 6.32-DP to 6.35-DP are applicable, as the Property is located within the Settlement Area of Gilford. Applications for development and site alteration within Settlement Areas should:

- a) increase or improve fish habitat in streams, lakes and wetlands, and any adjacent riparian areas;
- b) include landscaping and habitat restoration that increase the ability of native plants and animals to use valleylands or riparian areas as wildlife habitat and movement corridors;
- c) seek to avoid, minimize and/or mitigate impacts associated with the quality and quantity of urban run-off into receiving streams, lakes and wetlands; and
- d) establish or increase the extent and width of a vegetation protection zone adjacent to Lake Simcoe to a minimum of 30 metres where feasible.

### **3.0 STUDY APPROACH**

The following outlines the activities undertaken to satisfy the informational requirements of the LSRCA in the production of the EIS.

#### **3.1 Background Data**

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

- Aerial images (Google, VuMap);
- Atlas of the Breeding Birds of Ontario (OBBA) [website];
- The Ministry of Natural Resources and Forestry (MNRF)'s NHIC Make-A-Map: Natural Heritage Areas application[website];
- Ontario Nature – Ontario Reptile and Amphibian Atlas [website];
- MNRF's SARO list; and
- Dobbyn, J. (1994) – Atlas of the Mammals of Ontario.

#### **3.2 Methodology and Surveys**

##### **3.2.1 Scope of Work**

Azimuth contacted the LSRCA with a proposed Terms of Reference (Appendix B). The scope of work is described in detail below.

##### **3.2.2 Vegetation Community Mapping and Surveys**

The Ecological Land Classification for Southern Ontario (ELC; Lee *et al.*, 1998) was used as a general guide to the classification of the vegetation community types. Prior to undertaking the field studies, Azimuth completed a cursory classification of habitats using recent air photo imagery for the property. General vegetation community types were confirmed and refined through on-site surveys conducted on August 15 and October 15, 2014. The data regarding the ELC classification and vegetation observed within each community are presented in Section 4.2 and Table 2.

As per the request of LSRCA (LSRCA March, 2018, Appendix B), the LSRCA attended the site on July 26, 2018 to confirm and stake the limits of the woodlot dripline (Figure 2, Appendix B).

### 3.2.3 Wildlife Surveys

#### General

Observations of mammals, birds, amphibians, and reptiles were recorded during the field investigation (through direct observation and through interpretation of sign [*i.e.* tracks, scats, vocalizations]). Candidate Significant Wildlife Habitat (SWH) functions were evaluated according to provincial criteria [*i.e.*, Significant Wildlife Habitat Technical Guide (OMNR, 2000), Ecoregion 6E Criterion Schedule (MNR, 2015; Table 1)].

#### Birds

Two dawn breeding bird surveys were conducted on June 12th and June 23rd, 2014. Surveys were comprised of a combined point count (5 minute duration) protocol, based on the Ontario Breeding Bird Atlas Guide for Participants (OBBA, 2001) and a roving survey methodology. Point count stations were established and all birds identified through visual or auditory confirmation were recorded at each station during a five minute period. The locations of the relevant point count stations are shown on Figure 2. Breeding evidence was assessed based on the criteria of the OBBA (2001). The dates and conditions of Azimuth's 2014 dawn breeding bird surveys can be found in Table 3.

#### Species at Risk

The SAR screening included an analysis of the habitat requirements of SAR reported to occur in the overall planning area to identify those having potential to occur on or adjacent to the property based on habitats present. The MNR was contacted to obtain the most recent SAR occurrence information for the property (Appendix C). No response has been received at this time. Habitat requirements and appropriate designations for all species included in the screening are outlined in Table 4.

### **3.3 Aquatic Habitat Assessment**

Azimuth completed a desktop review of the property, particularly of the watercourse located in the northwestern portion of the property. Azimuth reviewed online databases (*i.e.*, Innisfil Creeks Subwatershed Plan, MNR Fish ON-Line, NHIC, DFO SAR mapping) to characterize the watercourse and presence of any sensitive watercourse features or fish communities (Appendix F).

## 4.0 EXISTING CONDITIONS

### 4.1 Land Use

#### 4.1.1 Onsite Land Use

The property is approximately 13.8ha of which the majority land is under cash crop production. A permanent watercourse transects the northwestern section of the property. The northwestern and southeastern sections of the property contains patches of deciduous forest. The southwestern portion of the property contains a highly disturbed willow grove, which is bound by a relatively large cultural meadow area to the east.

#### 4.1.2 Adjacent Land Use

The property is bound by Shore Acres Drive to the north and residential development present immediately north of the road. The property is also bound by residential development to the south. In the west, the property is bound by an active railway, with residential development and woodlands extending beyond the railway. A small woodland and a vacant lot, currently under development, is present east of the property. The Holland River Marsh ANSI Provincial and Holland Marsh (BW5) Evaluated Wetland are located >120m south of the residential development (Appendix C).

### 4.2 Vegetation

ELC and mapping was completed during site visits on August 15th and October 15th, 2014. The majority of the property is currently farmed. East of the farmland, there is Dry-Moist Old Field Meadow (CUM1-1) community that also extends along the northern and southern property limits. A depiction of the location of the communities is presented in Figure 2. A complete list of species identified within the property is presented in Table 2.

The Old Field Dry-Fresh Cultural Meadow (CUM1-1) community type is subject to anthropogenic influence and is predominantly composed of exotic species. Manitoba Maple (*Acer negundo*), Wild Carrot (*Daucus carota*), Coneflower (*Echinaceae* sp.), Kentucky Bluegrass (*Poa pratensis* spp. *pratensis*) and Bird's-foot Trefoil (*Lotus corniculatus*) were observed in this location. The Hedgerow vegetation includes Common Lilac (*Syringa vulgaris*), Staghorn Sumac (*Rhus typhina*), Japanese Knotweed (*Fallopia japonica*), and Orange Daylily (*Hemerocallis fulva*).

The Fresh-Moist Poplar Deciduous Forest (FOD8-1a) community type includes a canopy dominated by Trembling Aspen (*Populus tremuloides*), with occasional Black Willow (*Salix nigra*), White Ash (*Fraxinus americana*), Black Cherry (*Prunus serotina*) and Black Walnut (*Juglans nigra*). Understory and ground layers were composed of Red Raspberry (*Rubus idaeus*), Maple-leaf Viburnum (*Viburnum acerifolium*), Alternate-

leaved Dogwood (*Cornus alternifolia*), Red-osier Dogwood (*Cornus stolonifera*) and Spotted Jewelweed (*Impatiens capensis*).

The Poplar deciduous forest located in the south east corner of the property (FOD8-1b) has a slightly different species composition. The canopy is also dominated by Trembling Aspen, but with abundant Manitoba Maple, occasional White Cedar (*Thuja occidentalis*) and White Pine (*Pinus strobus*). Understory and ground layer species include Poison Ivy (*Toxicodendron radicans*), Round-leaved Dogwood (*Cornus rugosa*), Bracken Fern (*Pteridium aquilinum*) and Male Fern (*Dryopteris filix-mas*).

A willow dominated cultural woodland (CUW) is present in the south-west corner of the property. This vegetation community is highly influenced by the adjacent residential development; there are informal trails throughout the community and evidence of waste and garden refuse along the property limits.

A site screening for Butternut occurred in conjunction with the vegetation surveys; no individuals were identified.

MNRF's Natural Heritage Information Centre (NHIC) Database (NHIC, 2019) was consulted to determine if there are historic rare vegetation records within the vicinity of the property (1x1km squares 17PJ1697 and 17PJ1698). There are no rare vegetation records for the area.

#### 4.2.1 Significant Woodland Assessment

##### Provincial Policy Statement

The deciduous woodland and cultural woodland communities have been assessed according to the criteria defined by the NHRM (2010; Table 5) and the Town of Innisfil's Significant Woodland policies. It is the intent of these policies to be applied to woodland units as a whole, regardless of property boundaries. Thus, during the assessment, consideration was given to the woodland units as a whole, and was not limited to the boundary of the property.

The woodlands are NOT considered to be provincially significant, given the small size (northwest - 12ha and southeast - 4ha; Appendix D) of the forest tracts and the lack of specialized function (*i.e.* interior habitat, woodland diversity, linkage, water protection, uncommon characteristics) of the woodlots.

##### Town of Innisfil

Section 23.3.127 of the Town's Official Plan (2018) states that:

" Significant woodland means a woodland that satisfies one or more of the following criteria:

- i) Any woodland of 4ha or greater; or
- ii) Any woodland containing 1ha or more of naturally occurring (not planted) trees listed in Appendix 10 that meet the definition of “woodland”; or
- iii) Any woodland of 1ha or more that contain either:
  - (a) 10 or more trees per ha that are either greater than 100 years old or 50cm or more in diameter; or
  - (b) A basal area of at least 8 square metres per hectare in native trees that are 40cm or more in diameter; or
- iv) Any woodlands of 1ha or more wholly or partially within 30m of:
  - (a) A significant woodland;
  - (b) A naturalized lake;
  - (c) A permanent stream;
  - (d) A significant valleyland;
  - (e) A provincially significant wetland; or
  - (f) Habitat of endangered or threatened species; or
- v) Any woodland of 0.5ha or more containing:
  - (a) A provincially rare treed vegetation community with an S1, S2 or S3 in its ranking by the Ministry of Natural Resources and Forestry Natural Heritage Information Centre (NHIC), or
  - (b) Habitat of a woodland plant species with an S1, S2 or S3 in its ranking or an 8, 9 or 10 in its southern Ontario Coefficient of Conservatism by the NHIC, consisting of 10 or more individual stems or 100 or more square metres of leaf coverage”.

Neither of the two woodlands are confirmed habitat for valued species of flora or fauna, though the woodlands may support Eastern Wood-Pewee (SC; *Contopus virens*). This species was incidentally observed during the course of field investigations, but was not confirmed to be breeding.

The southeastern woodland is over 1ha in size of naturally occurring trees. The western woodland is part of the riparian corridor associated with the White Birch Creek Tributary. Therefore, the woodlands are considered to be Candidate Significant Woodland within the Town.

### **4.3 Wildlife Habitat**

#### **4.3.1 Mammals**

No wildlife sign was observed, however, given the orientation of the property within the greater rural landscape, some of the species that could potentially utilize the natural habitat of the property are: Raccoon (*Procyon lotor*), Grey Squirrel (*Sciurus carolinensis*), Red Squirrel (*Sciurus vulgaris*), Eastern Chipmunk (*Tamias striatus*), Eastern Cottontail (*Sylvilagus floridanus*), Striped Skunk (*Mephitis mephitis*), Coyote (*Canis latrans*) and White-tailed Deer (*Odocoileus virginianus*). These species are not of conservation concern.

#### **4.3.2 Birds**

Breeding Bird Surveys were conducted on June 12th, 2014 and June 23rd, 2014. Twenty-nine species of birds were observed within the property (Table 3), including two area-sensitive species: Pine Warbler (*Setophaga pinus*) and Eastern Wood-pewee; of which one, Eastern Wood-pewee, is a species listed as SC. No other species-at-risk or species of federal, provincial, municipal concern were observed.

The Ontario Breeding Bird Atlas (BSC, 2009) was also consulted to identify species that could be utilizing the area for breeding purposes. Data for the atlas is presented in 100km<sup>2</sup> data squares, each with a unique identifier. The property is located within the 17PJ19 square. A full species list for this square is presented in Appendix E.

Avian SAR identified within the OBBA database are addressed below.

### **4.4 Aquatic Habitat**

The property is located in the Innisfil Creeks Subwatershed, which is situated within the larger Lake Simcoe Watershed (LSRCA, 2012). The northeast and southwest corners of the lot are regulated by the LSRCA (Figure 2). Additionally, the roadside ditch along Shore Acres Drive is also regulated by LSRCA (Figure 2). There is only one watercourse located within the property limits, which intersects the northwest corner of the property (Figure 2). This watercourse is a tributary of White Birch Creek and flows in a northerly direction. The tributary meets the main branch of White Birch Creek approximately 150 m north of Shore Acres Road, where it then flows in an easterly direction and outlets to Lake Simcoe, approximately 1.5 km east of the property.

The tributary of White Birch Creek traverses the property through a naturally vegetated corridor. Based on aerial photography, the system appears to be small (< 3 m wetted width) and naturally meanders through a large woodland feature upstream (west of the property) before entering a golf course downstream (north of the property). According to

the Innisfil Creek Subwatershed Plan (LSRCA, 2012), coldwater species, including Mottled Sculpin (*Cottus bairdii*), have been found in White Birch Creek. As seen in the LSRCA figures provided in Appendix F, the tributary of White Birch Creek has a coolwater thermal regime with current records of Mottled Sculpin (LSRCA, 2012). Fish barriers do exist through the watercourse, which may limit fish passage, although the biotic integrity rating for the tributary was rated “Good” by the LSRCA (LSRCA, 2012; Appendix F). A complete list of fish species known to occur within White Birch Creek is as follows: White Sucker (*Catostomu commersonii*), Central Mudminnow (*Umbra limi*), Northern Redbelly (*Chrosomus eos*), Common Shiner (*Luxilus cornutus*), Fathead Minnow (*Pimephales promelas*), Blacknose Dace (*Rhinichthys atratulus*), Longnose Dace (*Rhinichthys cataractae*), Creek Chub (*Semotilus atromaculatus*), Brook Stickleback (*Culaea inconstans*), Pumpkinseed (*Lepomis gibbosus*), Yellow Perch (*Perca flavescens*), Johnny Darter (*Etheostoma nigrum*), and Mottled Sculpin (LSRCA, 2012).

According to LSRCA (2012), DFO SAR mapping, and MNRF Fish ON-Line (MNRF, 2016), there are no known occurrences of aquatic SAR within White Birch Creek or its tributaries.

#### **4.5 Species at Risk (SAR)**

The Ontario Breeding Bird Atlas (BSC, 2009; Appendix E) and NHIC’s online database (NHIC, 2019) was consulted to identify SAR that could be utilizing the area for breeding purposes. Eleven SAR were identified as occurring within the squares: Peregrine Falcon (*Falco peregrinus*), Common Nighthawk (*Chordeiles minor*), Red-headed Woodpecker (*Melanerpes erythrocephalus*), Chimney Swift (*Chaetura pelagica*), Whip-poor-will (*Antrostomus vociferus*), Eastern Wood-pewee (*Contopus virens*), Bank Swallow (*Riparia riparia*), Barn Swallow (*Hirundo rustica*), Wood Thrush (*Hylocichla mustelina*), Eastern Meadowlark (*Sturnella magna*) and Bobolink (*Dolichonyx oryzivorus*). Table 4 presents a habitat assessment for the species, as it relates to the property. Only Eastern Wood-pewee were observed utilizing the property during Azimuth’s field visits.

MNRF’s Natural Heritage Information Centre (NHIC) Database (NHIC, 2019) was consulted to determine if there are historic SAR records within the vicinity of the subject properties (1x1km squares 17PJ1697 and 17PJ1698). The query indicated that Red-headed Woodpecker (SC) has been recorded in the area.

In addition to the aforementioned species, we have also considered the potential for the occurrence of Butternut (*Juglans cinerea*), based on the existing habitat and a general knowledge of the area.

Correspondence was sent to the Midhurst District MNRF requesting any additional records which may be available for the property (Appendix C). To date, a response has not been received from the MNRF.

The abovementioned SAR and their preferred habitat were screened to determine whether there is potentially suitable habitat on the property for these species (Table 4). Based on this cursory screening, the property has the potential to provide habitat for Eastern Wood-pewee (SC), Barn Swallow (THR), Red-headed Woodpecker (SC), Snapping Turtle (SC; *Chelydra serpentina*), and three bat species [Little Brown Myotis (END; *Myotis lucifugus*), Northern Myotis (END; *Myotis septentrionalis*), Tri-colored Bat (END; *Perimyotis subflavus*)]. The potential impact of the development is discussed in the Species at Risk Impact Assessment section below.

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

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

### **5.1 Fish Habitat**

Based on available background information, the tributary of White Birch Creek that traverses the northwest corner of the property can be classified as providing permanent direct fish habitat for a coldwater/coolwater fish community. Additionally, the tributary of White Birch Creek, the southeast corner of the property, and the ditch along Shore Acres Road to the north is subject to Ontario Regulation 179/06 “Regulation of Development Interference with Wetlands and Alterations to Shorelines and Watercourses” (Appendix B, Figure 2).

### **5.2 Candidate Significant Wildlife Habitat**

Table 1 provides an assessment of candidate SWH functions. Based on provincial criteria our findings indicate that there are several potential candidate SWH related to the property including:

- Bat Maternity Colonies;
- Deer Yarding Areas - Stratum II; and
- Special Concern & Rare Wildlife Species.

### 5.2.1 Bat Maternity Colony

According to the SWHTG Ecoregion 6E Criteria Schedules (MNRF, 2015), Bat Maternity Colony habitat requires large diameter trees containing cavities or loose bark pockets of sufficient size to house five or more adults, within deciduous swamp communities. The minimum density criteria for candidate habitat is more than 10 large diameter trees per ha. Though no studies to quantify the number of candidate trees have occurred, we have chosen to be conservative in our assessment and have identified the potential for bat candidate maternity colony habitat to occur within the acquired lands.

### 5.2.2 Deer Yarding Areas - Stratum II

According to the SWHTG Ecoregion 6E Criteria Schedules (MNRF, 2015) Deer Yarding - Stratum II areas are comprised of mixed or deciduous and coniferous forest, and includes agricultural lands. The property is comprised of these land types and Stratum II lands have been mapped by MNRF within Gilford. Thus, the property is considered to be candidate SWH for Deer Yarding - Stratum II.

### 5.2.3 Special Concern & Rare Wildlife Species

According to the SWHTG Ecoregion 6E Criteria Schedules (MNRF, 2015), SWH for Rare and Special Concern species is characterized by the presence of any species considered provincially rare (ranked S1-S3) or designated SC under the ESA. Species of SC identified on the property (Eastern Wood-pewee), and those with potential to be present on the property (Red-headed Woodpecker and Snapping Turtle) are addressed in Table 4 of this report and considered on an individual basis.

## 5.3 Candidate Significant Woodland

The two woodland features extending into the property limits meet the Town of Innisfil's criteria for significant woodland as they meet the size criteria for significance and the western community is associated with White Birch Creek. Thus, the woodlands are considered to be Candidate Significant Woodland within this EIS.

## 5.4 Endangered and Threatened Species

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

- Potential Roosting Habitat for Endangered Bat Species.
- Potential foraging habitat for Barn Swallow (THR)

#### 5.4.1 Endangered Bat Species

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

#### 5.4.2 Barn Swallow

Barn Swallow typically nests within open structures with horizontal supports, such as barns, bridges and out buildings (COSEWIC, 2011). Thus, the species is likely nesting on adjacent lands, given the extent of residential and rural development adjacent to the property. The species forages in open habitats such as grassy fields, pastures, agricultural crops, riparian areas and wetlands (COSEWIC, 2011). Barn Swallow was not observed during field investigations, however, potential foraging habitat for the species exists within the property, and thus impact to the species is considered within the context of potential development impact.

## 6.0 PROPOSED DEVELOPMENT

The proposed development is a residential infill comprised numerous estate single family residential lots (Appendix G, Figure 3). As per the request of LSRCA, all lot lines have been removed from the setbacks and the natural heritage features, as discussed below. The development will be serviced with municipal water, and private onsite sewage service systems.

The development includes a proposed cut and fill exercise to remove portions of lots 1,2,3 and 23 from the Regional Floodplain, as prepared by a.m. Candaras associates inc. (2019; Figure 3, Appendix G). Cut activities are proposed within the cultural meadow community in addition to the abovementioned four lots which are currently in an agricultural state.

A Stormwater Management (SWM) wetland facility will be constructed to provide enhanced water quality and quantity controls as per the design criteria of the Town, LSRCA and MOE Stormwater Management Guidelines. Phosphorus removal is provided by a treatment train approach composed of the SWM Wetland (pond) and the perforated pipe infiltration system. The controlled storm flows from the proposed development will be discharged to the existing ditch which will be reconstructed to meet Town standards and to accommodate all flows. At the south property boundary, an interceptor swale will be constructed to direct flows to the woodlot. More details

regarding SWM can be found within the Stormwater Management & FSR Report prepared by a.m. Candaras associates inc. (2019).

## **7.0 IMPACT ASSESSMENT**

The results of background data review, detailed site assessments and analysis revealed the following natural heritage features and functions associated with the property and adjacent lands:

- Direct Fish Habitat;
- Candidate Significant Wildlife Habitat:
  - Bat Maternity Colonies (Potential);
  - Deer Yarding Areas - Mapped Stratum II;
  - Habitat for Special Concern Species (Confirmed and Potential); and
- Candidate Significant Woodland (Town); and
- Potential and Confirmed Habitat for THR and END Species:
  - Barn Swallow (Potential); and
  - Endangered Bat Species (Potential).

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

### **7.1 Fish Habitat**

Based on our understanding of the proposed development (Figure 3), the tributary of White Birch Creek will remain unaltered. No structures or alteration to grade are proposed within 30m of the tributary. To remove lots (or portions) 1,2,3 and 23 from the regional floodplain (LSRCA regulated area; Figure 2), cut/fill activities are proposed within the cultural meadow community and agricultural lands. Both the cut and fill areas are greater than 30m from the tributary as shown on Figure 3. If standard mitigation measures as described in Section 8.0 are implemented during construction, no significant impacts to fish or fish habitat are anticipated.

An LSRCA Work Permit will be required due to the proposed works within the regulated floodplain (Figure 2) as per Ontario Regulation 179/06 “Regulation of Development Interference with Wetlands and Alterations to Shorelines and Watercourses”. Due to all works occurring beyond 30 m from the White Birch Creek tributary, it is not anticipated that 'serious harm to fish' will occur if the appropriate mitigation measures are implemented during construction. Therefore, DFO review is not required for this development. If plans are altered, the requirement for DFO review will need to be revisited.

## 7.2 Candidate Significant Wildlife Habitat and Candidate Significant Woodland

All of the Candidate Significant Wildlife Habitat components, as identified in previous sections, associated with the property are located within the Candidate Significant Woodland communities. These woodland features will be retained, in their entirety, post development in addition to a 10m buffer. For the western woodland communities, this can be easily achieved as this feature is contained within the Regional Floodplain limit. Therefore, a buffer in excess of 10m will remain adjacent to the majority of the buffer. All grading activities associated with the proposed cut/fill will be located at least 10m from the staked woodland and will be naturalized once earth works are complete. Thus the woodland will be protected from site alteration and encroachment related to proposed cut/fill activities in addition to future residential use, and no impact will occur to the feature or its habitat functions.

Similarly, the eastern feature will be retained in its entirety post-development. A 10m buffer will remain adjacent to the feature. The SWM facility will remain adjacent to the northern portion of the woodland and its associated 10m buffer. Any grading activities associated with the SWM facility will occur outside of the 10m buffer.

Although not a natural feature, a properly managed SWM pond can represent a relatively benign use on the landscape and in many respects, function to provide habitat for local wildlife, much like a natural wetland community. Stormwater controls should be implemented to meet Ministry of the Environment and Climate Change standards for water quality and quantity. Furthermore, in accordance with the Town and LSRC requirements, the SWM facility should be planted with native vegetation to provide a naturalized feature contributing to the buffer area for the eastern woodlot.

Only one lot (Lot 35) will abut the buffer to the eastern woodlot. The limit of the buffer (and Lot 35) should be delineated with a fence. Furthermore, future buyers should be made aware of responsible stewardship practices acceptable when living adjacent to natural features, including but not limited to:

- Prevention of spills and discharge of household contaminants such as paint, cleaners, petrol products, pool water, *etc.*;
- Avoidance of disposal of garbage and garden waste within the forest feature; and
- Proper maintenance of outdoor garbage and compost facilities to prevent acclimatization of nuisance species populations.

If future landowners are made aware of their role as stewards of the eastern forest feature, and the actions that they should take to ensure protection and longevity of the feature, we do not anticipate negative impact to the eastern woodland as result of the proposed development.

## **7.3 Potential Habitat for Threatened and Endangered Species**

### **7.3.1 Endangered Bat Species**

As noted above, potential habitat for Little Brown Myotis, Northern Long-eared Myotis, and Tri-colored bat is present within the property; large trees within the woodland communities may provide suitable roosting habitat for these species. Thus, the woodland habitat may provide such habitat and may be utilized by the individuals. It is our understanding that all woodland communities will be preserved in their current state, post development. Thus, no impact to potential habitat for SAR bat individuals will be impacted during the development, provided that, the features are protected during development, and properly managed post-development, as discussed in Section 7.2.

### **7.3.2 Barn Swallow**

Though the species was not confirmed during breeding bird surveys, potential foraging habitat for the species is present within the property, specifically within the cultural meadow community. The development, as proposed, will both permanently and temporarily alter a portion of this community. One development lot (Lot 24) is proposed within the meadow community. In addition to this, grading works are proposed to allow for floodplain alteration within the property (Figure 3). Thus, there is potential for the development to impact the species, if they are foraging within the cultural meadow habitat and if works occur during the species' active season. To avoid potential impact to the species, all vegetation removal and grading works should occur outside of the active season. For this property, the active season for Barn Swallow is April 10th to August 5th (ECCC, 2016) inclusive. All disturbed lands to be re-naturalized should be seeded immediately with a native upland meadow seed mix and an annual oats nurse crop to ensure that meadow habitat remains within the landscape.

## **8.0 RECOMMENDATIONS AND MITIGATION**

The following items should be considered in order to mitigate any potential impact of the proposed development, and to ensure that the development is in keeping with municipal and provincial policies and legislation.

1. Sediment and Erosion Control Plans should be developed prior to the commencement of site grading and grubbing. Diligent application of sediment and erosion controls should be required for all construction activities in proximity to a watercourse to minimize the extent of accidental or unavoidable impacts to fish habitat, and alleviate the risk of sediment entering the tributary. Sediment

- and erosion control measures must be maintained throughout construction and until vegetation is reestablished post-construction;
2. Vegetation reestablishment is to occur as soon as possible following construction and grading activities associated with the cut/fill exercise. Restoration of the proposed cut areas should be over seeded with a native seed mix. Furthermore, native, non-invasive species should be utilized in all landscaped areas of the proposed development to the greatest extent possible.
  3. Any requirement for dewatering within the property should include the use of enviobags and sediment traps (or equivalent) located an adequate distance from watercourses with proper overland flow paths atop stable vegetation to ensure that proper filtration of discharge water occurs prior to entering the receiving watercourse. Runoff should be directed away from exposed soil surfaces to mitigate the potential for soil mobilization;
  4. Snow fencing or equivalent should be installed at the limit of the work area to prevent the accidental intrusion of machinery operations into adjacent undisturbed natural areas. At least a 10m buffer shall remain adjacent to the identified woodland areas and a 30m buffer shall remain adjacent to the watercourse;
  5. Stockpiled material should be stored a minimum of 30m from watercourses with adequate sediment and erosion controls to prevent excess material from entering the waterway;
  6. A Spill Response Plan and the appropriate contingency materials to absorb a spill should be on the site at all times. All equipment maintenance and refueling must be conducted at least 30m from the watercourse.
  7. Vegetation removal within the property should occur outside of the migratory bird nesting season to reduce the risk of damaging active bird nests and ensure that individuals utilizing the habitat are not disturbed during development activities, in keeping with the *Migratory Birds Convention Act, 1994* and the ESA. For this location and habitat type, breeding activity typically occurs between April 10th and August 5th (ECCC, 2016) inclusive. Thus vegetation removal may occur between August 6th and April 9th of the following year. Vegetation removal that occurs during the active nesting season should be preceded by a nest survey to ensure that the demolition does not disturb active nests or SAR (Barn Swallow).
  8. Restoration/enhancement plans should be prepared for all buffer areas. These areas should be composed of a variety of native trees and shrubs and should be overseeded with an appropriate native seed mix. The Restoration Plan will be advanced at the Site Plan stage and is subject to approval by LSRCA.
  9. Landscape Plans should be prepared for the proposed SWM pond and should be composed of native, non-invasive species only as per Appendix H (Minimum Planting Requirements) within LSRCA's Technical Guidelines for Stormwater

- Management Submissions (2016). The Landscape Plan will be advanced at the Site Plan stage and is subject to approval by LSRCA;
10. If SAR individuals are identified during on-site work, all works should cease to allow the SAR to move out of the work area (if applicable) and a qualified consultant and/or Ministry of Environment Conservation and Parks (now responsible for implementing Ontario's *ESA*) should be contacted for guidance.
  11. Future buyers should be made aware of responsible stewardship practices acceptable when living adjacent to natural features.
  12. The identified natural heritage features and associated buffer areas should be zoned as Environmental Protection according to the Town and should be put into public ownership.

### **8.1 Non-detected Species of Concern**

It should be noted that the absence of a protected species within and adjacent to the property does not indicate that they will never occur within the area. Given the dynamic character of the natural environment, there is a constant variation in habitat use. Care should be taken in the interpretation of presence of species of concern listed under the *ESA*. Changes to policy, or the natural environment, could result in shifts, removal, or addition of new areas to the list of areas protected as SAR habitat. This report is intended as a point in time assessment of the potential to impact SAR; not to provide long term 'clearance' for protected species. While there is no expectation that the assessment should change significantly, it is the responsibility of the proponent to ensure that they are not in contravention of the *ESA* at the time that site works are undertaken. A review of the assessment provided in this report by a qualified person should be sufficient to provide appropriate advice at the time of the onset of future site works.

## **9.0 POLICY AND REGULATION CONFORMITY**

### **9.1 Provincial Policy Statement**

The proposed development results in no negative direct or indirect impact to significant natural heritage features or functions (*i.e.*, wetlands, woodlands, valleylands, ANSIs, wildlife habitat functions) (Policies 2.1.4, 2.1.5, 2.1.6, & 2.1.8), including potential animal movement corridors/habitat linkages (Policy 2.1.2) and can be achieved with no impact to confirmed habitat of END and THR species - **Conforms**.

### **9.2 Ontario's *Endangered Species Act, 2007***

The proposed development can be constructed with no contraventions to the *ESA* as it relates to individuals or habitat of END or THR species of Ontario, provided that the mitigation outlined herein is implemented. - **Conforms**.

### **9.3 County of Simcoe**

The proposed development aligns with the designated land use of the Official Plan. The development will not impact adjacent natural heritage features, provided that the mitigation measures described herein are implemented. - **Conforms**

### **9.4 Town of Innisfil**

The proposed development aligns with the designated land use of the Official Plan. The development will not impact adjacent natural heritage features, provided that the mitigation measures described herein are implemented. - **Conforms**

### **9.5 Lake Simcoe Region Conservation Authority**

The development is proposed within lands subject to Ontario Regulation 179/06, Development, Interference with Wetlands and Alterations to Shorelines and Watercourses. A permit under O. Reg 179/08 will be required prior to initiation development.

### **9.6 Lake Simcoe Protection Plan, 2009**

The development is proposed within the Lake Simcoe Watershed and Settlement of Gilford and is subject policies 6.32-DP to 6.35-DP of the Lake Simcoe Protection Plan (2009). The proposed development will remove the agricultural land use and thus phosphorus loading associated with this land use. The development has been designed to maintain existing hydrologic function of the property and habitat function of the natural lands, thus protecting downstream aquatic habitat. Therefore the proposal is in keeping with the Settlement Area policies of the Lake Simcoe Protection Plan. - **Conforms**

## **10.0 CONCLUSION**

Our investigation concluded that the development will have no negative impacts on natural heritage features or functions within or beyond the development footprint if the appropriate mitigation measures are followed. The proposed use appears consistent with the residential use of adjacent lands. The existing natural heritage features and functions, wildlife habitat, and vegetation communities in the area will remain unaffected post development.

The proposed development is consistent with the PPS in that it does not affect the habitat of any known SAR; and does not impact upon designated provincially significant wetland, ANSIs, valley land or significant wildlife habitat, fish habitat, or significant environmentally sensitive areas.

Based on the results of this EIS, the proposed development does conform with the Natural Heritage policies of the Town and County as the study has demonstrated that no negative impact will occur to the identified natural heritage features, provided that the recommended mitigation measures are implemented.

## 11.0 REFERENCES

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## **APPENDICES**

- Appendix A: Municipal Planning Schedules**
  - Appendix B: LSRCA Information**
  - Appendix C: MNRF Information**
  - Appendix D: Woodland Area Calculation**
  - Appendix E: Ontario Breeding Bird Atlas Data**
  - Appendix F: LSRCA Background Fisheries Information**
  - Appendix G: Proposed Development Concept and Floodplain Modification**
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**APPENDIX A**

**Municipal Planning Schedules**

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**APPENDIX B**

**LSRCA Information**

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**APPENDIX C**

**MNRF Information**

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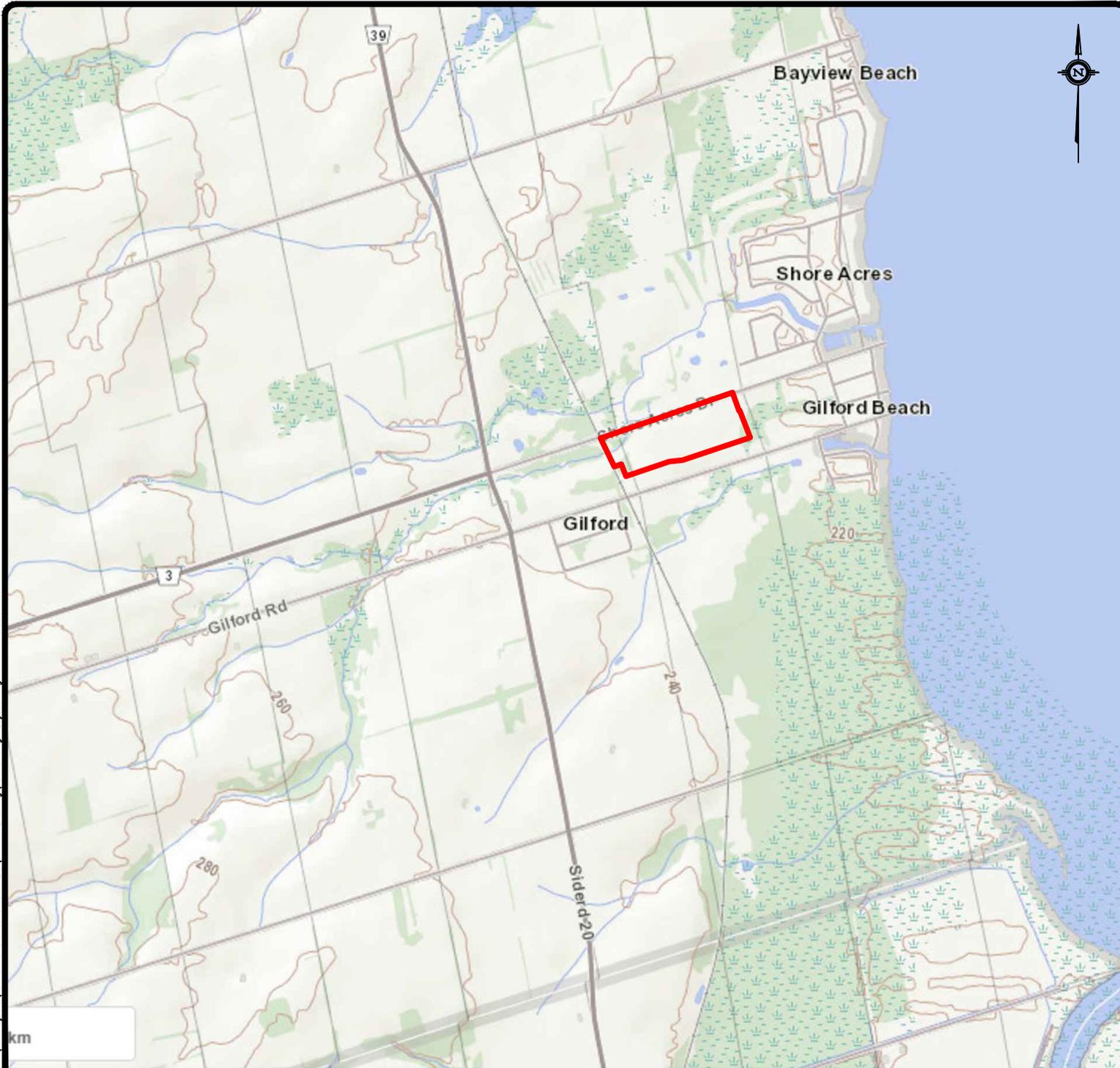
**APPENDIX D**

**Woodland Area Calculation**

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**LEGEND:**

 *Approx. Property Boundary*



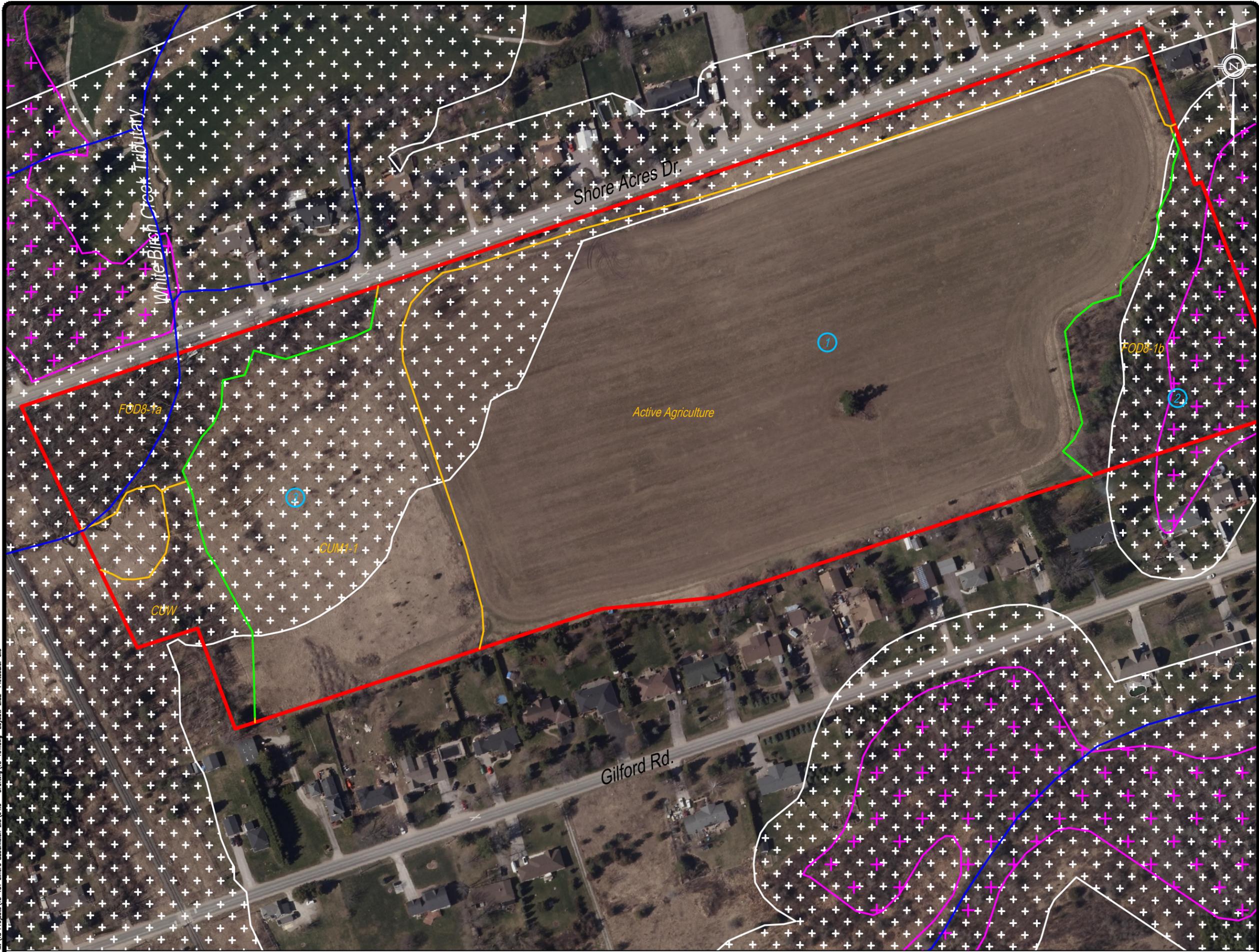
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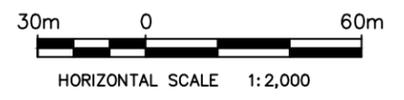
Study Area Location

Shore Acres Drive,  
Gilford, ON

DATE ISSUED: August 2019	Figure No.  1
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PROJECT NO.: 13-151	
REFERENCE: MNR	



- LEGEND:**
- Approx. Property Boundary
  - Watercourse
  - LSRCA Staked Woodland (2018)
  - + Regulated Area (LSRCA) (white)
  - + Wetland
  - 1 Bird Point Count Station
  - Vegetation Communities
  - CUM1-1 Old Field Cultural Meadow
  - COW Cultural Woodland
  - FOD8-1 Fresh-Moist Poplar Deciduous Forest Type



Environmental Features

Shore Acres Drive,  
Gilford, ON

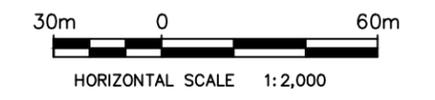
DATE ISSUED:	August 2019	Figure No. <b>2</b>
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PROJECT NO.:	13-151	
REFERENCE:	Simcoe County Maps	

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- LEGEND:**
- Approx. Property Boundary
  - Watercourse
  - - - 30m Watercourse Buffer
  - LSRCA Staked Woodland (2018)
  - - - 10m Woodland Buffer
  - ▧ Proposed Cut Area
  - ▧ Proposed Fill Area
  - Proposed Post Development Floodline\*
  - Floodline Existing Regional

\*As provided by A.M. Candaras Associates Inc.



Environmental Constraints and Proposed Development

Shore Acres Drive,  
Gilford, ON

DATE ISSUED:	August 2019	Figure No. <b>3</b>
CREATED BY:	JLM	
PROJECT NO.:	13-151	
REFERENCE:	Simcoe County Maps	

Printed by: MCCARTNEY on September 13, 2019 at 9:59am  
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**Table 1. Significant Wildlife Habitat Criteria Schedule for Ecoregion 6E, Gilford Subdivison**

**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 (eg. 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>	No evidence of retention of spring freshet within cropped area. No suitable habitat present.
<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 (eg. 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>	No suitable habitat present.

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> <u>Information Sources</u> <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>	No suitable habitat present.
<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	<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).	<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> <u>Information Sources:</u> <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>	No suitable habitat present. Habitat components are present, but individual components do not meet size criteria.

Wildlife Habitat	Wildlife Species	Candidate SHW		Confirmed SWH	Assessment
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	
<b>Bat Hibernacula</b>  <b>Rationale:</b> Bat hibernacula are rare habitats in all Ontario landscapes.	Big Brown Bat Tri-coloured Bat	Bat Hibernacula may be found in these ecosites: CCR1 CCR2 CCA1 CCA2 (Note: buildings are not considered to be SWH)	<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> <u>Information Sources</u> <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 (eg. 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>	No suitable habitat present.
<b>Bat Maternity Colonies</b>  <b>Rationale:</b> Known locations of forested bat maternity colonies are extremely rare in all Ontario landscapes.	Big Brown Bat Silver-haired Bat	Maternity colonies considered SWH are found in forested Ecosites.  All ELC Ecosites in ELC Community Series: FOD FOM SWD SWM	<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> <u>Information Sources</u> <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>	<b>Potential habitat present within deciduous forest and cultural woodland communities.</b>
<b>Turtle Wintering Areas</b>  <b>Rationale:</b> Generally sites are the only known sites in the area. Sites with the highest number of individuals are most significant.	Midland Painted Turtle  <b>Special Concern:</b> Northern Map Turtle Snapping Turtle	Snapping and Midland Painted Turtles; ELC Community Classes; SW, MA, OA and SA, ELC Community Series; FEO and BOO  Northern Map Turtle; Open Water areas such as deeper rivers or streams and lakes with current can also be used as over-wintering habitat.	<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> <u>Information Sources</u> <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> <li>Field Naturalist clubs</li> <li>Natural Heritage Information Center (NHIC)</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> <li>SWHMIST Index #28 provides development effects and mitigation measures for turtle wintering habitat.</li> </ul>	No suitable habitat present.

Wildlife Habitat	Wildlife Species	Candidate SHW		Confirmed SWH	Assessment
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	
<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><u>Information Sources</u></p> <ul style="list-style-type: none"> <li>In spring, local residents or landowners may have observed the emergence of snakes on their property (eg. 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><u>Note:</u> If there are Special Concern Species present, then site is SWH</li> <li><u>Note:</u> Sites for hibernation possess specific habitat parameters (e.g. temperature, humidity, etc.) and consequently are used annually, often by many of the same individuals of a local population (i.e. strong hibernation site fidelity). Other critical life processes (e.g. mating) often take place in close proximity to hibernacula. The feature in which the hibernacula is located plus a 30 m radius area is the SWH.</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>No suitable habitat present. No rock foundations or burrows, wetland habitat or broken fissured rock were noted within the property limits.</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 are declining in Ontario.</p>	<p>Cliff Swallow Northern Rough-winged Swallow (this species is not colonial but can be found in Cliff Swallow colonies)</p>	<p>Eroding banks, sandy hills, borrow pits, steep slopes, and sand piles. Cliff faces, bridge abutments, silos, barns.</p> <p>Habitat found in the following ecosites: CUM1 CUT1 CUS1 BLO1 BLS1 BLT1 CLO1 CLS1 CLT1</p>	<ul style="list-style-type: none"> <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, soil or aggregate stockpiles.</li> <li>Does not include a licensed/permitted Mineral Aggregate Operation.</li> </ul> <p><u>Information Sources</u></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> <li>Field Naturalist Clubs.</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>No suitable habitat present.</p>

Wildlife Habitat	Wildlife Species	Candidate SHW		Confirmed SWH	Assessment
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	
<p><b>Colonially -Nesting Bird Breeding Habitat (Tree/Shrubs)</b></p> <p><b>Rationale:</b> Large colonies are important to local bird population, typically sites are only known colony in area and are used annually.</p>	<p>Great Blue Heron Black-crowned Night-Heron Great Egret Green Heron</p>	<p>SWM2 SWM3 SWM5 SWM6 SWD1 SWD2 SWD3 SWD4 SWD5 SWD6 SWD7 FET1</p>	<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> <p><u>Information Sources</u></p> <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>	<p>Studies confirming:</p> <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>	<p>No suitable habitat present.</p>
<p><b>Colonially -Nesting Bird Breeding Habitat (Ground)</b></p> <p><b>Rationale:</b> Colonies are important to local bird population, typically sites are only known colony in area and are used annually.</p>	<p>Herring Gull Great Black-backed Gull Little Gull Ring-billed Gull Common Tern Caspian Tern Brewer's Blackbird</p>	<p>Any rocky island or peninsula (natural or artificial) within a lake or large river (two-lined on a 1:50,000 NTS map).</p> <p>Close proximity to watercourses in open fields or pastures with scattered trees or shrubs (Brewer's Blackbird)</p> <p>MAM1 – 6; MAS1 – 3; CUM CUT CUS</p>	<ul style="list-style-type: none"> <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> <p><u>Information Sources</u></p> <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>	<p>Studies confirming:</p> <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>	<p>No suitable habitat present.</p>

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>No suitable habitat present., subject property not within 5km of Lake Ontario shoreline.</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; 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>No suitable habitat present., subject property not within 5km of Lake Ontario shoreline.</p>

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>	<p><b>Stratum I and Stratum II lands have been mapped within the Settlement of Gilford, associated with the Holland Marsh ANSI and PSW. The property could be considered a "Stratum II" yard due to the presence of agricultural lands and a riparian corridor.</b></p>
<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 woodlands to reduce or avoid the impacts of winter conditions.</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 feeding are not significant.</li> </ul> <p><u>Information Sources</u></p> <ul style="list-style-type: none"> <li>MNRF District Offices</li> <li>LIO/NRVIS</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 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>	<p>No suitable habitat present., forested communities within the subject property are not of sufficient size.</p>

**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: 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>	No suitable habitat present.
<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: 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>	No suitable habitat present.
<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> 1) <i>Carex crawei</i> 2) <i>Panicum philadelphicum</i> 3) <i>Eleocharis compressa</i> 4) <i>Scutellaria parvula</i> 5) <i>Trichostema brachiatum</i></p> <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>	No suitable habitat present.

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>	No suitable habitat present.
<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>	No suitable habitat present.
<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>	No suitable habitat present.
<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>	No suitable habitat present.

**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>	<p>American Black Duck Northern Pintail Northern Shoveler Gadwall Blue-winged Teal Green-winged Teal Wood Duck Hooded Merganser Mallard</p>	<p>All upland habitats located adjacent to these wetland ELC Ecosites are Candidate SWH: MAS1 MAS2 MAS3 SAS1 SAM1 SAF1 MAM1 MAM2 MAM3 MAM4 MAM5 MAM6 SWT1 SWT2 SWD1 SWD2 SWD3 SWD4 <b>Note: includes adjacency to Provincially Significant Wetlands</b></p>	<p>A waterfowl nesting area extends 120 m from a wetland (&gt; 0.5 ha) or a wetland (&gt;0.5ha) and any small wetlands (0.5ha) within 120m or a cluster of 3 or more small (&lt;0.5 ha) wetlands within 120 m of each individual wetland where waterfowl nesting is known to occur.</p> <ul style="list-style-type: none"> <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>	<p>Studies confirmed:</p> <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>	<p>No suitable habitat present.</p>
<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>	<p>Osprey <b>Special Concern</b> Bald Eagle</p>	<p>ELC Forest Community Series: FOD, FOM, FOC, SWD, SWM and SWC directly adjacent to riparian areas – rivers, lakes, ponds and wetlands</p>	<p>Nests are associated with lakes, ponds, rivers or wetlands along forested shorelines, islands, or on structures over water.</p> <ul style="list-style-type: none"> <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 the 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> <li>Reports and other information available from</li> </ul>	<p>Studies confirm the use of these nests by:</p> <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: Guidelines for Wind Power Projects”.</li> </ul>	<p>No suitable habitat present.</p>

Wildlife Habitat	Wildlife Species	Candidate SHW		Confirmed SWH	Assessment
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	
			<p>Conservation Authorities.</p> <ul style="list-style-type: none"> <li>Field Naturalists clubs</li> </ul>	<ul style="list-style-type: none"> <li>SWHMiST Index #26 provides development effects and mitigation measures.</li> </ul>	
<p><b>Woodland Raptor Nesting Habitat</b></p> <p><b>Rationale:</b> Nests sites for these species are rarely identified; these area sensitive habitats and are often used annually by these species.</p>	<p>Northern Goshawk Cooper's Hawk Sharp-shinned Hawk Red-shouldered Hawk Barred Owl Broad-winged Hawk</p>	<p>May be found in all forested ELC Ecosites. May also be found in SWC, SWM, SWD and CUP3</p>	<p>All natural or conifer plantation woodland/forest stands &gt;30ha with &gt;10ha of interior habitat. Interior habitat determined with a 200m buffer</p> <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> <p><u>Information Sources</u></p> <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>	<p>Studies confirm:</p> <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>	<p>No suitable habitat present.</p>
<p><b>Turtle Nesting Areas</b></p> <p><b>Rationale:</b> These habitats are rare and when identified will often be the only breeding site for local populations of turtles.</p>	<p>Midland Painted Turtle</p> <p><u>Special Concern Species</u> Northern Map Turtle Snapping Turtle</p>	<p>Exposed mineral soil (sand or gravel) areas adjacent (&lt;100m) or within the following ELC Ecosites: MAS1 MAS2 MAS3 SAS1 SAM1 SAF1 BOO1 FEO1</p>	<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> <p><u>Information Sources</u></p> <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> <li>Field Naturalist clubs</li> </ul>	<p>Studies confirm:</p> <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>	<p>No suitable habitat present.</p>

Wildlife Habitat	Wildlife Species	Candidate SHW		Confirmed SWH	Assessment
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	
<b>Seeps and Springs</b>  <u>Rationale:</u> Seeps/Springs are typical of headwater areas and are often at the source of coldwater streams.	Wild Turkey Ruffed Grouse Spruce Grouse White-tailed Deer Salamander spp.	Seeps/Springs are areas where ground water comes to the surface. Often they are found within headwater areas within forested habitats. Any forested Ecosite within the headwater areas of a stream could have seeps/springs.	Any forested area (with <25% meadow/field/pasture) within the headwaters of a stream or river system. <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 a ELC forest ecosite or an ecoelement within ecosite containing the seeps/springs is the SWH. The protection of the recharge area considering the slope, vegetation, height of trees and groundwater condition need to be considered in delineation the habitat.</li> <li>SWHMiST Index #30 provides development effects and mitigation measures.</li> </ul>	No suitable habitat present.
<b>Amphibian Breeding Habitat (Woodland).</b>  <u>Rationale:</u> These habitats are extremely important to amphibian biodiversity within a landscape and often represent the only breeding habitat for local amphibian populations.	Eastern Newt Blue-spotted Salamander Spotted Salamander Gray Treefrog Spring Peeper Western Chorus Frog Wood Frog	All Ecosites associated with these ELC Community Series; FOC FOM FOD SWC SWM SWD  Breeding pools within the woodland or the shortest distance from forest habitat are more significant because they are more likely to be used due to reduced risk to migrating amphibians.	<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> <li>Ontario Vernal Pool Association:  <a href="http://www.ontariovernalpools.org">http://www.ontariovernalpools.org</a></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 a 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>	No suitable habitat present. No evidence of large vernal pools were observed within the woodlots. Species specific surveys have not been completed on this property.

Wildlife Habitat	Wildlife Species	Candidate SHW		Confirmed SWH	Assessment
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	
<p><b>Amphibian Breeding Habitat (Wetlands)</b></p> <p><b>Rationale:</b> Wetlands supporting breeding for these amphibian species are extremely important and fairly rare within Central Ontario landscapes.</p>	<p>Eastern Newt American Toad Spotted Salamander Four-toed Salamander Blue-spotted Salamander Gray Treefrog Western Chorus Frog Northern Leopard Frog Pickerel Frog Green Frog Mink Frog Bullfrog</p>	<p>ELC Community Classes SW, MA, FE, BO, OA and SA.</p> <p>Typically these wetland ecosites will be isolated (&gt;120m) from woodland ecosites, however larger wetlands containing predominantly aquatic species (e.g. Bull Frog) may be adjacent to woodlands.</p>	<ul style="list-style-type: none"> <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> <p><u>Information Sources</u></p> <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>	<p>Studies confirm:</p> <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. <b>or;</b> 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>	<p>No suitable habitat present.</p>
<p><b>Woodland Area-Sensitive Bird Breeding Habitat</b></p> <p><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.</p>	<p>Yellow-bellied Sapsucker Red-breasted Nuthatch Veery Blue-headed Vireo Northern Parula Black-throated Green Warbler Blackburnian Warbler Black-throated Blue Warbler Ovenbird Scarlet Tanager Winter Wren</p> <p><b>Special Concern:</b> Cerulean Warbler Canada Warbler</p>	<p>All Ecosites associated with these ELC Community Series; FOC FOM FOD SWC SWM SWD</p>	<p>Habitats where interior forest breeding birds are breeding, typically large mature (&gt;60 yrs old) forest stands or woodlots &gt;30 ha.</p> <ul style="list-style-type: none"> <li>Interior forest habitat is at least 200 m from forest edge habitat.</li> </ul> <p><u>Information Sources</u></p> <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>	<p>Studies confirm:</p> <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>	<p>No suitable habitat present. Woodlands do not meet size criteria for significance.</p>

**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 <b>or</b> 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>No suitable habitat present.</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>No suitable habitat present. Cultural meadow community on site does not meet size criteria.</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)</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</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;10ha 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</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</li> </ul>	<p>No suitable habitat present.</p>

Wildlife Habitat	Wildlife Species	Candidate SHW		Confirmed SWH	Assessment
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	
trend records.	Golden-winged Warbler		Authorities.	mitigation measures.	
<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>	No burrows observed during the course of the field investigations.
<b>Special Concern and Rare Wildlife Species</b> <b>Rationale:</b> These species are quite rare or have experienced significant population declines in Ontario.	<b>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.</b>	<b>All plant and animal element occurrences (EO) within a 1 or 10km grid.</b>  <b>Older element occurrences were recorded prior to GPS being available, therefore location information may lack accuracy.</b>	<b>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> <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>	<b>Studies Confirm:</b> <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>	<b>One species of special concern has been observed on site: Eastern Wood-pewee.</b>

**Animal Movement Corridors**

Wildlife Habitat	Wildlife Species	Candidate SHW		Confirmed SWH	Assessment
		ELC Ecosite	Habitat Criteria and Information Sources	Defining Criteria	
<p><b>Amphibian Movement Corridors</b></p> <p><b>Rationale:</b> Movement corridors for amphibians moving from their terrestrial habitat to breeding habitat can be extremely important for local populations.</p>	<p>Eastern Newt American Toad Spotted Salamander Four-toed Salamander Blue-spotted Salamander Gray Treefrog Western Chorus Frog Northern Leopard Frog Pickerel Frog Green Frog Mink Frog Bullfrog</p>	<p>Corridors may be found in all ecosites associated with water.</p> <ul style="list-style-type: none"> <li>Corridors will be determined based on identifying the significant breeding habitat for these species in Table 1.1</li> </ul>	<p>Movement corridors between breeding habitat and summer habitat.</p> <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> <p><u>Information Sources</u></p> <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>	<p>No suitable habitat present.</p>
<p><b>Deer Movement Corridors</b></p> <p><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.</p>	<p>White-tailed Deer</p>	<p>Corridors may be found in all forested ecosites.</p> <p>A Project Proposal in Stratum II Deer Wintering Area has potential to contain corridors.</p>	<p>Movement corridor must be determined when <b>Deer Wintering Habitat</b> is confirmed as SWH from Table 1.1 of this schedule.</p> <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> <p><u>Information Sources</u></p> <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>	<p>No suitable habitat present. Potential habitat onsite is fragmented by residential development and roads.</p>

**Table 2 - Vascular Plants List, Gilford Subdivision**

FAMILY	SCIENTIFIC NAME	COMMON NAME	Vegetation Community <sup>1</sup>			Conservation Rank <sup>2</sup>			LSRCA Status <sup>3</sup>
			FOD8-1	CUW	CUM	S RANK	G RANK	SARO STATUS	
Aceraceae	<i>Acer negundo</i>	Manitoba Maple	X		X	S5	G5		
Anacardiaceae	<i>Rhus typhina</i>	Staghorn Sumac	X		X	S5	G5		
Anacardiaceae	<i>Toxicodendron radicans</i>	Climbing Poison Ivy	X			S5	G5		
Apiaceae	<i>Daucus carota</i>	Wild Carrot		X	X	SNA	GNR		
Apocynaceae	<i>Vinca minor</i>	Periwinkle		X		SNA	GNR		
Asclepiadaceae	<i>Asclepias syriaca</i>	Common Milkweed			X	S5	G5		
Asteraceae	<i>Arctium minus</i>	Common Burdock		X	X	SNA	GNR		
Asteraceae	<i>Echinacea sp.</i>	Coneflower			X				
Asteraceae	<i>Euthamia graminifolia</i>	Grass-leaved Goldenrod			X	S5	G5		
Asteraceae	<i>Eutrochium maculatum var. maculatum</i>	Spotted Joe Pye Weed			X	S5	G5T5		
Asteraceae	<i>Onopordum acanthium</i>	Scotch Cotton-thistle			X	SNA	GNR		
Asteraceae	<i>Tussilago farfara</i>	Colt's-foot		X		SNA	GNR		
Asteraceae	<i>Solidago canadensis var. canadensis</i>	Canada Goldenrod		X	X	S5	G5T5		
Asteraceae	<i>Sonchus arvensis ssp. arvensis</i>	Field Sow-thistle			X	SNA	GNRTNR		
Asteraceae	<i>Symphotrichum novae-angliae</i>	New England Aster		X	X	S5	G5		
Asteraceae	<i>Taraxacum officinale</i>	Common Dandelion			X	SNA	G5		
Balsaminaceae	<i>Impatiens capensis</i>	Spotted Jewelweed		X		S5	G5		
Caprifoliaceae	<i>Viburnum acerifolium</i>	Maple-leaf Viburnum		X		S5	G5		
Caprifoliaceae	<i>Viburnum opulus ssp. trilobum</i>	Highbush Cranberry	X	X		S5	GNR		
Caryophyllaceae	<i>Saponaria officinalis</i>	Bouncing-bet			X	SNA	GNR		
Cornaceae	<i>Cornus alternifolia</i>	Alternate-leaved Dogwood	X	X		S5	G5		
Cornaceae	<i>Cornus rugosa</i>	Round-leaved Dogwood	X			S5	G5		
Cornaceae	<i>Cornus stolonifera</i>	Red-osier Dogwood		X	X	S5	G5		
Cucurbitaceae	<i>Echinocystis lobata</i>	Wild Mock-cucumber		X	X	S5	G5		
Cupressaceae	<i>Juniperus communis</i>	Ground Juniper	X	X		S5	G5		
Cupressaceae	<i>Juniperus virginiana</i>	Eastern Red Cedar			X	S5	G5		
Cupressaceae	<i>Thuja occidentalis</i>	Eastern White Cedar	X		X	S5	G5		
Dennstaedtiaceae	<i>Pteridium aquilinum</i>	Bracken Fern	X			S5	G5		
Dipsacaceae	<i>Dipsacus fullonum</i>	Fuller's Teasel			X	SNA	GNR		
Dryopteridaceae	<i>Dryopteris filix-mas</i>	Male Fern	X			S4	G5		
Fabaceae	<i>Lotus corniculatus</i>	Garden Bird's-foot Trefoil			X	SNA	GNR		
Fabaceae	<i>Medicago lupulina</i>	Black Medic			X	SNA	GNR		
Fabaceae	<i>Melilotus albus</i>	White Sweet-clover			X	SNA	G5		
Fabaceae	<i>Trifolium aureum</i>	Yellow Clover			X	SNA	GNR		
Fabaceae	<i>Trifolium pratense</i>	Red Clover			X	SNA	GNR		
Fabaceae	<i>Vicia cracca</i>	Tufted Vetch			X	SNA	GNR		
Geraniaceae	<i>Geranium robertianum</i>	Herb-Robert		X		S5	G5		
Grossulariaceae	<i>Ribes cynosbati</i>	Prickly Gooseberry		X		S5	G5		
Grossulariaceae	<i>Ribes hirtellum</i>	Smooth Gooseberry	X			S5	G5	W	
Juglandaceae	<i>Juglans nigra</i>	Black Walnut		X	X	S4	G5	W	
Lamiaceae	<i>Clinopodium vulgare</i>	Field Basil	X			S5	G5		
Lamiaceae	<i>Monarda fistulosa var. fistulosa</i>	Wild Bergamot			X	S5	G5T5?		
Lamiaceae	<i>Origanum vulgare</i>	Wild Marjoram			X	SNA	GNR		
Liliaceae	<i>Heemerocallis fulva</i>	Orange Daylily			X	SNA	GNA		

**Table 2 - Vascular Plants List, Gilford Subdivison**

FAMILY	SCIENTIFIC NAME	COMMON NAME	Vegetation Community <sup>1</sup>			Conservation Rank <sup>2</sup>			LSRCA Status <sup>3</sup>
			FOD8-1	CUW	CUM	S RANK	G RANK	SARO STATUS	
Liliaceae	<i>Lilium lancifolium</i>	Tiger Lily			X	SNA	GNR		
Lythraceae	<i>Lythrum salicaria</i>	Purple Loosestrife			X	SNA	G5		
Malvaceae	<i>Malva neglecta</i>	Dwarf Cheeseweed			X	SNA	GNR		
Oleaceae	<i>Fraxinus americana</i>	White Ash	X	X		S4	G5		
Oleaceae	<i>Fraxinus pennsylvanica</i>	Green Ash	X			S4	G5		
Oleaceae	<i>Syringa vulgaris</i>	Common Lilac			X	SNA	GNR		
Onagraceae	<i>Circaea alpina</i>	Small Enchanter's Nightshade	X	X		S5	G5		
Onagraceae	<i>Oenothera biennis</i>	Common Evening Primrose			X	S5	G5		
Pinaceae	<i>Pinus strobus</i>	Eastern White Pine	X		X	S5	G5		
Pinaceae	<i>Pinus sylvestris</i>	Scotch Pine			X	SNA	GNR		
Poaceae	<i>Bromus inermis</i>	Awnless Brome			X	SNA	G5TNR		
Poaceae	<i>Echinochloa crus-galli</i>	Large Barnyard Grass			X	SNA	GNR		
Poaceae	<i>Phalaris arundinacea</i>	Reed Canary Grass			X	S5	G5		
Poaceae	<i>Phleum pratense</i>	Common Timothy			X	SNA	GNR		
Poaceae	<i>Poa pratensis ssp. pratensis</i>	Kentucky Bluegrass			X	S5	G5T5		
Polygonaceae	<i>Fallopia japonica</i>	Japanese Knotweed			X	SNA	GNR		
Polygonaceae	<i>Persicaria hydropiper</i>	Marshpepper Smartweed			X	SNA	GNR		
Polygonaceae	<i>Rumex crispus</i>	Curly Dock			X	SNA	GNR		
Rosaceae	<i>Fragaria virginiana</i>	Wild Strawberry	X			S5	G5		
Rosaceae	<i>Prunus padus</i>	European Bird Cherry		X		SNA	GNR		
Rosaceae	<i>Prunus pensylvanica</i>	Pin Cherry	X			S5	G5		
Rosaceae	<i>Prunus serotina</i>	Wild Black Cherry		X		S5	G5		
Rosaceae	<i>Rubus idaeus ssp. idaeus</i>	Common Red Raspberry	X	X		SNA	G5T5		
Rosaceae	<i>Rubus occidentalis</i>	Black Raspberry		X		S5	G5		
Salicaceae	<i>Populus balsamifera</i>	Balsam Poplar			X	S5	G5		
Salicaceae	<i>Populus tremuloides</i>	Trembling Aspen	X	X	X	S5	G5		
Salicaceae	<i>Salix discolor</i>	Pussy Willow			X	S5	G5		
Salicaceae	<i>Salix nigra</i>	Black Willow		X		S4?	G5	W	
Salicaceae	<i>Salix sp.</i>	Unidentified Willow		X					
Scrophulariaceae	<i>Linaria vulgaris</i>	Butter-and-eggs		X		SNA	GNR		
Scrophulariaceae	<i>Verbascum thapsus</i>	Common Mullein			X	SNA	GNR		
Ulmaceae	<i>Ulmus americana</i>	American Elm	X		X	S5	G5?		
Vitaceae	<i>Parthenocissus quinquefolia</i>	Virginia Creeper	X	X	X	S4?	G5		
Vitaceae	<i>Vitis riparia</i>	Riverbank Grape		X	X	S5	G5		

<sup>1</sup>See Figure 1 for vegetation community location and report text for community descriptions

<sup>2</sup>Conservation Rank Information from Ministry of Natural Resources & Forestry, Natural Heritage Information Centre

<sup>3</sup> State of Lake Simcoe Watershed. 2003. Lake Simcoe Environmental Management Strategy

W - Rare in Lake Simcoe Watershed

Survey Dates & Observers: August 14, 2014 - M. Fuller; October 15, 2014 - M. Fuller

**Table 3 - Bird Species Observed, Gilford Subdivision**

FAMILY	SCIENTIFIC NAME	COMMON NAME	Point Count Station <sup>1</sup>			Incidental	Breeding Evidence <sup>2</sup>	Area-sensitive? <sup>4</sup>	Conservation Rank <sup>3</sup>			
			1	2	3				S RANK	G RANK	SARO STATUS	LSRCA Rank
Anatidae	<i>Anas platyrhynchos</i>	Mallard				FO <sup>5</sup>	Observed		S5	G5		
Anatidae	<i>Branta canadensis</i>	Canada Goose	FO			FO	Observed		S5	G5		
Bombycillidae	<i>Bombycilla cedrorum</i>	Cedar Waxwing			S		Possible		S5B	G5		
Cardinalidae	<i>Cardinalis cardinalis</i>	Northern Cardinal	S	S	S	S	Possible		S5	G5		
Cardinalidae	<i>Passerina cyanea</i>	Indigo Bunting	S				Possible		S4B	G5		
Cardinalidae	<i>Pheucticus ludovicianus</i>	Rose-breasted Grosbeak		S			Possible		S4B	G5		
Charadriidae	<i>Charadrius vociferus</i>	Killdeer	NE	S		S	Confirmed		S5B,S5N	G5		
Columbidae	<i>Zenaida macroura</i>	Mourning Dove	S	S		S	Possible		S5	G5		
Corvidae	<i>Corvus brachyrhynchos</i>	American Crow	S		FO,S		Possible		S5B	G5		
Corvidae	<i>Cyanocitta cristata</i>	Blue Jay	S				Possible		S5	G5		
Emberizidae	<i>Melospiza melodia</i>	Song Sparrow	S	T	T		Probable		S5B	G5		
Fringillidae	<i>Carduelis tristis</i>	American Goldfinch	S		T	S	Probable		S5B	G5		
Fringillidae	<i>Carpodacus mexicanus</i>	House Finch	S				Possible		SNA	G5		
Icteridae	<i>Quiscalus quiscula</i>	Common Grackle	CF	S			Confirmed		S5B	G5		
Laridae	<i>Larus delawarensis</i>	Ring-billed Gull				S	Possible		S5B,S4N	G5		
Mimidae	<i>Dumetella carolinensis</i>	Gray Catbird			S		Possible		S4B	G5		
Paridae	<i>Poecile atricapillus</i>	Black-capped Chickadee	S			S	Possible		S5	G5		
Parulidae	<i>Geothlypis trichas</i>	Common Yellowthroat			S		Possible		S5B	G5		
Parulidae	<i>Setophaga coronata</i>	Yellow-rumped Warbler			S		Possible		S5B	G5		
Parulidae	<i>Setophaga petechia</i>	Yellow Warbler			S		Possible		S5B	G5		
Parulidae	<i>Setophaga pinus</i>	Pine Warbler	S				Possible	Yes	S5B	G5		
Picidae	?	Unidentified Woodpecker		S			Possible					
Picidae	<i>Colaptes auratus</i>	Northern Flicker				S	Possible		S4B	G5		
Turdidae	<i>Turdus migratorius</i>	American Robin	S	T	S		Probable		S5B	G5		
Tyrannidae	<i>Contopus virens</i>	Eastern Wood-pewee				S	Possible		S4B	G5	SC	
Tyrannidae	<i>Empidonax alnorum</i>	Alder Flycatcher			S		Possible		S5B	G5		
Tyrannidae	<i>Empidonax minimus</i>	Least Flycatcher			S		Possible	Yes	S4B	G5		
Tyrannidae	<i>Sayornis phoebe</i>	Eastern Phoebe			S		Possible		S5B	G5		

<sup>1</sup>PC - Point Count Station(see Figure 2 for location), 5 Minute Duration

<sup>2</sup>Breeding Evidence - based on Ontario Breeding Bird Evidence Codes

<sup>3</sup>Conservation Rank - from OMNRF, NHIC & SARO List 2016

<sup>4</sup>Species listed as Area-sensitive in Appendix C of OMNR's Significant Wildlife Habitat Technical Guide, 2000

<sup>5</sup>Breeding Evidence Code (Based on OBBA): S - Singing Male, Vo - Vocal (Male territory/display call) , FO - Fly Over (no sign of use of habitat of property), For - Species observed foraging on property only, H - Species observed in suitable breeding habitat during breeding season, P - Pair, A - Agitated behaviour, CF - Adult carrying food for young, NE - Nest with Eggs, FY - Fledged Young, T- Permanent territory presumed through registration of territorial behaviour (song, etc) on at least two days, a week or more apart, at the same place

Observation Conditions - Point Count Sampling

Point Count - June 12, 2014; Start Time 0640hr End Time 0715hr; Temperature +18°C; Wind S 12km/h; Cloud Cover 100%; Precipitation Null; Humidity 90%; Observer - M. Fuller

Point Count - June 23, 2014; Start Time 0530hr End Time 0555hr; Temperature +18°C; Wind Null; Cloud Cover 0%; Precipitation Null; Observer - M. Fuller

**Table 4 - Species at Risk Habitat Assessment, Gilford Subdivision.**

Common Name	Species Name	ESA Listing	Key Habitats Used By Species <sup>1</sup>	Observed on Site (Y/N)	Initial Assessment
Bank Swallow	<i>Riparia riparia</i>	THR	Nests in burrows excavated in natural and human-made settings with vertical sand and silt faces. Colonies commonly found in sand or gravel pits, lakeshores, and along river banks  ESA Protection: Species and general habitat protection	N	Habitat within the subject property is not representative of key habitat. Species not expected to occur on the subject property.
Barn Swallow	<i>Hirundo rustica</i>	THR	<b>Ledges and walls of man-made structures such as buildings, barns, boathouses Cliffs or caves</b>  ESA Protection: <b>Species and general habitat protection</b>	N	<b>Habitat within the subject property may provide foraging habitat for the species. Species may nest on adjacent lands and forage over meadow habitat, though species was not observed during surveys.</b>
Bobolink	<i>Dolichonyx oryzivorus</i>	THR	Large, open expansive grasslands with dense ground cover; hayfields, meadows or fallow fields; marshes; requires tracts of grassland >4ha (MNR, 2000)  ESA Protection: Species and general habitat protection	N	Habitat within the subject property is not representative of key habitat. Species not expected to occur on the subject property.
Butternut	<i>Juglans cinerea</i>	END	Forests and hedgerows.  ESA Protection: Species and general habitat protection	N	No individuals observed during field investigations.
Chimney Swift	<i>Chaetura pelagica</i>	THR	Nests primarily in chimneys though some populations (i.e. in rural areas) may nest in cavity trees (Cadman 2007). Recent changes in chimney design and covering of openings to prevent wildlife access may be a significant factor in recent declines in numbers (Adams and Lindsey 2010).  ESA Protection: Species and general habitat protection	N	Habitat within the subject property is not representative of key habitat. Species not expected to occur on the subject property.
Common Nighthawk	<i>Chordeiles minor</i>	SC	Open habitats including sand dunes, beaches recently logged/burned over areas, forest clearings, short grass prairies, pastures, open forests, bogs, marshes, lakeshores, gravel roads, mine tailings, quarries, and other open relatively clear areas. (COSEWIC, 2007).  ESA Protection: N/A	N	Habitat within the subject property is not representative of key habitat. Species not expected to occur on the subject property.
Eastern Meadowlark	<i>Sturnella magna</i>	THR	Open, grassy meadows, farmland, pastures, hayfields or grasslands with elevated singing perches; cultivated land and weedy areas with trees. Old orchards with adjacent, open grassy areas >4 ha in size (MNR, 2000)  ESA Protection: Species and general habitat protection	N	Habitat within the subject property is not representative of key habitat. Species not expected to occur on the subject property.
Eastern Small-footed Bat	<i>Myotis Lleibii</i>	END	Generally occurs in mountainous or rocky regions where it has been noted to roost in large boulders and beneath slabs of rock and stones. Hibernation is typically confined to caves and abandoned mine adits. (Best and Jennings, 1997 and MNR, 2014)  ESA Protection: Species and general habitat protection	N	Habitat within the subject property is not representative of key habitat. Species not expected to occur on the subject property.

Table 4 - Species at Risk Habitat Assessment, Gilford Subdivision.

Common Name	Species Name	ESA Listing	Key Habitats Used By Species <sup>1</sup>	Observed on Site (Y/N)	Initial Assessment
Eastern Wood-pewee	<i>Contopus virens</i>	SC	Typically associated with deciduous and mixed forests with little understory vegetation; Often found in clearings or on edges of deciduous and mixed forests (MNRF, 2015).  ESA Protection: N/A	Y	Suitable habitat on and adjacent to the study area. Eastern Wood-pewee <u>has been identified</u> during Azimuth's field investigations.
Little Brown Bat	<i>Myotis lucifugus</i>	END	Forests and regularly aging human structures as maternity roost sites. Overwintering sites are characteristically mines or caves, but can often include buildings.  ESA Protection: Species and general habitat protection	N	Potentially suitable maternity roost habitat present within the subject property. Little Brown Bat has not been identified during Azimuth's field investigations.
Northern Long-eared Bat	<i>Myotis septentrionalis</i>	END	Maternity roost sites are generally located within deciduous and mixed forests and focused within leaf. Overwintering sites are characteristically mines or caves, but can include buildings.  ESA Protection: Species and general habitat protection	N	Potentially suitable maternity roost habitat present within the subject property. Northern Long-eared Bat has not been identified during Azimuth's field investigations.
Peregrine Falcon	<i>Falco peregrinus</i>	SC	Generally nest on tall, steep cliff ledges adjacent to large waterbodies; some birds adapt to urban environments and nest on ledges of tall buildings, even in densely populated downtown areas  ESA Protection: N/A	N	Habitat within the subject property is not representative of key habitat. Species not expected to occur on the subject property.
Red-Headed Woodpecker	<i>Melanerpes erythrocephalus</i>	SC	Oak and Beech Forests, graasslands, forest edges, orchards, pastures, riparian forests, roadsides, urban parks, golf courses, cemetaries, beaver ponds and burns (COSEWIC, 2007#).  ESA Protection: N/A	N	Potentially suitable habitat present within the subject property. Red-headed Woodpecker has not been identified during Azimuth's field investigations.
Snapping Turtle	<i>Chelydra serpentina</i>	SC	Marsh, swamp, fen (poor fens) Shallow waters in lakes or along streams Open areas of sand or gravel  ESA Protection: N/A	N	Potentially suitable habitat present within the subject property. Snapping Turtle has not been identified during Azimuth's field investigations.
Tri-coloured Bat	<i>Perimyotis subflavus</i>	END	Maternity roosts for the Tri-colored Bat in natural landscapes can be found in dead clusters of leaves on trees. In more modified landscapes, many maternity colonies are located in barns or similar human-made structures (COSEWIC 2013a).  ESA Protection: Species and general habitat protection	N	Potentially suitable maternity roost habitat present within the subject property. Tri-colored Bat has not been identified during Azimuth's field investigations.
Whip-poor-will	<i>Caprimulgus vociferus</i>	THR	Whip-poor-will prefer areas with a mix of open and forested habitat, open woodlands, or openings in mature forests (MNRF, 2015).  ESA Protection: Species and general habitat protection	N	Habitat within the subject property is not representative of key habitat. Species not expected to occur on the subject property.
Wood Thrush	<i>Hylocichla mustelina</i>	SC	Typically associated with moist mature deciduous and mixed forests with a well developed understory.  ESA Protection: N/A	N	Habitat within the subject property is not representative of key habitat. Species not expected to occur on the subject property.

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

1. Habitat as outlined within MNRF's Species at Risk Website (<https://www.ontario.ca/environment-and-energy/species-risk-ontario-list>) or Species Specific COSEWIC Reports referenced in this document.

**Table 5. Significant Woodland Assessment (PPS), Gilford Subdivison**

CRITERIA	STANDARDS	ASSESSMENT
<b>Woodland Size Criteria</b>		
<ul style="list-style-type: none"> <li>Size refers to the aerial (spatial) extent of the woodland (irrespective of ownership)</li> <li>Woodland areas are considered to be generally continuous even if intersected by narrow gaps 20m or less in width between crown edges.</li> <li>Size value is related to the scarcity of woodland in the landscape derived on a municipal basis with consideration of the differences in woodland coverage among physical sub-units (e.g., watersheds, biophysical regions).</li> <li>Size criteria should also account for differences in landscape-level physiography (e.g., moraines, clay planes) and community vegetation types.</li> </ul>	<p>Where woodlands cover:</p> <ul style="list-style-type: none"> <li>Is less than about 5% of land cover, woodlands 2ha in size or larger should be considered significant</li> <li>Is about 5-15% of land cover, woodlands 4ha in size or larger should be considered significant</li> <li>Is about 15-30% of land cover, woodlands 20ha in size or larger should be considered significant</li> <li>Is about 30-60% of land cover, woodlands 50ha in size or larger should be considered significant</li> <li>Occupies more than 60% of the land, a minimum size is not suggested, and other factors should be considered</li> </ul>	<ul style="list-style-type: none"> <li>As per the North-South Environmental Official Plan Review (2006) the Town of Innisfil contains 23% forest cover. Thus, continuous patches of woodland cover in Innisfil larger than 20ha should be considered as significant.</li> <li>The forest cover of the property would NOT be considered significant woodland in the context of the PPS. Total forest cover of the northwest woodlot is approximately 12ha and 4ha for the southeast woodlot.</li> </ul>
<b>Ecological Function Criteria</b>		
<p><b>Woodland Interior</b></p> <ul style="list-style-type: none"> <li>Interior Habitat more than 100m from the edge (as measured from the limits of a continuous woodland as defined above) is important for some species.</li> <li>For purposes of this criterion, a maintained public road would create an edge even if the opening was not wider than 20m and did not create a separate woodland.</li> <li></li> </ul>	<p>Woodlands should be considered significant if they have:</p> <ul style="list-style-type: none"> <li>Any interior habitat where woodlands cover less than about 15% of the land cover</li> <li>2 ha or more of interior habitat where woodlands cover about 15-30% of the land cover</li> <li>8 ha or more of interior habitat where woodlands cover about 30-60% of the land cover</li> <li>20 ha or more of interior habitat where woodlands cover about 60% of the land cover</li> </ul>	<ul style="list-style-type: none"> <li>Property does not contain interior habitat. Therefore, since landscape contains between 15 and 30% woodland cover, woodland interior criteria does not satisfy the requirements for significance.</li> </ul>
<p><b>Proximity to Other Woodlands or Other Habitats</b></p> <ul style="list-style-type: none"> <li>Woodlands that overlap, abut or are close to other significant natural heritage features or areas could be considered more valuable or significant than those that are not.</li> <li>Patches close to each other are of greater mutual benefit and value to wildlife.</li> </ul>	<p>Woodlands should be considered significant if:</p> <ul style="list-style-type: none"> <li>A portion of the woodland is located within a specific distance (e.g., 30m) of a significant natural feature or fish habitat likely receiving ecological benefit from the woodland and the entire woodland meets the minimum area threshold (e.g., 0.5-20ha, depending on circumstance)</li> </ul>	<ul style="list-style-type: none"> <li>Woodland in the northwest corner of the subject property is located adjacent to a feature providing direct fish habitat.</li> </ul>
<p><b>Linkages</b></p> <ul style="list-style-type: none"> <li>Linkages are important connections providing for movement</li> </ul>	<p>Woodlands should be considered significant if they:</p>	<ul style="list-style-type: none"> <li>Woodland within the riparian zone has been identified as "Natural Environment Area"</li> </ul>

**Table 5. Significant Woodland Assessment (PPS), Gilford Subdivison**

CRITERIA	STANDARDS	ASSESSMENT
<p>between habitats.</p> <ul style="list-style-type: none"> <li>Woodlands that are located between other significant features or areas can be considered to perform an important linkage function as “stepping stones” for movement between habitats.</li> </ul>	<ul style="list-style-type: none"> <li>Are located within a defined natural heritage system or provide a connecting link between two other significant features, each of which is within a specified distance (e.g., 120m) and meets minimum area thresholds (e.g., 1-20ha, depending on circumstance)</li> </ul>	<p>within the Town of Innisfil. .</p> <ul style="list-style-type: none"> <li>No other possible linkages exist as the subject property is bound by residential development on all sides</li> <li>Woodland is not considered to be significant in terms of linkage function.</li> </ul>
<b>Water Protection</b>		
<ul style="list-style-type: none"> <li>Source water protection is important.</li> <li>Natural hydrological processes should be maintained.</li> </ul>	<p>Woodlands should be considered significant if they:</p> <ul style="list-style-type: none"> <li>Are located within a sensitive or threatened watershed or a specific distance (e.g., 50m or top of valley bank if greater) or a sensitive groundwater discharge, sensitive recharge, sensitive headwater area, watercourse or fish habitat and meet minimum area thresholds (e.g., 0.5-10ha, depending on circumstance)</li> </ul>	<ul style="list-style-type: none"> <li>Property does not contain ground water discharge features (i.e., seeps and springs) and is not identified as within a sensitive recharge area</li> <li>Woodland is not considered to be significant in terms of water protection.</li> </ul>
<b>Woodland Diversity</b>		
<ul style="list-style-type: none"> <li>Certain woodland species have had major reductions in representation on the landscape and may need special consideration.</li> <li>More native diversity is more valuable than less diversity.</li> </ul>	<p>Woodlands should be considered significant if they have:</p> <ul style="list-style-type: none"> <li>A naturally occurring composition of native forest species that have declined significantly south and east of the Canadian Shield and meet minimum area thresholds (e.g., 1-20ha, depending on circumstance)</li> <li>A high native diversity through a combination of composition and terrain (e.g., a woodland extending from a hilltop to a valley bottom or to opposite slopes) and meet minimum area thresholds (e.g., 2-20ha, depending on circumstance)</li> </ul>	<ul style="list-style-type: none"> <li>Forest communities of property and adjacent lands do not have compositions of native forest tree species that have declined significantly.</li> <li>No terrain features such as hilltops or valley slopes.</li> <li>Woodland is not considered to be significant in terms of woodland diversity.</li> </ul>
<b>Uncommon Characteristics Criteria</b>		
<ul style="list-style-type: none"> <li>Woodlands that are uncommon in terms of species composition, cover type, age or structure should be protected.</li> <li>Older woodlands (i.e., woodlands greater than 100 years old) are particularly valuable for several reasons, including their contributions to genetic, species and ecosystem diversity.</li> </ul>	<p>Woodlands should be considered significant if they have:</p> <ul style="list-style-type: none"> <li>A unique species composition or the site is represented by less than 5% overall in woodland area and meets minimum area thresholds (e.g., 0.5ha, depending on circumstance)</li> <li>A vegetation community with a provincial ranking of S1, S2 or S3 (as ranked by the NHIC and meet minimum area thresholds (e.g., 0.5ha, depending on circumstance)</li> <li>Habitat (e.g., with 10 individual stems or 100m<sup>2</sup> of leaf coverage) of a rare, uncommon or restricted woodland plant species and meet minimum area thresholds (e.g., 0.5ha, depending on circumstance): vascular plant species for which the NHIC’s Southern Ontario Coefficient of Conservatism is 8, 9 or 10; tree</li> </ul>	<ul style="list-style-type: none"> <li>Forest communities of the property have compositions and structures of types common within the planning area.</li> <li>None of the forest communities has characteristics of any ranked as provincially significant by the NHIC.</li> <li>None of the forest communities have an abundance of rare, uncommon or restricted woodland plant species.</li> <li>Woodland is not considered to be significant in terms of uncommon characteristics.</li> </ul>

**Table 5. Significant Woodland Assessment (PPS), Gilford Subdivision**

CRITERIA	STANDARDS	ASSESSMENT
	<p>species of restricted distribution such as sassafras or rock elm; species existing only in a limited number of sites within the planning area</p> <ul style="list-style-type: none"> <li>Characteristics of older woodlands or woodlands with larger tree size structure in native species meet minimum area thresholds (e.g., 1-10ha, depending on circumstance): older woodlands could be defined as having 10 or more trees/ha greater than 100 years old; larger tree size structure could be defined as 10 or more trees/ha at least 50cm in diameter, or a basal area of 8 or more m<sup>2</sup>/ha in trees that are at least 40cm in diameter</li> </ul>	
<b>Economic and Social Function Values Criteria</b>		
<ul style="list-style-type: none"> <li>Woodlands that have high economic or social values through particular site characteristics or deliberate management should be protected.</li> </ul>	<p>Woodlands should be considered significant if they have:</p> <ul style="list-style-type: none"> <li>High productivity in terms of economically viable products together with continuous native natural attributes and meet minimum area thresholds (e.g., 2-20ha, depending on circumstance)</li> <li>A high value in special services such as air-quality improvement or recreation at a sustainable level that is compatible with long-term retention and meet minimum area thresholds (e.g., 0.2-10ha, depending on circumstance)</li> <li>Important identified appreciation, education, cultural or historical value and meet minimum area thresholds (e.g., 0.2-10ha, depending on circumstance)</li> </ul>	<ul style="list-style-type: none"> <li>Forest communities of property do not generate economically viable forest products.</li> <li>No formal recreational use of property of adjacent lands.</li> <li>Forests not identified as providing education, cultural or historical value.</li> <li>Woodland is not considered to be significant in terms of economic and social function values.</li> </ul>

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

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**APPENDIX E**

**Ontario Breeding Bird Atlas Data**

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**APPENDIX F**

**LSRCA Background Fisheries Information**

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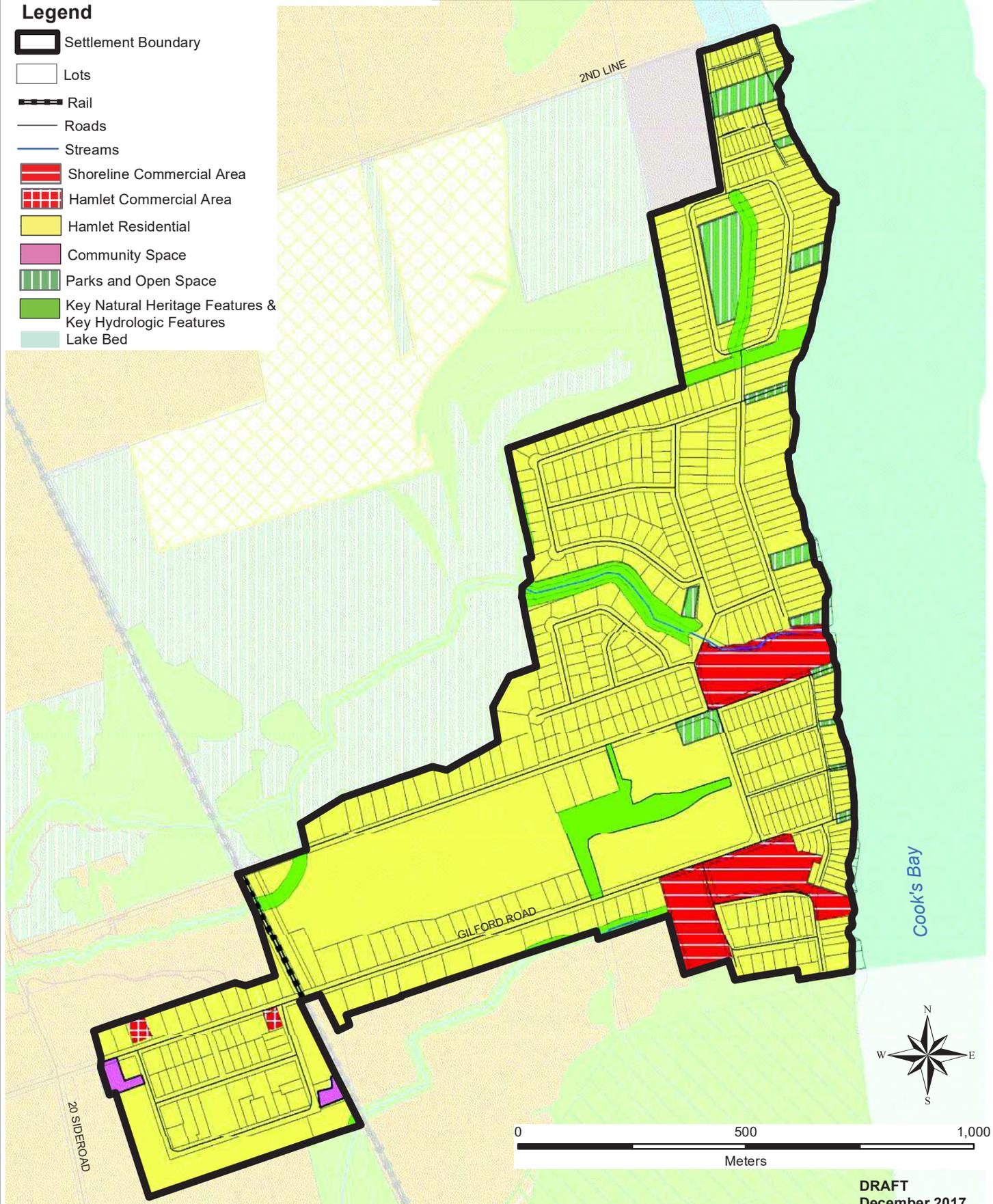
# Schedule B10 Land Use: Gilford Innisfil Official Plan

The hazard lands shown on this map are approximate. For an accurate source of mapping please contact the local conservation authority.

▲  
Schedule B13  
Land Use

## Legend

-  Settlement Boundary
-  Lots
-  Rail
-  Roads
-  Streams
-  Shoreline Commercial Area
-  Hamlet Commercial Area
-  Hamlet Residential
-  Community Space
-  Parks and Open Space
-  Key Natural Heritage Features & Key Hydrologic Features
-  Lake Bed



**DRAFT**  
December 2017

## Appendix 9: Natural Areas

### Innisfil Official Plan

#### Legend

-  Innisfil Municipal Boundary
-  Big Bay Point OPA
-  Roads
-  Streams
-  Stream Corridors
-  Physical ESA
-  Biological ESA
-  Provincially Significant Wetlands
-  Other Wetlands
-  Lakes

Property Location



Excerpt from Appendix 9: Natural Areas Innisfil Official Plan (Draft December 2017).

Search (Address or Roll Numbers)

1291 Shore Acres Drive ✕

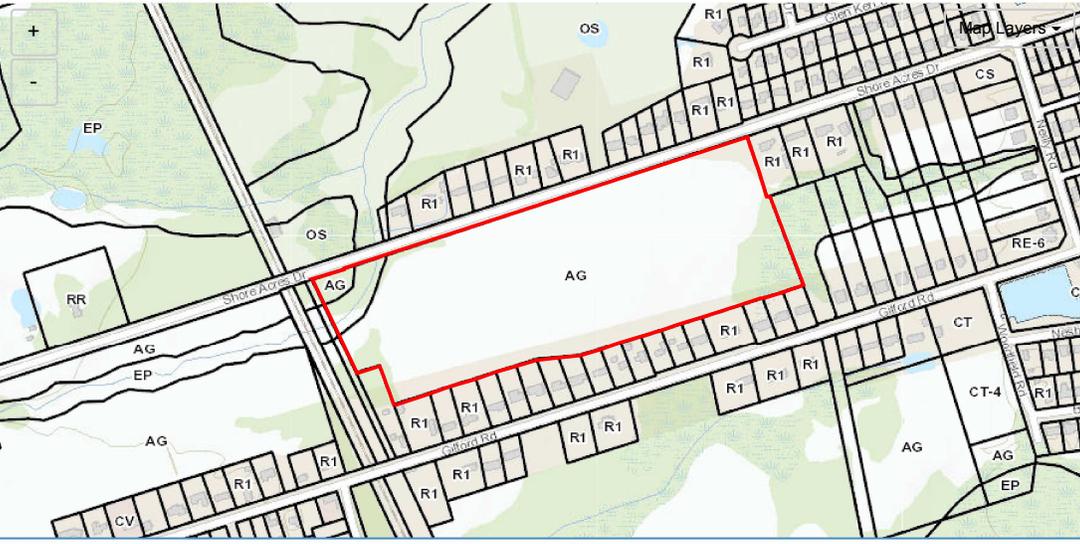
Zoning Results

Address Information

Roll Number: 431603007419701  
 Address: 1291 Shore Acres Drive 📍 Highlight

Zoning Information [ Review By-Law ] (<https://innisfil.ca/wp-content/uploads/2019/07/Zoning-By-law-080-13-ID-426212.pdf>)

Zone	Description	Area	
EP	Environmental Protection	4,297 m <sup>2</sup>	<span style="float: right;">📍 Highlight</span>
AG	Agricultural General Zone	134,897 m <sup>2</sup>	<span style="float: right;">📍 Highlight</span>



Scale 1:9,028 [Terms \(https://maps.simcoe.ca/terms.html\)](https://maps.simcoe.ca/terms.html) [Zoning By Law \(https://innisfil.ca/wp-content/uploads/2019/07/Zoning-By-law-080-13-ID-426212.pdf\)](https://innisfil.ca/wp-content/uploads/2019/07/Zoning-By-law-080-13-ID-426212.pdf) [Contact Us \(mailto:info@innisfil.ca\)](mailto:info@innisfil.ca)

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**Disclaimer:**  
 THIS IS NOT A PLAN OF SURVEY. Zoning information presented here is a representation sourced from Geographic Information Systems. In the event of a discrepancy between the zoning information contained on this website and the information contained in the records and zoning by-law of the municipality, the information contained in the records and zoning by-law of the municipality shall be deemed accurate. Under no circumstances shall the municipality be liable for any direct, indirect, special, punitive, incidental, or consequential damages arising out of the use of, or the inability to use this zoning tool. Zoning maps should always be referred to in conjunction with the text of the zoning by-law. Terms of Use (<http://maps.simcoe.ca/terms.html>)

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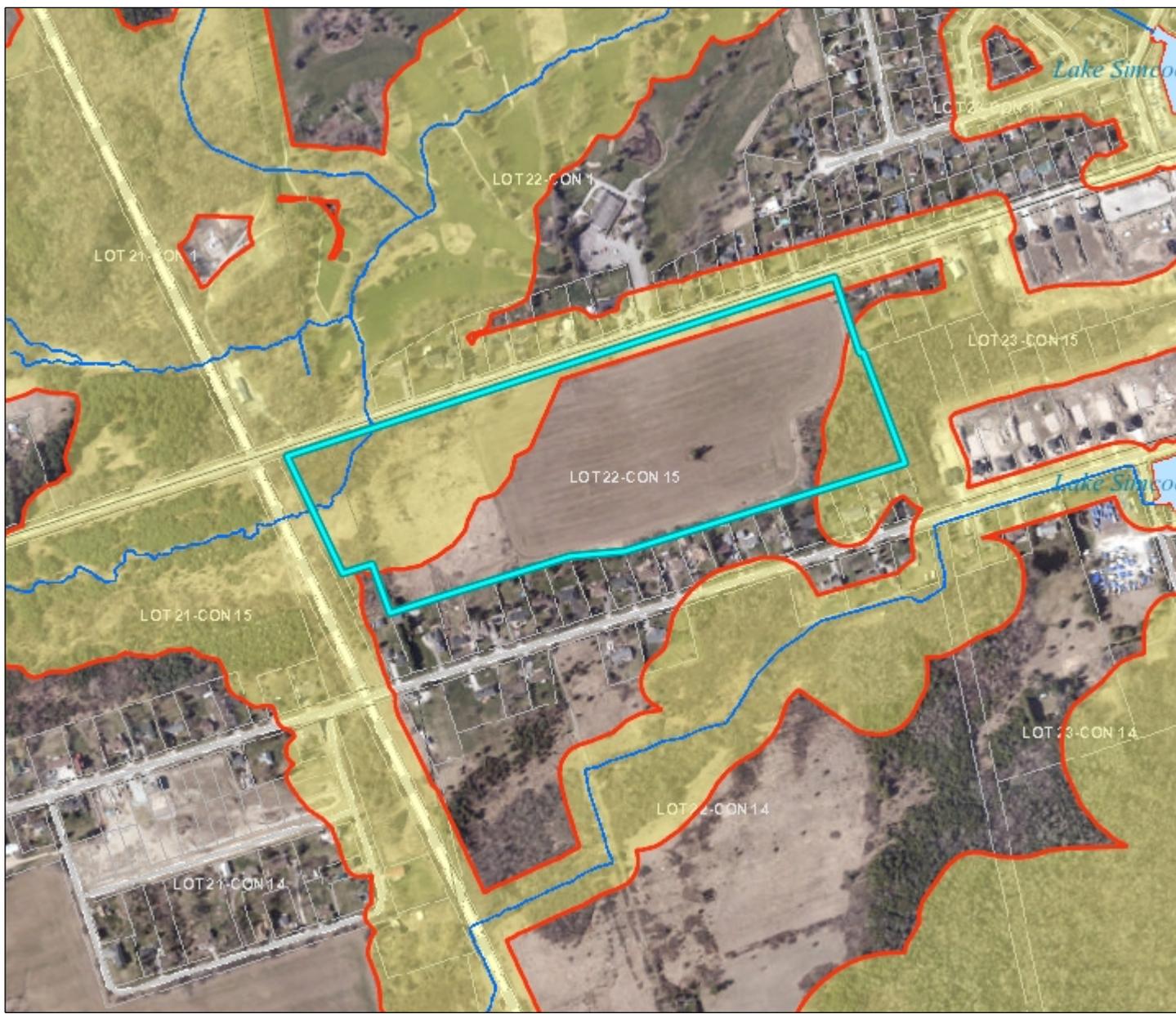
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**APPENDIX B**

**LSRCA Information**

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**Features**

- Regulation Map Index
- LSRCA Watershed Boundary
- Lake Simcoe
- Watercourse
- Regulated Area Boundary
- Regulated Area
- Address Labels
- Assessment Parcel
- Lot and Concession
- Roads**
  - Hwy 400 Series
  - Highway, Arterials
  - Local Road
- Railway

Printed On:  
9/11/2019



WGS\_1984\_Web\_Mercator\_ Auxiliary\_Sphere

Mapped By:

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

Scale 1: 7,077



## Melissa Fuller

---

**From:** Lisa-Beth Bulford [L.Bulford@lsrca.on.ca]  
**Sent:** July-08-15 12:03 PM  
**To:** Bruna Dias Peloso  
**Subject:** RE: Conformation of EIS Scope for a proposed residential development on part of Lot 21 Concession 15, Town of Innisfil

**Follow Up Flag:** Follow up  
**Flag Status:** Completed

**Categories:** Waiting client's response

Bruna,

Our ecologist has reviewed the attached EIS Terms of Reference and has accepted it subject to the following comments:

- Although significant woodland is protected through the Provincial Policy Statement in settlement areas, the LSRCA does not regulate woodland under Ontario Regulation 179/06 of the *Conservation Authorities Act* as stated in the email correspondence. The identified feature on the east edge of the subject property is delineated as swamp habitat, which is regulated by the LSRCA. The ELC should provide a single vascular plant list coupled with soil sampling to support the classification.
- A site reconnaissance will likely be required to confirm the features on-site and complete a staking exercise where required.

If you have any questions related to these comments, do not hesitate to contact me.

Sincerely,

Lisa

**\*Please Note: There have been a change to our mailing address (no PO box and new postal code)\***



**Lisa-Beth Bulford M.Sc.**  
Development Planner  
**LSRCA** 120 Bayview Parkway, Newmarket, Ontario L3Y 3W3  
905.895.1281 x 239 | 1.800.465.0437  
[l.bulford@LSRCA.on.ca](mailto:l.bulford@LSRCA.on.ca) | [www.LSRCA.on.ca](http://www.LSRCA.on.ca)

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

---

**From:** Bruna Dias Peloso [mailto:bdiaspeloso@azimuthenvironmental.com]  
**Sent:** Monday, June 15, 2015 9:11 AM  
**To:** Lisa-Beth Bulford  
**Subject:** Conformation of EIS Scope for a proposed residential development on part of Lot 21 Concession 15, Town of Innisfil

Dear Ms. Bulford,

Azimuth has been retained to complete a scoped Environmental Impact Study (EIS) for a proposed residential development on part of Lot 21 Concession 15, Town of Innisfil. The residential development includes 29 residential lots and access routes. Please see attached mapping for definition of the Study Area and property location.

We have already performed several activities/surveys for this project (outlined below), and now we will start producing the actual EIS report. Since this project has been going on for 2 years, we would like to confirm the scope of the project with LSRCA, to make sure it still fulfills all LSRCA's requirements; also, we would like to inquire about any remaining concerns that haven't been (or will not be) addressed by the activities and surveys described below.

#### EXISTING CONDITIONS

The Township of Innisfil Official Plan Policy identifies the area as a "Village Residential Area", and in the west portion of the property, a small section of "Natural Environmental Area" and "Hazard Land". The Township of Innisfil Zoning by-law designates the lands as Agriculture, Environmental Protection and Hazardous Areas. The Environmental Protection and Hazardous Areas, which are regulated by LSRCA, are located west of the planned development footprint.

Site visit indicated that the study area is primarily of agricultural use; on the southeast of the property, there is a small Deciduous Forest regulated by LSRCA; on the east of the property there is another small Deciduous Forest, a relatively large Cultural Meadow, a stream and hazardous lands, all regulated by LSRCA. Adjacent to the property (south) and across Shore Acres Drive (north), there are single family dwellings; to the east of the property there is a woodlot (across railway); to the east of the property, there is a woodlot, single family residential dwellings and two open areas (vacant lots).

#### EIS SCOPE and SURVEYS/ACTIVITIES ALREADY COMPLETED

These are the EIS scope and the results that were already obtained through desktop and onsite surveys (pending activities/surveys are highlighted):

- 1) Performed Ecological Land Classification (Lee et al. 1998); Flora surveys were conducted on August 15th and October 15th, 2014. No at-risk plant species or sensitive vegetation communities were observed in the property. A specific survey for butternut was conducted and no individuals were found.
- 2) Performed aquatic habitat assessment of watercourse located in the northwestern portion of the property.
- 3) Performed two breeding bird surveys using standard Ontario Breeding Bird Atlas methodology. Breeding bird surveys performed by Azimuth on June 12th and 23rd (2014) confirmed the presence of Canada Warbler and Eastern Wood-Pewee in the area. No other SAR bird species were present on-site during Azimuth's surveys (including incidental observations).
- 4) Conducted an assessment of potential breeding amphibian habitat to document the potential for amphibians within the adjacent wetlands. There were no vernal pools present on site.
- 5) Recorded all incidental wildlife observations during the site visit. Incidental wildlife observations were recorded and there were no at-risk species in the property during the surveys.
- 6) Prepared Species at Risk screenings based on desktop records of species occurrences known as well as site knowledge of the habitats present within the property:

The Ontario Breeding Bird Atlas (square #17PJ19) has been queried to determine the avian SAR birds recorded within the 100km<sup>2</sup> data square that contains the property. The following species were listed in the data summary: King Rail, Red-headed Woodpecker, Eastern Wood-Pewee, Bank Swallow, Barn Swallow, Wood Thrush, Golden-winged Warbler, Cerulean Warbler, Canada Warbler, Eastern Meadowlark and Bobolink. A table assessing the suitability of habitat present in the property for each one of these species has been done.

Breeding bird surveys performed by Azimuth confirmed the presence of Canada Warbler and Eastern Wood-Pewee in the area. No other SAR bird species were present on-site during Azimuth's surveys (including incidental observations).

Available information from the Natural Heritage Information Centre (NHIC) indicates that SAR recorded within the study area (1 x 1 km data squares 17PJ1697 and 17PJ1698) includes a record for Red-headed Woodpecker (2002), and a record for Lilypad Clubtail (no date). There are also historical records for: Arrow Clubtail (1979), Green-striped Darner (1941), Unicorn Clubtail (1933) and Weak Bluegrass (1980).

7) Prepared map with current aerial photograph presenting locations of existing natural features including vegetation communities, watercourse, and wetland boundaries as well as policy defined areas;

8) Identified potential constraints related to the existing natural features and functions have been identified (Fig 2 – attached)

9) Assess the potential direct and indirect impacts of the proposed development on the sensitive or significant environmental features as described above;

10) Develop an appropriate avoidance/mitigation/restoration strategy to address the potential environmental impacts and the proposed removal of natural cover;

11) Identify enhancement opportunities for the watercourse corridor, as per 6.33-DP and 6.34-DP of the Lake Simcoe Protection Plan;

12) Reviewed and summarized relevant environmental policy; and

13) Prepare an EIS report that characterizes existing natural heritage features and functions, identifies constraints and opportunities for development, assesses potential impacts based on details of the development (i.e. design plan, grading plan, etc.), and provide recommendations for mitigation of impacts;

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

*Bruna Peloso, M.Sc.*

Terrestrial Ecologist

Azimuth Environmental Consulting, Inc.  
85 Bayfield Street, Suite 400, Barrie, ON, L4M 3A7  
ph: (705) 721-8451 ext 214 cell: (705)331-6677  
[bdiaspeloso@Azimuthenvironmental.com](mailto:bdiaspeloso@Azimuthenvironmental.com)  
[www.azimuthenvironmental.com](http://www.azimuthenvironmental.com)



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



Sent by E-mail: [smontgomery@innisfil.ca](mailto:smontgomery@innisfil.ca)

March 27, 2028

**File No: D14-2017-020 & D12-2017-002**  
**IMS File No: PZOA849 & PSDC672**

Steven Montgomery  
Senior Planner  
Town of Innisfil  
2101 Innisfil Beach Road  
Innisfil, ON L9S 1A1

Dear Mr. Montgomery:

**Re: Application for Zoning By-law Amendment & Plan of Subdivision**  
**0 Shore Acres Drive**  
**Town of Innisfil, County of Simcoe**

---

Thank you for circulating the Notice of Complete Application for a Zoning By-law Amendment and Plan of Subdivision associated with the subject property to the Lake Simcoe Region Conservation Authority (LSRCA). It is our understanding that the purpose and effect of these applications is to allow for 25 unit single detached estate residential subdivision on the above noted property. We have reviewed these applications for consistency with the Provincial Policy Statement (PPS), conformity with the Lake Simcoe Protection Plan (LSPP) and in accordance with the purpose and intent of Ontario Regulation 179/06 made under the *Conservation Authorities Act*.

Based on available mapping it appears the subject property contains lands subject to flooding and erosion associated with White Birch Creek which traverses the North West corner of the property. In addition, the property appears to contain Significant Woodland, wetland and lands identified within a Significant Groundwater Recharge Area.

The proposed development meets the definition of *major development* as per the LSPP. As such, LSPP Policies 4.8-DP to 4.11-DP are applicable to this development application, which require the submission of a Stormwater Management Report, water balance and phosphorous budget. Please see the LSRCA Technical Guidelines for Stormwater Management Submissions (2016). In addition, the water balance is also required to satisfy LSPP Policy 6.40-DP.

Please be advised that as of January 1, 2018 the LSRCA Phosphorous Offsetting Policy is in effect and applies to this application. As such, a Preliminary Phosphorus Budget must be provided as part of an overall Functional Servicing Report. The Phosphorus Budget must demonstrate that the phosphorus load from the development on the property will be zero. In situations where the phosphorus load cannot be met or demonstrated in a post-development scenario to achieve the Zero Phosphorus, the developer or proponent shall be required to provide phosphorus offsetting to the LSRCA. Please see our website for more information.

March 27, 2018

File No: D14-2017-020 & D12-2017-002

IMS File No.: PZOA849 & PSDC672

Mr. S. Montgomery

By copy of this letter we are advising the consultants of the following comments:

#### Natural Heritage Comments

1. The boundaries of the natural heritage features have not been confirmed by the LSRCA. A staking exercise is required to confirm the boundaries of the dripline and any other natural heritage features.
2. The LSRCA agrees with the proposed setbacks of 30 m from the high water mark of the watercourse and 10 m from the dripline of the woodland. Please note these areas in addition to the natural heritage features should be protected through zoning as Environmental Protection. All lot lines should be removed from the setbacks and natural heritage features. In addition, please confirm that all natural heritage features and associated vegetation protection zones will be put into public ownership.
3. Please ensure that all stormwater management features are located outside of the natural heritage features and their associated setbacks, this includes all grading.
4. Please provide restoration plans for the vegetation protection zones and all landscape plans for the stormwater management features.

#### Water Balance Comments

5. The Table with the summary of groundwater elevations indicates that ground water levels were only captured once (March 30, 2015), more detailed monitoring is required to establish the seasonal high (spring) water levels. This will aid in design of any necessary LID facilities.
6. Please supply a feature based water balance (water balance on a sub-catchment scale) and indicate how the wetlands to the east and to the north will be maintained.
7. In-situ percolation testing is required to establish the local infiltration factors for the property. This will aid in the design of any required infiltration facilities.
8. Please provide maps showing the direction of surface water flow and groundwater flow. There is a topographic drainage divide on the property. Please ensure that the water balance is calculated reflecting the appropriate sub-catchment areas.
9. It is noted that the nitrates load increases to the west and is above ODWS in MW13 in the northeast corner of the property, to establish whether or not this is due to agricultural practices testing should be ongoing for a period after agricultural practices have ceased. Since the development will be utilizing private onsite sewer systems it is important to know the background levels of nitrate loading.
10. With the use of private septic systems there will be nitrate leaching, please recognize that the wetland may not be used as a nitrate attenuation facility.

March 27, 2018

File No: D14-2017-020 & D12-2017-002

IMS File No.: PZOA849 & PSDC672

Mr. S. Montgomery

11. In section 1.1 the property is described as being serviced by municipal water. In section 3.1 the property is described as being served by individual water supply wells. Please establish which of these is correct.
12. Mitigation features: grading, directing roof leaders to overland flow, bio-retention swales, permeable pavers, please explain how these will be utilized and how the wetlands to the north and east will be maintained.
13. Water Table Elevation section states: "the base of all drainage ditches and "dry" storm water management ponds should be maintained at least 500 mm above the water table". Please note that a 1 m separation is required between the seasonal (spring) high groundwater level and the invert of any storm water management or LID facility.
14. Please provide climate data from a reputable source such as Environment Canada within close proximity to the proposed development or from the LSRCA website.
  - Water balance should be on a sub-catchment basis, there is a drainage divide on the property plus lands that will remain undeveloped.
  - Show calculations for ET,
  - Infiltration factors did not take into account vegetation
  - Please ensure that all pervious (lawns, landscaped areas, e.g.) and impervious (roofs, driveways roads and pathways, e.g.) areas are accounted for in the water balance
  - An infiltration factor of 0.5 has been applied. This suggests that 50% of the precipitation is infiltrated and 50% will be runoff. Please explain why the 2 values are different in the pre-development scenario.
  - The landscaped including interlocked area covered is not accounted for in the water balance.
  - Annual water balance after building additions: typically 10% evaporation is factored into the water balance from impervious areas. This will reduce the amount of runoff and also reduce the quantity of precipitation available for infiltration. Please include the evaporation factor in the water balance
  - Taking the above comments into consideration please update the water balance
15. Please ensure that post-development runoff to wetlands matches the pre-development runoff to the wetlands.
16. Please ensure that post-development infiltration to wetlands matches the pre-development infiltration to wetlands.
17. Please provide drawings and sections of all LID facilities with dimensions, materials and groundwater levels indicated on the drawings.
18. Show all calculations demonstrating infiltration facility footprint is adequate to allow infiltration within 24-48 hours.
19. Please provide calculations demonstrating the volume of the infiltration facility will meet the annual water balance deficit.

March 27, 2018  
File No: D14-2017-020 & D12-2017-002  
IMS File No.: PZOA849 & PSDC672  
Mr. S. Montgomery

Please be advised that comments related to the Functional Servicing Report and floodplain are forthcoming from our office.

In accordance with LSRCA Fee Policy, our fee for the review of the Zoning By-law Amendment and Draft Plan Approval is \$14,500. By copy of this letter we are advising the applicant's consultants to provide payment as soon as possible.

If you have any questions related to these comments, please do not hesitate to contact the following:

- Natural Heritage: Shauna Fernandes Chagani at 905-895-1281, ext. 247 or [s.fernandes@LSRCA.on.ca](mailto:s.fernandes@LSRCA.on.ca)
- Water Balance: Caroline Hawson at 905-895-1281, ext. 119 or [C.Hawson@LSRCA.on.ca](mailto:C.Hawson@LSRCA.on.ca)

Please reference the above file numbers in future correspondence.

Sincerely,



Taylor Knapp  
Development Planner

Cc

Paul King, Planning and Development Consultant ([paking@pathcom.com](mailto:paking@pathcom.com))  
Melissa Fuller, Azimuth Environmental Consulting ([mfuller@azimuthenvironmental.com](mailto:mfuller@azimuthenvironmental.com))  
Shama Qureshi, Terraprobe Inc. ([squreshi@terraprobe.ca](mailto:squreshi@terraprobe.ca))  
Dylan Moore, Town of Innisfil ([dmoore@innisfil.ca](mailto:dmoore@innisfil.ca))

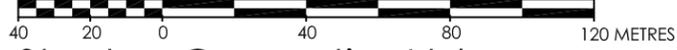
# SKETCH of LIMIT OF WOODLOT

AS STAKED BY LAKE SIMCOE CONSERVATION AUTHORITY  
JULY 26, 2018

## TOWN OF INNISFIL

COUNTY OF SIMCOE

Scale 1:2000



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- STK W20

### HORIZONTAL DATUM NOTE

PROJECTION: UNIVERSAL TRANSVERSE MERCATOR  
(UTM, ZONE 17, CM81°00'W)  
DATUM: NAD 83 (CSRS)(2010.0)

THIS PLAN MAY BE CONVERTED TO GROUND BY DIVIDING BY A COMBINED SCALE FACTOR OF 0.999734.

### METRIC CONVERSION

COORDINATES SHOWN ON THIS PLAN ARE IN METRES AND CAN BE CONVERTED TO FEET BY DIVIDING BY 0.3048



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stantec.com

DRAWN: BL | CHECKED: \* | DATE: August 7, 2018 | PROJECT No.: 161670129

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**APPENDIX C**

**MNRF Information**

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June 12, 2015

AEC 13-151

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

Attention: Jodi Benvenuti, Species at Risk Biologist

**Re: Request for Species at Risk Background Information for a Proposed  
Development of a Residential Subdivision on part of Lot 21 Concession 15, in  
the Town of Innisfil, County of Simcoe**

Dear Ms. Benvenuti:

Azimuth Environmental Consulting (Azimuth) has been retained to complete a scoped Environmental Impact Study (EIS) including a Species at Risk Inventory for a proposed residential development, including 29 residential lots and access routes. We are undertaking an assessment of Species at Risk that could potentially be utilizing the property to complete their life functions. Please see attached mapping for definition of the Study Area and property location.

#### EXISTING CONDITIONS

The Township of Innisfil Official Plan Policy identifies the area as a “Village Residential Area”, and in the west portion of the property, a small section of “Natural Environmental Area” and “Hazard Land”. The Township of Innisfil Zoning by-law designates the lands as Agriculture, Environmental Protection and Hazardous Areas. The Environmental Protection and Hazardous Areas are located west of the planned development footprint.

Parts of the subject properties are regulated by the LSRCA. The planned footprint involves some LSRCA-regulated areas on the east site of the property; however, those regulated areas are associated with active agricultural lands and are outside of the mapped floodplain, so we do not anticipate an issue in obtaining a permit. Anyway, LSRCA will be contacted regarding their concerns and proposed mitigation, issuing of permits, etc.

Site visit indicated that the study area is primarily of agricultural use; on the southeast of the property, there is a small Deciduous Forest regulated by LSRCA; on the east of the property there is another small Deciduous Forest, a relatively large Cultural Meadow, a stream and hazardous lands, all regulated by LSRCA. Adjacent to the property (south) and across Shore Acres Drive (north), there are single family dwellings; to the east of the property there is a woodlot (across railway); to the east of the property, there is a woodlot, single family residential dwellings and two open areas (vacant lots).

## BACKGROUND SAR DATA

The Ontario Breeding Bird Atlas (square #17PJ19) has been queried to determine the avian SAR birds recorded within the 100km<sup>2</sup> data square that contains the property. The following species were listed in the data summary: King Rail, Red-headed Woodpecker, Eastern Wood-Pewee, Bank Swallow, Barn Swallow, Wood Thrush, Golden-winged Warbler, Cerulean Warbler, Canada Warbler, Eastern Meadowlark and Bobolink.

Breeding bird surveys performed by Azimuth on June 12<sup>th</sup> and 23<sup>rd</sup> (2014) confirmed the presence of Canada Warbler and Eastern Wood-Pewee in the area. No other SAR bird species were present on-site during Azimuth's surveys (including incidental observations).

Available information from the Natural Heritage Information Centre (NHIC) indicates that SAR recorded within the study area (1 x 1 km data squares 17PJ1697 and 17PJ1698) includes a record for Red-headed Woodpecker (2002), and a record for Lilypad Clubtail (no date). There are also historical records for: Arrow Clubtail (1979), Green-striped Darner (1941), Unicorn Clubtail (1933) and Weak Bluegrass (1980).

Vegetation survey was performed by Azimuth on August 15<sup>th</sup> and October 15<sup>th</sup> (2014), and no at-risk plant species or sensitive vegetation communities were recorded on-site. Azimuth has completed a specific search for Butternut with no individuals recorded.

The purpose of this letter is to request additional information regarding information on additional Species at Risk and sensitive areas associated with the study area, aside from those identified above, and to request any background information that may be relevant to our study.

It is generally our intention to append this correspondence in the resulting EIS. If restricted species occur in the area and the MNR determines that the restricted species needs to be considered in the EIS, please provide two copies of the response - one with

the species name replaced with (Restricted Species) for inclusion in the appendices of our EIS, the other retaining the identity of the species for Azimuth's internal use only.

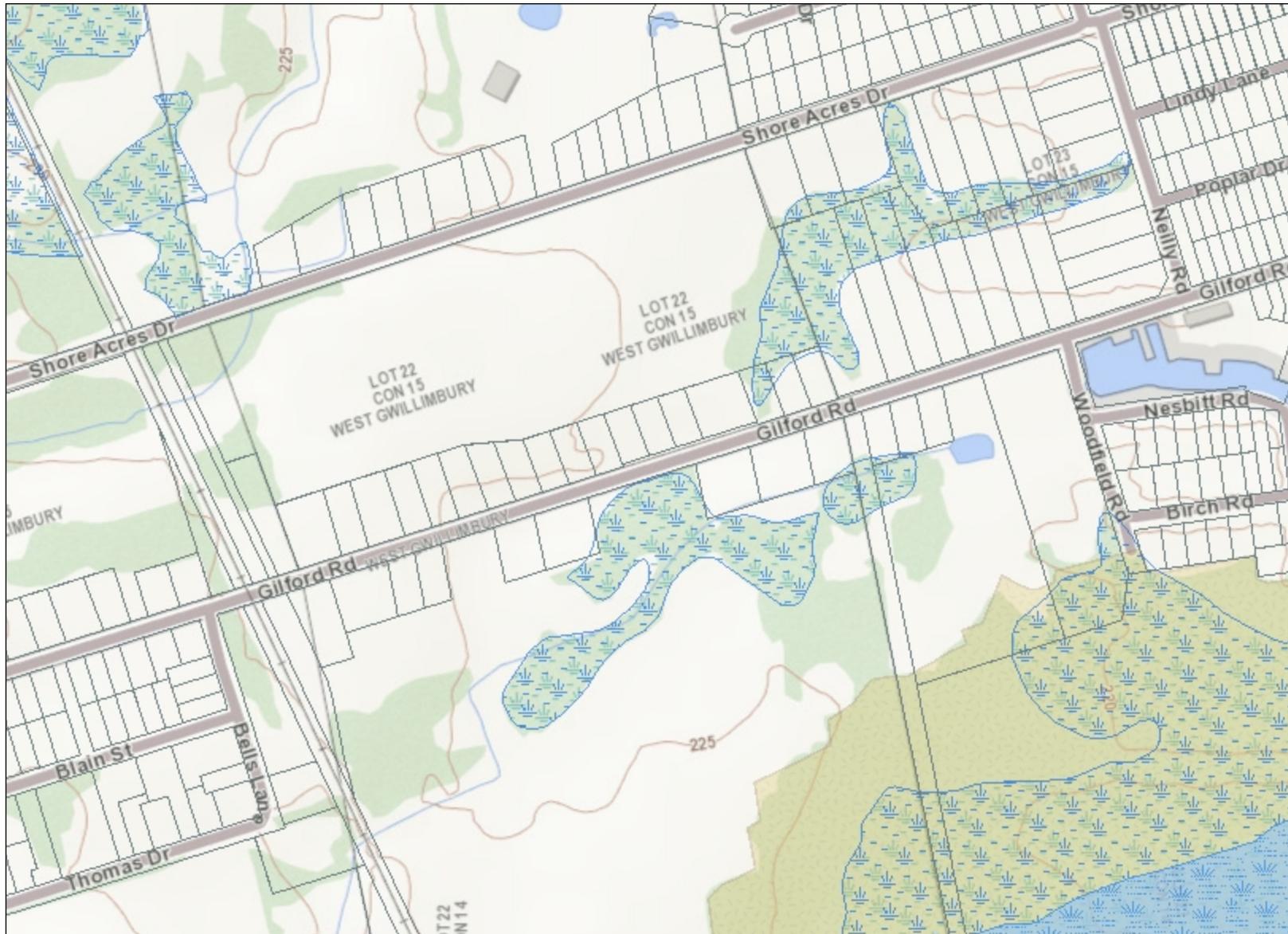
Thank you very much for your assistance in this matter. If you have any questions regarding this project please do not hesitate to contact us.

Yours truly,  
AZIMUTH ENVIRONMENTAL CONSULTING, INC.



Bruna Peloso, M.Sc.  
Terrestrial Ecologist

Attach: Site area mapping, OBBA list



**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
  - Land Use Designations**
    -  Natural Core Area
    -  Natural Linkage Area
    -  Countryside Area
    -  Rural Settlement
    -  Palgrave Estates Residential Community
    -  Settlement Area

0.3 0 0.16 0.3 Kilometers



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**

**Woodland Area Calculation**

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# 13-151 Woodland Area Calculation

The screenshot displays a web-based GIS application interface. At the top left is the logo for the County of Simcoe. A search bar is located at the top center. On the right side of the top bar are links for 'Basic', 'Advanced', and 'Help'. Below the search bar is a toolbar with icons for 'Layers', 'Tools', 'My Maps', 'Themes', and 'Reports'. A 'Measure' sidebar is open on the left, containing instructions and a 'Measure Tool' section with icons for line, polygon, and area measurement. The 'Measure Results' section shows the following values:

Unit	Value	Label
Acre	30.46	ac.
Hectare	12.33	ha
Square Km	0.12	sq. km
Square Feet	1,326,761.41	sq. ft
Square Yard	147,417.93	sq. yd.

The main map area shows an aerial view of a residential area with a blue polygon overlaid on a parcel. A tooltip with the text 'Click to start drawing' is visible over the polygon. The map includes street names such as 'Shore Acres Dr.', 'Glen Kerr Dr.', 'John Ave.', and 'Thomas Dr.'. In the bottom right corner, there are links for 'Print', 'Legend', 'Feedback', and 'Terms', along with the URL 'maps.simcoe.ca' and a scale of '1:9,028'.



Search...



Basic Advanced Help

- Layers
- Tools
- My Maps
- Themes
- Reports

### Measure

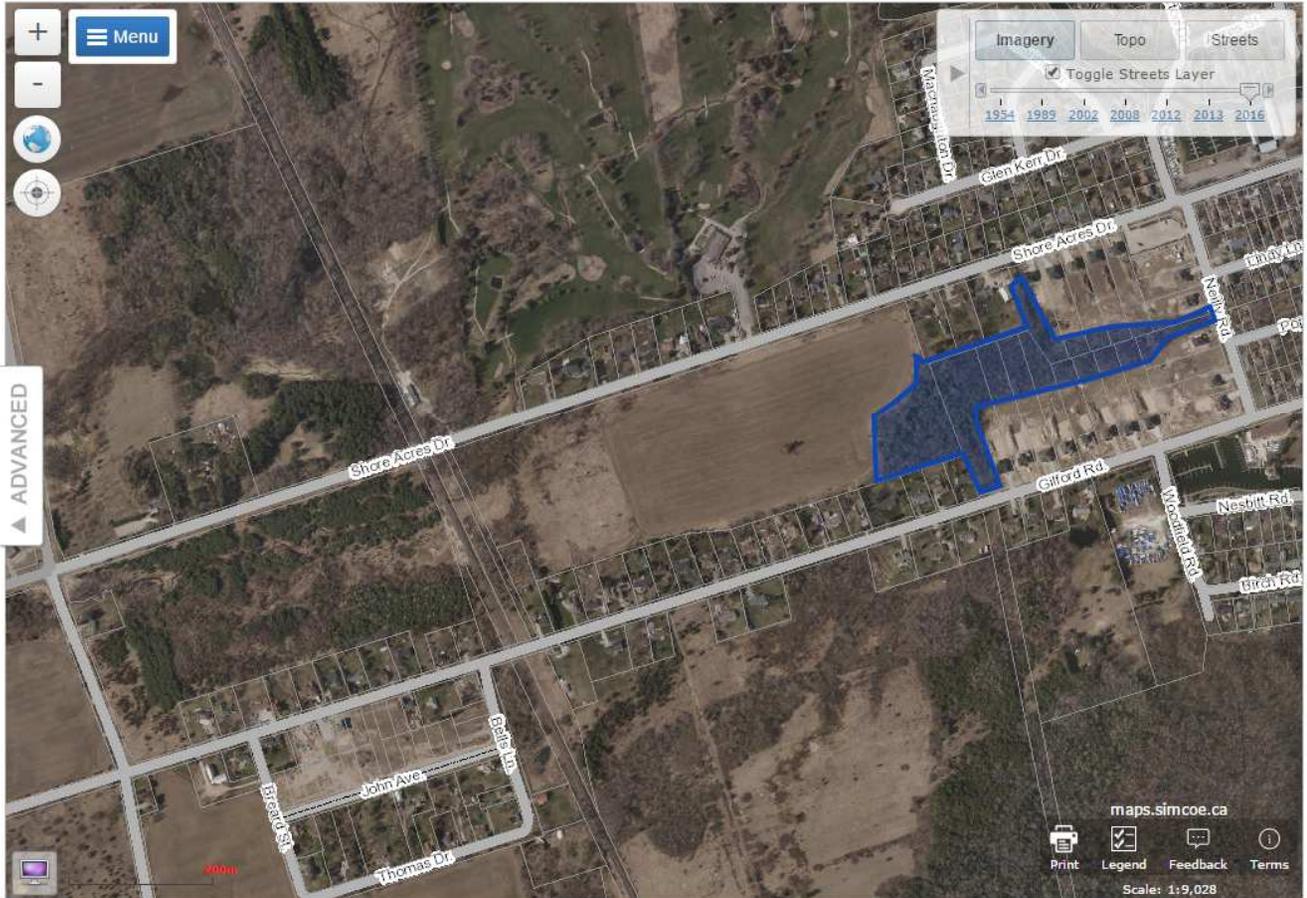
Please select the type of measurements you wish to perform from the toolbar below. Use the line tools for distances and polygon tools for area.

#### Measure Tool



#### Measure Results [\[ clear all \]](#)

- Acre**  
10.09 ac  
[Add to My Maps](#)
- Hectare**  
4.08 ha  
[Add to My Maps](#)
- Square Km**  
0.04 sq. km  
[Add to My Maps](#)
- Square Feet**  
439,656.75 sq. ft  
[Add to My Maps](#)
- Square Yard**  
48,850.75 sq.



ADVANCED

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**APPENDIX E**

**Ontario Breeding Bird Atlas Data**

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[About the Atlas](#)
[Data and Maps](#)
[Resources for Atlasers](#)
[Fr](#)

### Atlas Data Summary

Select what type of data summary you would like to display and click the appropriate view button. You can use those pages to find out where the [atlas regions](#) and [atlas squares](#) are located.

What years do you want to display ::  Which version of the atlas

How do you want to view the results:

Show me statistics on the number of species reported, the effort, etc.

- View summary statistics:
- View summary statistics:  within region
- View list of completed Point Counts in square ::

Show me the list of species, the highest breeding evidence and abundance

- View species list for ::
- View species list for square or block no. ::

Show me the list of regions or squares reporting a species

- View list of  reporting

A total of 46 point counts have been completed in square 17PJ19. The following pre-defined point counts have been completed: 1, 2, 5, 8, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 26, 27, 31, 35, 36, 43, 44, 45, 46, 50

In addition 19 point count(s) have been completed elsewhere.

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

Species list for square 17PJ19 (number of entries returned: 134)

Region	Square	Species	Breeding Evidence			Point Counts				
			Max BE	Categ	#Sq	Atlasser Name	#PC	%PC	Abun	#Sq
13	17PJ19	Canada Goose	AE	CONF	1	Garth N Baker	5	10.87	1.32621	1
13	17PJ19	Trumpeter Swan	NY	CONF	1					
13	17PJ19	Wood Duck	FY	CONF	1	Garth N Baker				
13	17PJ19	American Wigeon	H	POSS	1	Garth N Baker				
13	17PJ19	Mallard	FY	CONF	1	Garth N Baker	1	2.17	0.0217	1
13	17PJ19	Blue-winged Teal	D	PROB	1	2 atlasers				
13	17PJ19	Green-winged Teal	P	PROB	1	Garth N Baker				
13	17PJ19	Ring-necked Duck	P	PROB	1					
13	17PJ19	Hooded Merganser	FY	CONF	1					
13	17PJ19	Common Merganser	H	POSS	1					
13	17PJ19	Ring-necked Pheasant	S	POSS	1	Kevin R Shackleton	1	2.17	0.0217	1
13	17PJ19	Ruffed Grouse	NE	CONF	1	Garth N Baker				
13	17PJ19	Wild Turkey	T	PROB	1		2	4.35	0.0435	1
13	17PJ19	Common Loon	P	PROB	1					
13	17PJ19	Pied-billed Grebe	AE	CONF	1					
13	17PJ19	Double-crested Cormorant	V	PROB	1	Jeff'survey Howard	1	2.17	0.2174	1
13	17PJ19	American Bittern	T	PROB	1	Ron Fleming				
13	17PJ19	Least Bittern	T	PROB	1		2	4.35	0.0652	1
13	17PJ19	Great Blue Heron	NY	CONF	1	Jeff'survey Howard	2	4.35	0.0652	1
13	17PJ19	Green Heron	P	PROB	1					
13	17PJ19	Turkey Vulture	T	PROB	1	Garth N Baker				
13	17PJ19	Osprey	CF	CONF	1		3	6.52	0.1087	1
13	17PJ19	Bald Eagle	H	POSS	1	Jeff'survey Howard				
13	17PJ19	Northern Harrier	T	PROB	1	Garth N Baker	1	2.17	0.0217	1
13	17PJ19	Sharp-shinned Hawk	T	PROB	1					
13	17PJ19	Red-tailed Hawk	NE	CONF	1		2	4.35	0.0652	1
13	17PJ19	American Kestrel	CF	CONF	1					
13	17PJ19	King Rail	H	POSS	1					
13	17PJ19	Virginia Rail	DD	CONF	1					

13	17PJ19 Sora	DD	CONF 1				
13	17PJ19 Common Gallinule	FY	CONF 1	Kevin R Shackleton	1	2.17	0.0217 1
13	17PJ19 American Coot	NE	CONF 1	Garth N Baker			
13	17PJ19 Sandhill Crane	D	PROB 1	Garth N Baker			
13	17PJ19 Killdeer	FY	CONF 1	Burke Korol	8	17.39	0.2609 1
13	17PJ19 Rock Pigeon	AE	CONF 1	Garth N Baker	11	23.91	0.8261 1
13	17PJ19 Spotted Sandpiper	FY	CONF 1				
13	17PJ19 Common Snipe	D	PROB 1				
13	17PJ19 American Woodcock	D	PROB 1				
13	17PJ19 Ring-billed Gull	H	POSS 1	Garth N Baker	9	19.57	0.7609 1
13	17PJ19 Herring Gull	P	PROB 1		2	4.35	0.1304 1
13	17PJ19 Black Tern	NE	CONF 1		1	2.17	0.087 1
13	17PJ19 Forster's Tern	NE	CONF 1		1	2.17	0.087 1
13	17PJ19 Mourning Dove	FY	CONF 1		16	34.78	0.6304 1
13	17PJ19 Black-billed Cuckoo	H	POSS 1	2 atlasers			
13	17PJ19 Eastern Screech-Owl	S	POSS 1	Theresa McKenzie			
13	17PJ19 Great Horned Owl	H	POSS 1				
13	17PJ19 Ruby-throated Hummingbird	A	PROB 1	2 atlasers			
13	17PJ19 Belted Kingfisher	FY	CONF 1	Ron Fleming	2	4.35	0.0435 1
13	17PJ19 Red-headed Woodpecker	AE	CONF 1				
13	17PJ19 Yellow-bellied Sapsucker	FY	CONF 1	Kevin R Shackleton			
13	17PJ19 Downy Woodpecker	AE	CONF 1		6	13.04	0.1522 1
13	17PJ19 Hairy Woodpecker	AE	CONF 1		3	6.52	0.0652 1
13	17PJ19 Northern Flicker	AE	CONF 1		5	10.87	0.1087 1
13	17PJ19 Pileated Woodpecker	NY	CONF 1				
13	17PJ19 Eastern Wood-Pewee	CF	CONF 1		4	8.7	0.1087 1
13	17PJ19 Alder Flycatcher	CF	CONF 1				
13	17PJ19 Willow Flycatcher	CF	CONF 1		6	13.04	0.2174 1
13	17PJ19 Least Flycatcher	CF	CONF 1		1	2.17	0.0217 1
13	17PJ19 Eastern Phoebe	AE	CONF 1		1	2.17	0.0217 1
13	17PJ19 Great Crested Flycatcher	CF	CONF 1		9	19.57	0.2174 1
13	17PJ19 Eastern Kingbird	NE	CONF 1		11	23.91	0.3261 1
13	17PJ19 Yellow-throated Vireo	T	PROB 1				
13	17PJ19 Blue-headed Vireo	S	POSS 1	Garth N Baker			
13	17PJ19 Warbling Vireo	CF	CONF 1		5	10.87	0.1087 1
13	17PJ19 Red-eyed Vireo	CF	CONF 1		6	13.04	0.1522 1
13	17PJ19 Blue Jay	FY	CONF 1	Keith M. Dunn	11	23.91	0.3478 1
13	17PJ19 American Crow	CF	CONF 1	Garth N Baker	27	58.7	1.587 1
13	17PJ19 Common Raven	P	PROB 1				
13	17PJ19 Horned Lark	T	PROB 1	Garth N Baker	2	4.35	0.1087 1
13	17PJ19 Purple Martin	AE	CONF 1				
13	17PJ19 Tree Swallow	AE	CONF 1	2 atlasers	10	21.74	0.913 1
13	17PJ19 Northern Rough-winged Swallow	P	PROB 1				
13	17PJ19 Bank Swallow	FY	CONF 1	Garth N Baker			
13	17PJ19 Cliff Swallow	AE	CONF 1	Kevin R Shackleton	3	6.52	0.087 1
13	17PJ19 Barn Swallow	CF	CONF 1	Susanne K. Stam	16	34.78	0.8478 1
13	17PJ19 Black-capped Chickadee	AE	CONF 1		12	26.09	0.3696 1
13	17PJ19 Red-breasted Nuthatch	T	PROB 1	Kevin R Shackleton	1	2.17	0.0217 1
13	17PJ19 White-breasted Nuthatch	CF	CONF 1		2	4.35	0.0435 1
13	17PJ19 Brown Creeper	T	PROB 1				
13	17PJ19 House Wren	CF	CONF 1		9	19.57	0.2826 1
13	17PJ19 Winter Wren	T	PROB 1				
13	17PJ19 Sedge Wren	T	PROB 1				
13	17PJ19 Marsh Wren	AE	CONF 1		2	4.35	0.0652 1
13	17PJ19 Blue-gray Gnatcatcher	CF	CONF 1	Ron Fleming			
13	17PJ19 Eastern Bluebird	S	POSS 1	Susanne K. Stam	1	2.17	0.0217 1
13	17PJ19 Veery	FY	CONF 1		3	6.52	0.1087 1
13	17PJ19 Hermit Thrush	T	PROB 1				
13	17PJ19 Wood Thrush	NE	CONF 1	Garth N Baker	2	4.35	0.0435 1
13	17PJ19 American Robin	CF	CONF 1	Roy Smith	26	56.52	0.9348 1
13	17PJ19 Gray Catbird	NY	CONF 1	Susanne K. Stam	9	19.57	0.2174 1
13	17PJ19 Northern Mockingbird	S	POSS 1	Garth N Baker			
13	17PJ19 Brown Thrasher	CF	CONF 1				
13	17PJ19 European Starling	CF	CONF 1	Burke Korol	26	56.52	5.9565 1
13	17PJ19 Cedar Waxwing	V	PROB 1	Kevin R Shackleton	6	13.04	0.2826 1
13	17PJ19 Blue-winged Warbler	H	POSS 1				
13	17PJ19 Blue-winged/Golden-winged Warbler	S	POSS 1	Kevin R Shackleton			
13	17PJ19 Nashville Warbler	T	PROB 1				
13	17PJ19 Yellow Warbler	CF	CONF 1	Ron Fleming	14	30.43	0.4348 1
13	17PJ19 Chestnut-sided Warbler	CF	CONF 1		1	2.17	0.0217 1
13	17PJ19 Magnolia Warbler	T	PROB 1				
13	17PJ19 Yellow-rumped Warbler	T	PROB 1				
13	17PJ19 Black-throated Green Warbler	T	PROB 1				

13	17PJ19 Pine Warbler	A	PROB 1		2	4.35	0.087	1
13	17PJ19 Cerulean Warbler	H	POSS 1					
13	17PJ19 Black-and-white Warbler	A	PROB 1					
13	17PJ19 American Redstart	T	PROB 1	Susanne K. Stam	1	2.17	0.0435	1
13	17PJ19 Ovenbird	T	PROB 1	Garth N Baker	3	6.52	0.1304	1
13	17PJ19 Northern Waterthrush	T	PROB 1	Garth N Baker				
13	17PJ19 Mourning Warbler	T	PROB 1					
13	17PJ19 Common Yellowthroat	FY	CONF 1	Kevin R Shackleton	13	28.26	0.4348	1
13	17PJ19 Canada Warbler	T	PROB 1					
13	17PJ19 Eastern Towhee	H	POSS 1					
13	17PJ19 Chipping Sparrow	FY	CONF 1		8	17.39	0.2391	1
13	17PJ19 Clay-colored Sparrow	T	PROB 1	Kevin R Shackleton				
13	17PJ19 Field Sparrow	CF	CONF 1	Ron Fleming	2	4.35	0.0435	1
13	17PJ19 Vesper Sparrow	CF	CONF 1		3	6.52	0.0652	1
13	17PJ19 Savannah Sparrow	CF	CONF 1		16	34.78	0.7174	1
13	17PJ19 Song Sparrow	FY	CONF 1		33	71.74	1.1957	1
13	17PJ19 Swamp Sparrow	CF	CONF 1		8	17.39	0.5217	1
13	17PJ19 White-throated Sparrow	CF	CONF 1		2	4.35	0.0652	1
13	17PJ19 Scarlet Tanager	T	PROB 1		2	4.35	0.0652	1
13	17PJ19 Northern Cardinal	CF	CONF 1		7	15.22	0.1739	1
13	17PJ19 Rose-breasted Grosbeak	CF	CONF 1		4	8.7	0.1304	1
13	17PJ19 Indigo Bunting	CF	CONF 1		11	23.91	0.3696	1
13	17PJ19 Bobolink	CF	CONF 1	Susanne K. Stam	3	6.52	0.3478	1
13	17PJ19 Red-winged Blackbird	FY	CONF 1	2 atlasers	25	54.35	1.3913	1
13	17PJ19 Eastern Meadowlark	CF	CONF 1		5	10.87	0.1522	1
13	17PJ19 Common Grackle	CF	CONF 1	Susanne K. Stam	18	39.13	0.8043	1
13	17PJ19 Brown-headed Cowbird	FY	CONF 1		14	30.43	0.6304	1
13	17PJ19 Baltimore Oriole	CF	CONF 1	Garth N Baker	7	15.22	0.1739	1
13	17PJ19 Purple Finch	H	POSS 1					
13	17PJ19 House Finch	FY	CONF 1	Susanne K. Stam				
13	17PJ19 American Goldfinch	CF	CONF 1		27	58.7	1.1304	1
13	17PJ19 House Sparrow	FY	CONF 1		6	13.04	0.1957	1

[New data summary](#)
[Download results](#)

Disclaimer: If you wish to use the data in a publication, research or for any purpose, or would like information concerning the accuracy and appropriate uses of these data, read the [data use policy and request form](#). These data are current as of 11 Jun 2015 .

LEGEND	
<b>Breeding Evidence</b>	<b>Point Counts</b>
Max BE: Highest Breeding Evidence recorded	#PC: Number of Point Counts with species
Categ: Highest Breeding Category recorded (OBS=observed, POSS=possible, PROB=probable, CONF=confirmed)	%PC: Percent of Point Counts with species
#Sq: Number of squares with species (Breeding Evidence)	Abun: Average number of birds per Point Count
Atlasser name: Name of atlasser who reported the highest breeding evidence (if they accepted that their name be displayed). If more than one person provided the same breeding evidence code, then only the number of atlasers is listed.	#Sq: Number of squares with species (Point Counts)

 Site hosted by [Bird Studies Canada](#)

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**APPENDIX F**

**LSRCA Background Fisheries Information**

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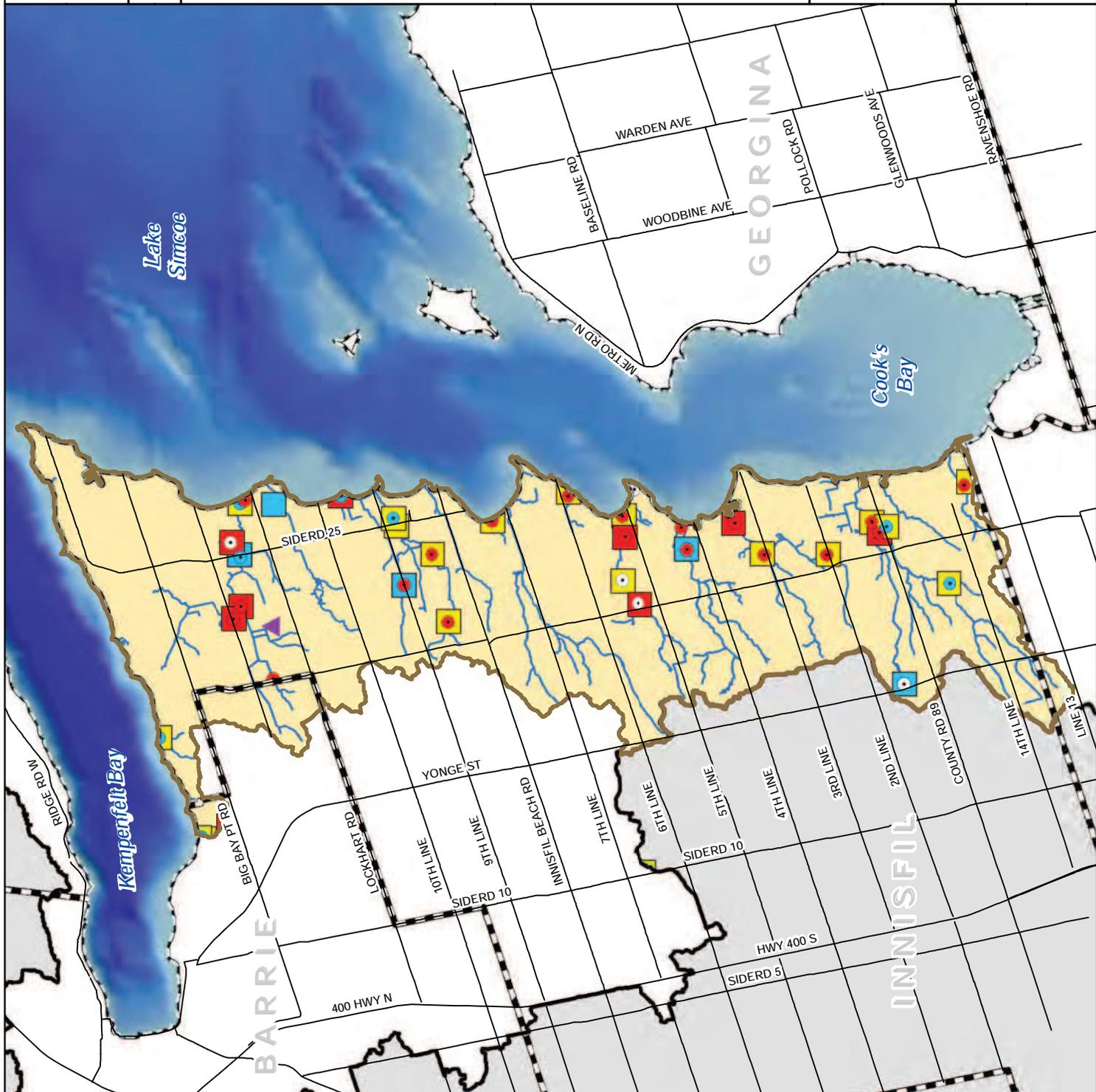
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Occurrence of fish communities in relation to measured in-stream water temperature in the Innisfil Creeks subwatershed.

Figure 5-2

**Legend**

-  Dam
- Fish**
  -  Cold
  -  No Fish
  -  Warm
- Temperature**
  -  Cold
  -  Cool
  -  Warm
-  Road
-  Municipal Boundary
-  Watercourse



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Ecological integrity of stream sites  
based on fish community conditions  
assessed using an Index of  
Biotic Intergrity (IBI)

Figure 5-3

**Legend**

Index of Biotic Integrity

- Very Good
- Good
- Fair
- Poor
- No Fish

— Road

— Municipal Boundary

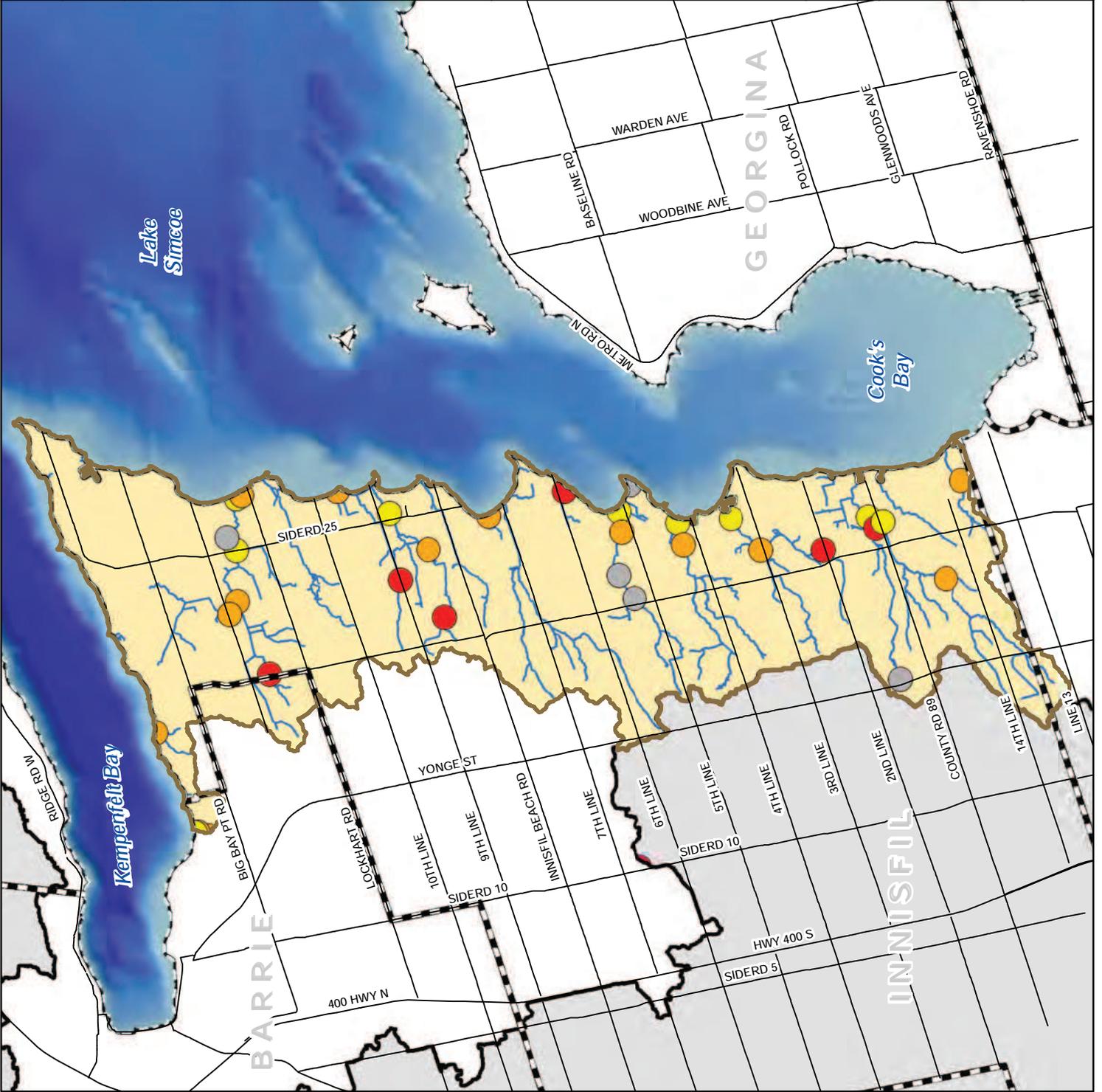
~ Watercourse



Lake Simcoe  
Region  
Conservation  
Authority



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# Historic and current presence of mottled sculpin in the Innisfil Creeks subwatershed

## Figure 5-5

### Legend

-  Road
-  Municipal Boundary
-  Watercourse
-  Current Mottled Sculpin
-  Historic Mottled Sculpin



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# Thermal degradation in the Innisfil Creeks subwatershed.

Figure 5-9

**Legend**

- Road
- Municipal Boundary

**Timing Restrictions**

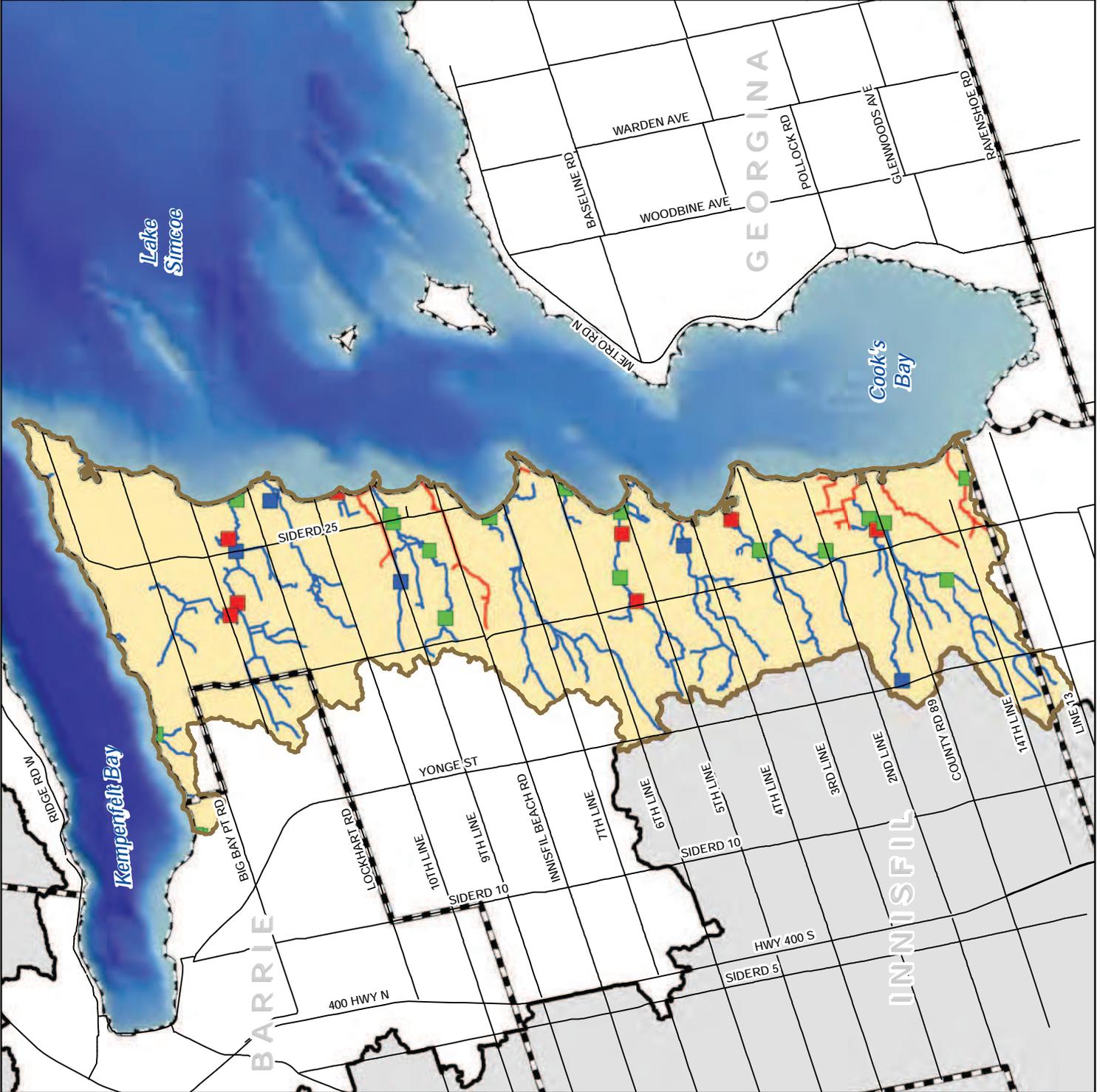
- October 1 to June 1
- March 1 to June 30
- April 1 to June 30

**Current Temperature**

- Cold
- Cool
- Warm



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# Barriers to fish movement in the Innisfil Creeks subwatershed.

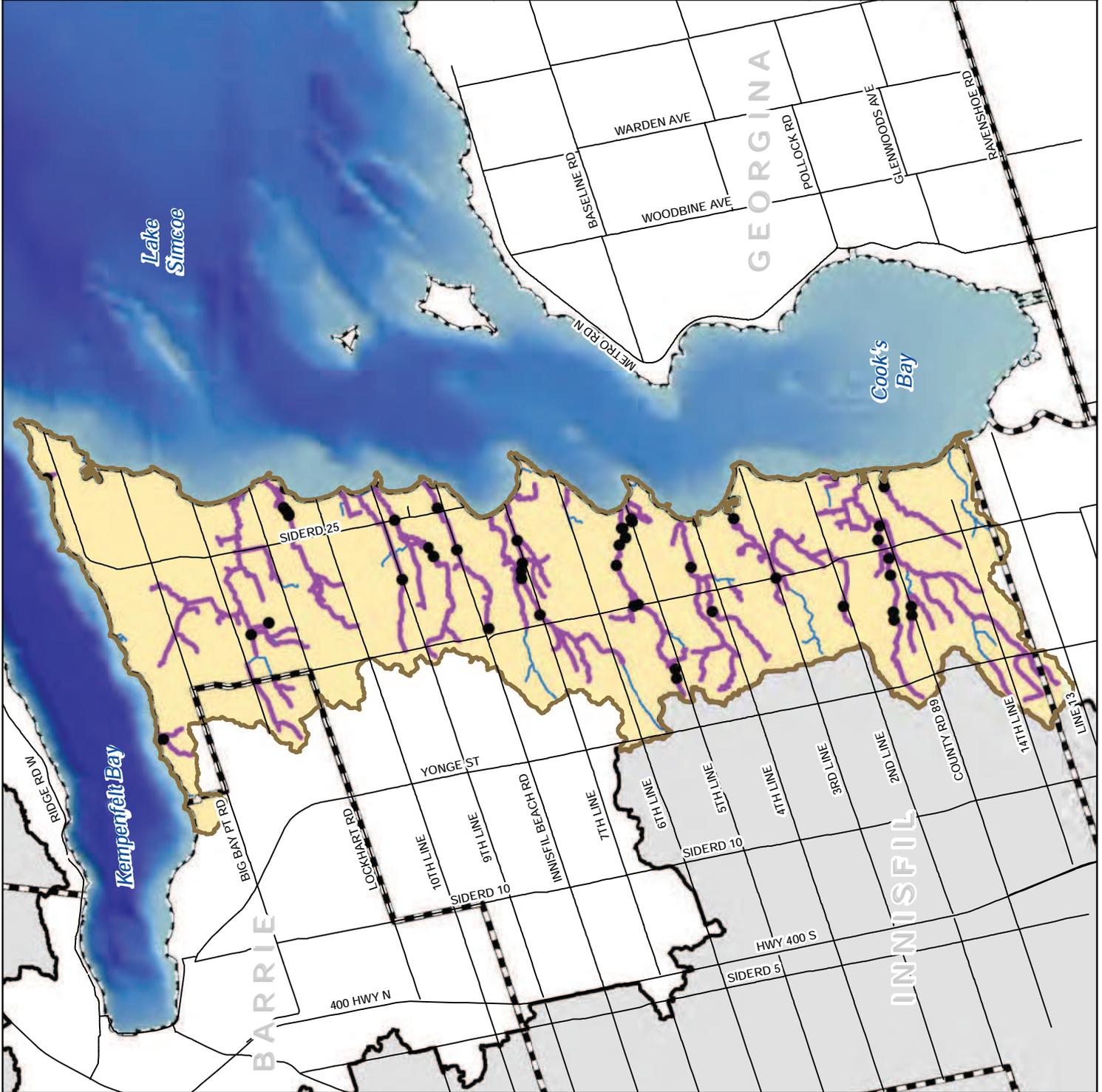
Figure 5-10

**Legend**

- Barrier
- Road
- ▬ Municipal Boundary
- ~ BMP Watercourse Surveyed
- ~ Watercourse



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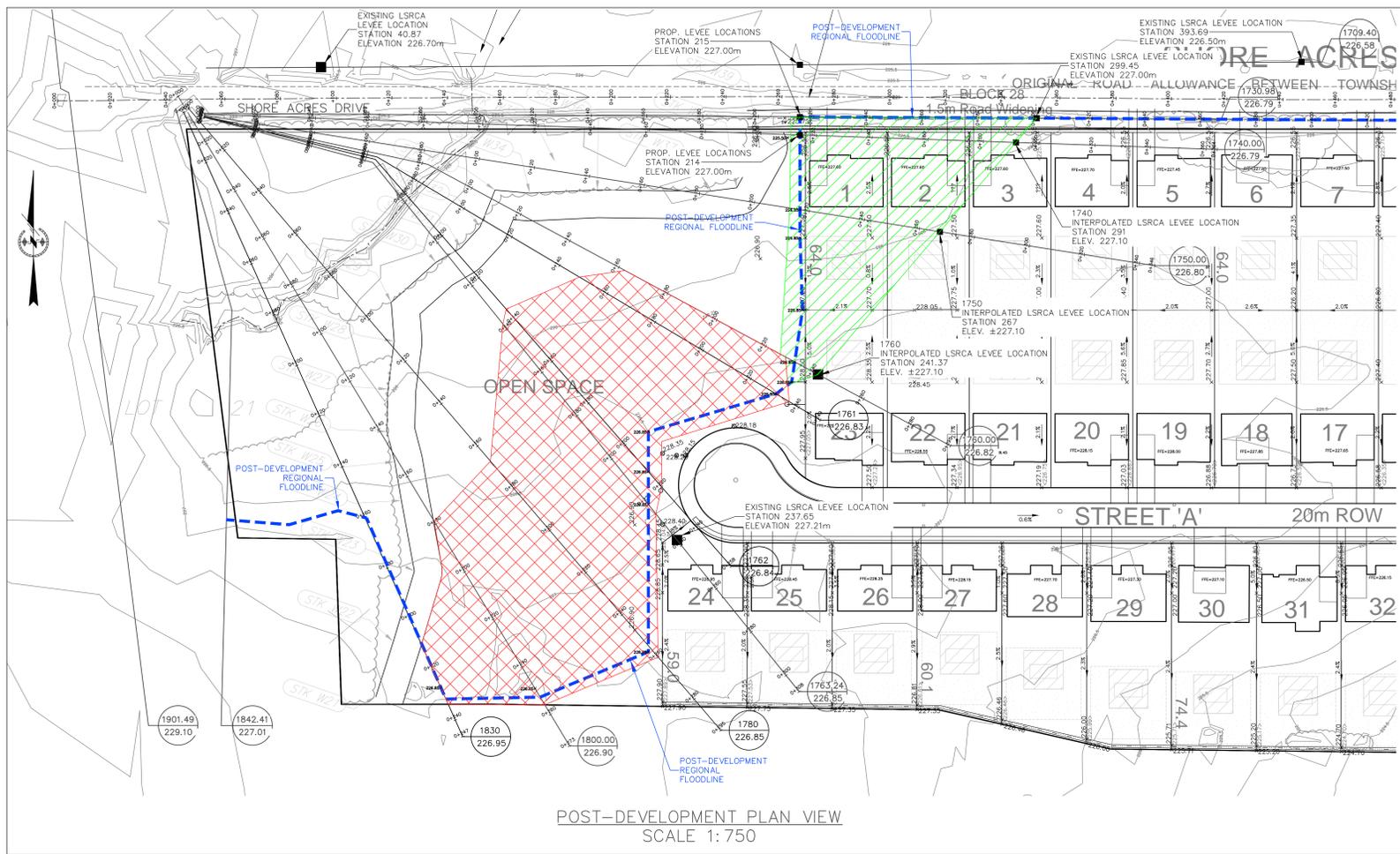
**APPENDIX F**

**LSRCA Background Fisheries Information**

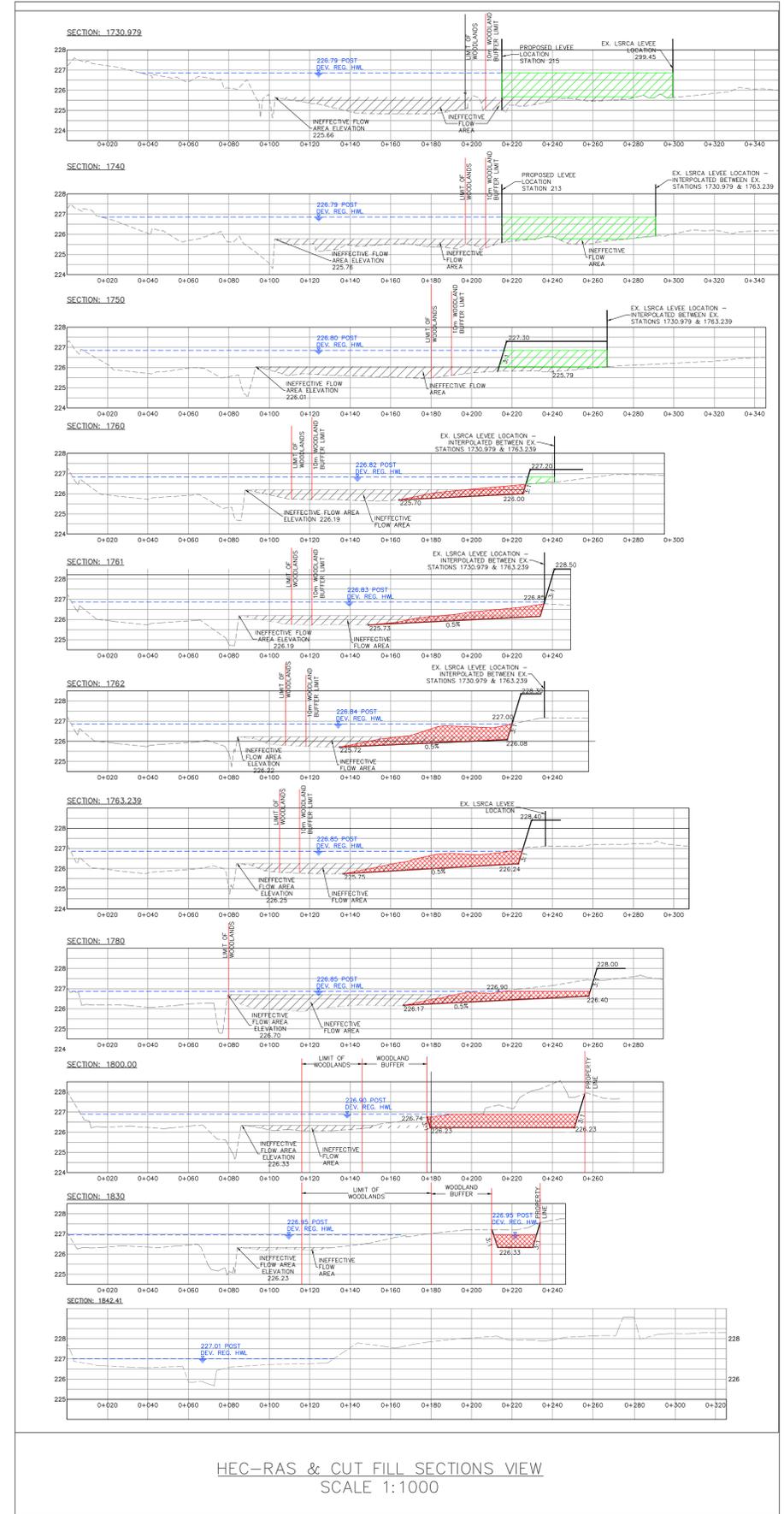
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POST-DEVELOPMENT PLAN VIEW  
SCALE 1:750



HEC-RAS & CUT FILL SECTIONS VIEW  
SCALE 1:1000

KEY PLAN

**SHORE ACRES  
RESIDENTIAL DEVELOPMENT**

TOWN OF INNISFIL  
SIMCOE COUNTY

**FLOODPLAIN MODIFICATION PLAN**

No.	Date	By	REVISIONS

a.m.c.ondras associates inc.  
consulting engineers  
8054 Weston rd., Suite 203  
Woodbridge ont. L4L 9R4  
905-850-8020 Fax 905-850-8099  
Email: civil@amci.com

SCALE: 1:1000 DATE: AUGUST 2019 PROJ. NO. 1848  
DRAWN: Z.S.S. CHKD: A.M.C. PLAN NO.  
DESIGNED: A.M.C. SHEET 1 OF 1 **F1**

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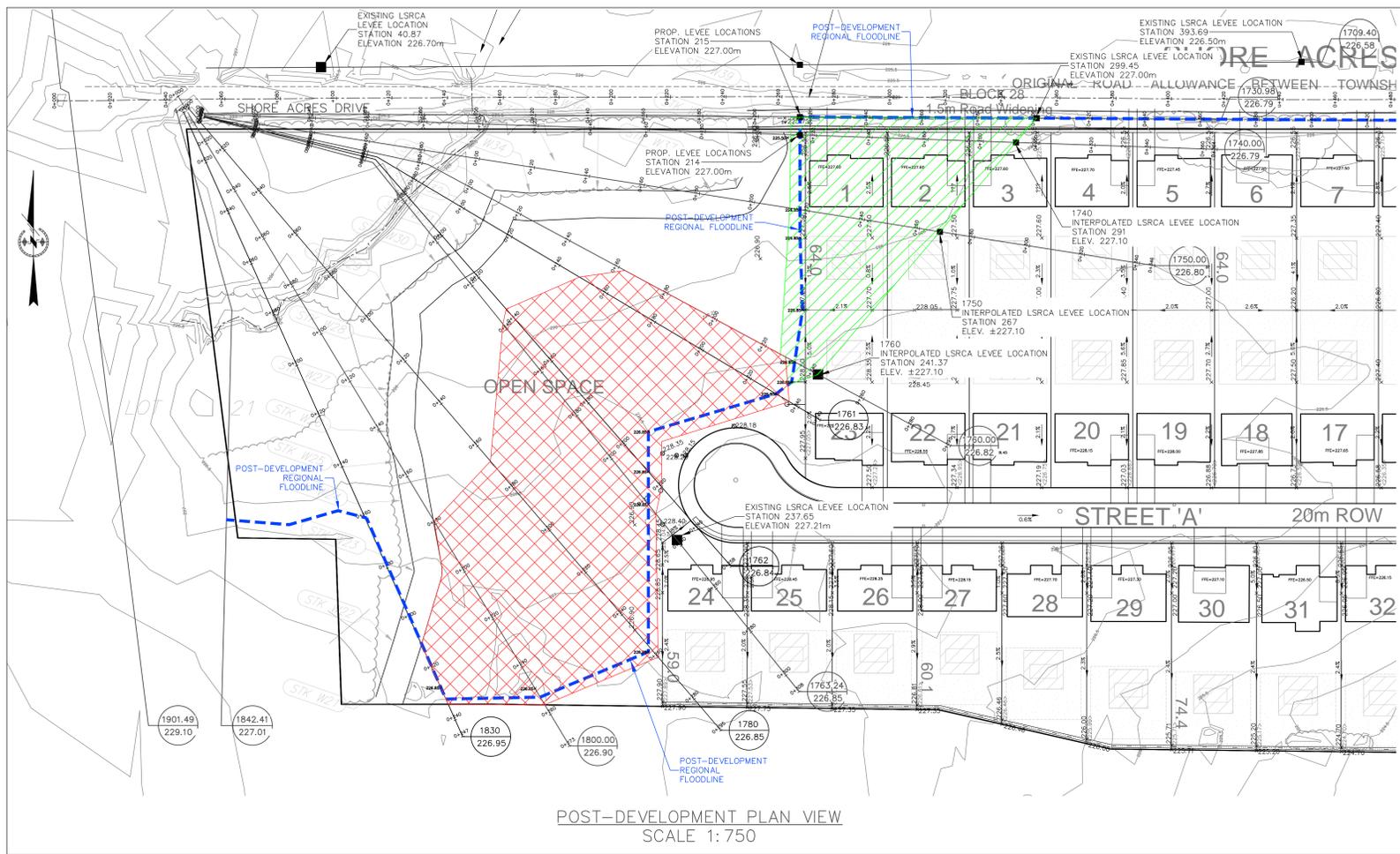
**APPENDIX G**

**Proposed Development Concept and Floodplain Modification Plan**

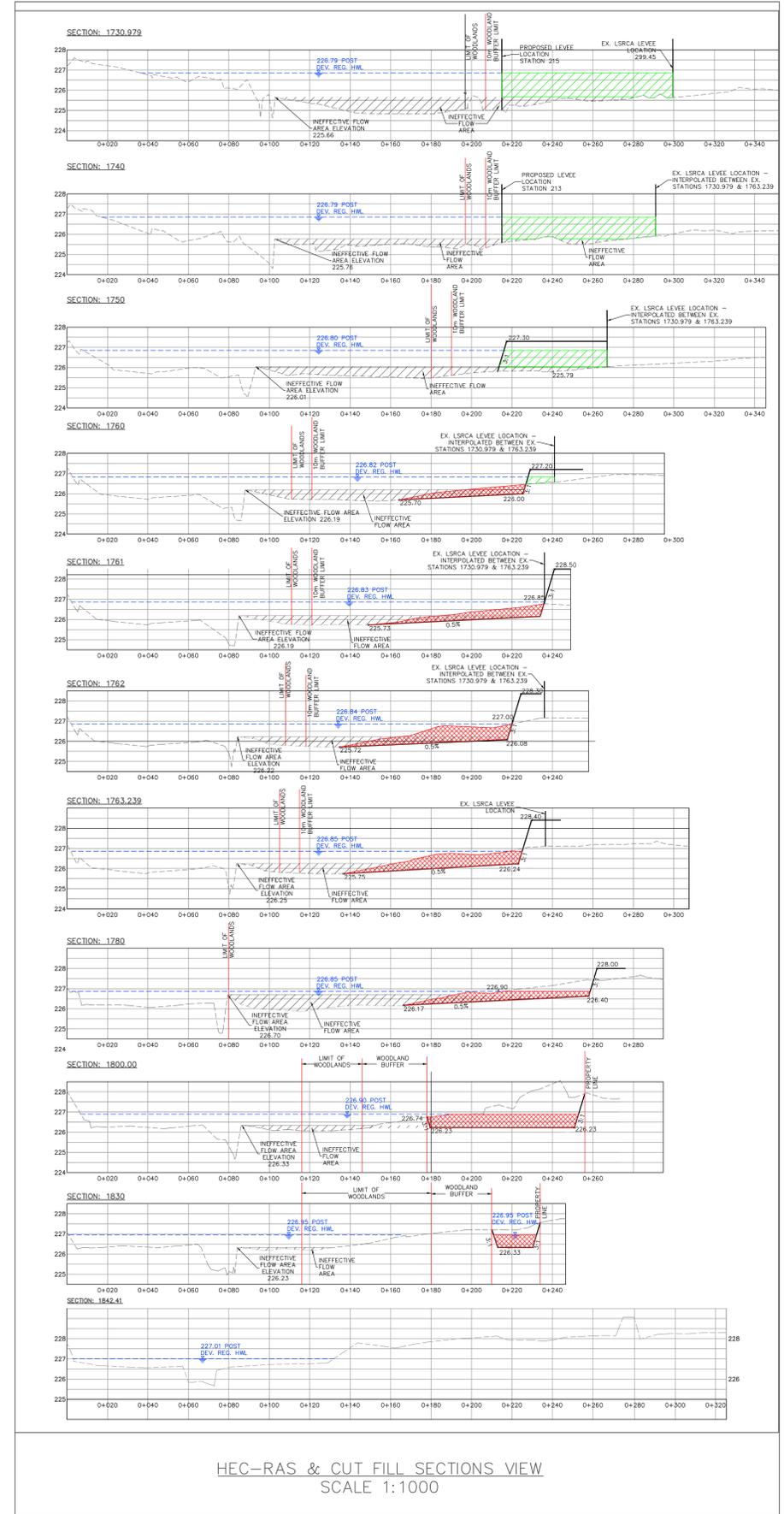
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POST-DEVELOPMENT PLAN VIEW  
SCALE 1:750



HEC-RAS & CUT FILL SECTIONS VIEW  
SCALE 1:1000

KEY PLAN

**SHORE ACRES  
RESIDENTIAL DEVELOPMENT**

TOWN OF INNISFIL  
SIMCOE COUNTY

**FLOODPLAIN MODIFICATION PLAN**

No.	Date	By	REVISIONS

a.m.c.ondras associates inc.  
consulting engineers  
8054 Weston rd., Suite 203  
Woodbridge ont. L4L 9R4  
905-850-8020 Fax 905-850-8099  
Email: civil@amci.com

SCALE: 1:1000 DATE: AUGUST 2019 PROJ. NO. 1848  
DRAWN: Z.S.S. CHKD: A.M.C. PLAN NO.  
DESIGNED: A.M.C. SHEET 1 OF 1 **F1**