Species at Risk Screening

Hewitt's Secondary Plan Area

961 Big Bay Point Road, City of Barrie

Prepared for:
Alky Poulias

Prepared by:
Azimuth Environmental
Consulting, Inc.

June 2017

AEC 17-161

AZIMUTH ENVIRONMENTAL CONSULTING, INC.
Environmental Assessments & Approvals

June 22, 2017 AEC 17-161

961 Big Bay Ltd. c/o
Poulias Development Consulting Inc.
93 McIntyre Ct.
Newmarket ON
L3Y 8B9

ATTN: Alky Poulias

Re: **Species at Risk Screening for a Proposed Development**
Hewitt's Secondary Plan Area
961 Big Bay Point Road, City of Barrie

Dear Mr. Poulias:

Azimuth Environmental Consulting, Inc. (Azimuth) is pleased to submit our Species at Risk (SAR) screening for the property described above.

According to the City of Barrie's Secondary Plan for the Barrie Annexed Lands, there are no environmental features on the property that are within the Natural Heritage Core or Linkage Areas. Based on this information, Azimuth assessed this property for the potential presence of SAR only. This SAR Screening is based on a review of background information and site specific studies conducted in May 2017 and species designations under Ontario's *Endangered Species Act*, 2007.

If you have any questions or require further information, please do not hesitate to contact us.

Yours truly,
AZIMUTH ENVIRONMENTAL CONSULTING, INC.

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1.0 INTRODUCTION

Azimuth Environmental Consulting, Inc. (Azimuth) was retained by Poulias Development Consulting Inc. to prepare a Species at Risk (SAR) Screening for a property located on 961 Big Bay Point Road, City of Barrie (City) (Figure 1). These lands have been identified as future development lands for the City of Barrie and the SAR Screening is required by the City as part of the required submission package for Draft Plan approvals.

2.0 STUDY APPROACH

The following activities were undertaken for our SAR Screening:

- Obtained background information regarding SAR records of the area from the 2012 Natural Heritage Characterization (NHC) Report;
- Conducted dawn breeding bird survey on May 31, 2017 to identify the potential for SAR birds to occur on the property;
- Conducted a search of hedgerows and forest communities for Butternut on May 31, 2017;
- Conducted a search of anthropogenic structures for evidence of SAR habitat features including a search for Barn Swallow nests on structure surfaces, search of external surfaces for potential access points for SAR bats, search within structures (including attics, where accessible) for access points and evidence of wildlife use on May 31, 2017;
- Conducted detailed mapping of snag/cavity trees as per the *Technical Note: Species at Risk (SAR) Bats* produced by the MNRF during "leaf-off" conditions (*i.e.* March 2017) within the FOC community;
- Evaluated vegetation communities, using protocols of the Ecological Land Classification (ELC) for Southern Ontario;
- Recorded other wildlife observations while on-site; and
- Reviewed the habitat types used by the SAR potentially occurring in the area and determined if the habitat available on or adjacent to the property provide potential habitat for SAR. SAR are considered to be those listed as Endangered (END), Threatened (THR) or Special Concern (SC) under Ontario's *Endangered Species Act*, 2007 (ESA).

2.1 Study Area

The 'property' refers to the entire assessment parcel on which development is being proposed, located at 961 Big Bay Point Road. This study may refer to 'adjacent lands',

which include lands directly adjacent to the perimeter of the subject property. Adjacent lands may be pertinent when certain natural heritage features and functions are dependent on the contiguous natural cover beyond the boundaries of the subject property.

3.0 BACKGROUND

Natural Resource Solutions Inc. was retained by the City of Barrie to prepare a Natural Heritage Characterization (NHC) Report (2012) as the natural heritage component of the Hewitt's Secondary Plan for the Barrie Annexed Lands. As a part of the NHC, the Ministry of Natural Resources and Forestry (MNRF) was consulted to determine SAR that have the potential to reside within the general area. Therefore any SAR that have the potential to occur within the area and their preferred habitat were screened to determine whether there is potentially suitable habitat associated with the property for these species (Table 1).

4.0 EXISTING CONDITIONS

4.1 On-site Conditions

The property is accessible via a driveway that is accessed from Big Bay Point Road. There are several anthropogenic structures on the property including an unoccupied single residential dwelling located centrally on the property, a garage situated behind the dwelling to the south, and three storage sheds located along the southern and western property boundary. The remainder of the property is largely un-maintained lawn. Treed hedgerows separate the property from adjacent lots. A coniferous forest community is present on the southern portion of the property.

4.2 Vegetation

Three vegetation communities were identified on the property: Dry-Fresh White Pine-Red Pine Coniferous Forest Type (FOC1-2), Maintained Lawn/ Dry-Moist Old Field Meadow Type/Maintained Lawn (CUM1-1) and hedgerow (Figure 2, Table 2).

FOC1-2 Dry-Fresh White Pine-Red Pine Coniferous Forest Type

This community has a canopy of mature White Pine with limited understory layers. The sub-canopy consists primarily of Sugar Maple and American Basswood. Sparsely scattered low shrubs include Choke Cherry and Prickly Wild Gooseberry. Prominent species of ground flora include Wild Lily-of-the-Valley, Herb Robert and Virginia Creeper. Floristically, this community – like all others on the property - is of low quality, with a species mix that is reflective of long-term, ongoing disturbance.

CUM1-1 Dry-Moist Old Field Meadow Type/Maintained Lawn

This community is un-maintained lawn that is transitioning into a Cultural Meadow. Grass cover includes Canada Bluegrass and Orchard Grass, with a mix of primarily exotic forbs, including Thyme-leaved Speedwell, Sheep Sorrel, Black Medic, Bitter Wintercress, and Red Clover.

Hedgerow

The western hedgerow contains a mix of tree species, including several mature Red Cedar and some mix hardwood species, with ground cover that is mostly consistent with the maintained lawn. The eastern hedgerow contains a row of tall White Pine with interspersed maturing hardwoods. The composition of this community is very similar to the FOC1-2 community at the property's south end.

4.3 **Birds**

A dawn breeding bird survey was conducted on May 31, 2017. During this survey a total of 12 bird species were documented (Table 3).

None of the bird species documented during these surveys are SAR.

4.4 **Bats**

Azimuth staff conducted an assessment to identify potential maternity roost habitat for END bats within the FOC and anthropogenic structures on the property on May 31, 2017 (Figure 2). The wooded area located on the southern portion of the property was surveyed following Step 5 of the *Technical Note: Species at Risk (SAR) Bats* (MNRF protocol) to identify the presence of potential maternity roost habitat within snag trees. For this assessment, a "snag" was defined as a standing dead or dying tree, and any tree that has a crack, hole, crevice or cavity with a diameter at breast height (DBH) of 25cm or greater. All trees matching the definition of a snag were plotted using a Global Positioning System (GPS) and appropriate data as outlined within Step 3 of the MNRF protocol were collected.

Two snag trees were mapped on the subject property, as illustrated in Figure 2, through the detailed mapping exercise including:

- A 28cm DBH European Cherry, considered Decay Class 5 with defining features located below 10m;
- A 31cm DBH White Pine, considered Decay Class 4 with defining features including loose bark and holes above 10m;

Based on this information there is potential for END bats to potentially utilize the property.

The anthropogenic structures on the property including the residential dwelling, garage and storage sheds were surveyed following MNRF's 2015 *Technical Note: Species at Risk (SAR) Bats Maternity Roost Surveys (Anthropogenic Structures)* protocol. The external surfaces of the residence and garage were searched for holes or spaces which bats may utilize to access the interior of the buildings. The attic and interior of the residence, as well as the interior of the garage and the storage sheds were searched for bats and evidence of bats. There were no bats or evidence of bats observed within any of the anthropogenic structures nor were there any obvious access points noted (Attachment 1, Photographs 1-4).

5.0 PROPOSED DEVELOPMENT

As indicated above, the property is within the Hewitt's SPA. Proposed development on site includes residential development with mixed use (Figure 3).

6.0 SPECIES AT RISK ASSESSMENT

Based on our preliminary SAR screening (Table 1) and field studies completed for the property and background information collected for Hewitt's SPA, the following species were identified as potentially having appropriate habitat on site:

- Birds: Barn Swallow, Chimney Swift, Eastern Wood-pewee and Red-headed Woodpecker; and
- Bats: Little Brown Myotis, Northern Myotis and Tri-colored Bat.

6.1 **Barn Swallow**

Barn Swallow is listed as THR under the ESA and thus receives individual and General Habitat protection. Barn Swallow typically nest along ledges and walls of man-made structures such as buildings, barns, boathouses, cliffs or caves. Although potential nesting habitat exists within the anthropogenic structures on the property, no nests were observed during the site visit on May 31, 2017. Additionally, there were no Barn Swallow's documented during Azimuth's dawn breeding bird survey.

Care is recommended while working in areas where these species have the potential to occur. Please refer to Section 7.2.

6.2 **Chimney Swift**

Chimney Swift is listed as THR under the ESA and thus receives individual and General Habitat protection. Chimney Swifts will typically nest in a dark, sheltered spot with vertical surfaces that it can grip onto and attach its nest. Artificial structures such as chimneys are commonly used as nesting habitat for Chimney Swift (COSEWIC, 2007g). During the site visit on May 31, 2017, it was noted that there is no suitable habitat on the property for this species. The chimney on the residence is too small and does not provide a suitable surface for nesting. The capped chimney on the garage is not accessible to wildlife (Attachment 1, Photographs 2, 4). Additionally, Chimney Swift was not documented during Azimuth's dawn breeding bird survey.

6.3 **Eastern Wood-pewee and Red-headed Woodpecker**

These two SC bird species are known to occur within the general area. None of these species were documented during Azimuth's dawn breeding bird surveys.

While SC species do not receive protection under the ESA, 2007, care is recommended while working in areas where these species have the potential to occur. Tree removal should be restricted from occurring during the breeding bird season. Please refer to Section 7.3 below.

6.4 **Bats**

Little Brown Myotis, Northern Myotis and Tri-colored Bat are listed as END under the ESA. Little Brown Myotis and Northern Myotis 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. Large snag trees within second-growth forest communities may provide suitable roosting habitat for Little Brown Myotis and Northern Myotis. Tri-colored Bat also establishes maternity roosts in treed areas, specifically within live or dead foliage, as well as buildings including old houses, churches and barns (MNRF, 2015). Little Brown Myotis, Northern Myotis and Tri-colored Bat all receive individual and General Habitat protection.

The END bat species identified with potential to occur on the property are known to utilize decaying, large diameter trees (>25cm diameter at breast height) for maternity roosts during the summer to raise their young. Within a maternity season, bats frequently move pups among cavity trees. Between seasons, cavity trees, which are typically

large/old and decrepit individuals, are subject to natural tree fall and therefore at the outset of each maternity season, bats must select roosting habitat among standing trees that persist from one year to the next. A given cavity tree is not consistently or predictably "habitat" from one year to the next. As these species are listed as END under the ESA, the species and their habitat are protected from harm or destruction.

Potential maternity roost habitat was identified in two snag trees located within the coniferous forest on the southern portion of the property (Figure 2).

As per MNRF guidelines, the best candidate roost trees are selected according to the following criteria:

- Tallest snag/cavity tree;
- Exhibits cavities or crevices;
- DBH >25cm;
- Is within a cluster of snags;
- Cavity or crevice is high in snag/cavity tree (>10m);
- Canopy is more open; and
- Exhibits early stages of decay (*i.e.* decay class 1-3).

The proposed development includes the portion of the coniferous forest community that extends onto the property. Results obtained through the bat snag mapping exercise indicates that that there are two potentially suitable trees present within the coniferous forest community on the property that may provide roosting habitat for bats (Figure 2). Figure 2 highlights the two potential snag trees identified on site and includes descriptors to depict which trees may be favoured by bats. Based on MNRF's criteria highlighted above, only one of the trees had snag features which would be considered preferable maternity roost habitat (*i.e.* >10m) but was in an advanced stage of decay (decay class 4).

No bats or evidence of bats was documented within the anthropogenic structures during Azimuth's bat surveys.

Recommendations related to the timing of tree removal should be adhered to and is discussed below. Based on this information, the proposed works are not expected to result in a contravention of the ESA as it relates to habitat of END or THR species, provided that the environmental considerations and mitigation measures described in this section of the report are adhered to. Timing windows for vegetation clearing are proposed to avoid accidental contraventions of the ESA associated with incidental bat use of the property.

7.0 RECOMMENDATIONS

7.1 Species at Risk - General

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

7.2 Barn Swallow

It is recommended that the surface of the anthropogenic structures on site be searched for evidence of Barn Swallows and/or nests prior to structural demolition. Should a nest be encountered, MNRF should be contacted to determine how to proceed in compliance with Ontario's ESA.

7.3 Migratory Breeding Birds including Special Concern Bird Species

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

In Zone C2 vegetation clearing should be avoided between April 1st through August 31st of any given year. If work requires that vegetation clearing is to be done between these dates, screening by an ecologist with knowledge of bird species present in the area should be undertaken to ensure that the risk to impacting nesting birds has been evaluated and assumed to be low to non-existent.

7.4 Endangered Bats

Any tree removal should be done outside the active bat maternity roosting (mid-May through mid to late August).

8.0 CONCLUSION

Our assessment has given full consideration of the habitat requirements of all SAR assumed and documented to occur in the general area. Our investigation revealed that the proposed development will not have negative impacts on species listed under the Ontario ESA, 2007, nor is it expected to result in negative direct or indirect impacts to habitat of END or THR species compliant with the ESA.

9.0 REFERENCES

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

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COSEWIC. 2010c. COSEWIC assessment and status report on the Monarch *Danaus plexippus* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. vii + 43 pp.

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Common Name	Species Name	MNRF	SARA	Key Habitats Used By Species[1]	Initial Assessment
Restricted Species	*Not Applicable*	END	END	Broadly speaking, this species is associated with hardwood deciduous vegetation units ESA Protection: Species and regulated habitat protection	Species not expected to be present on the property. Habitat is not representative of key habitat. Species not documented during Azimuth's field investigations.
Bald Eagle	*Haliaeetus leucocephalus*	SC	No status	Nests are typically found near the shoreline of lakes or large rivers, often on forested islands (Cadman et al., 2007). ESA Protection: N/A	Habitat is not representative of key habitat. No Bald Eagles were observed during Azimuth's field investigations.
Bank Swallow	*Riparia riparia*	THR	No status	Nests in burrows excavated in natural and human-made settings with vertical sand and silt faces. Commonly found in sand or gravel pits, road cuts, lakeshore bluffs, and along riverbanks (COSEWIC, 2013c). ESA Protection: Species and general habitat protection	Habitat is not representative of key habitat. No Bank Swallow were observed during Azimuth's field investigations.
Barn Swallow	*Hirundo rustica*	THR	No status	Ledges and walls of man-made structures such as buildings, barns, boathouses, garages, culverts and bridges. Also nest in caves, holes, crevices and cliff ledges (COSEWIC, 2011d). ESA Protection: Species and general habitat protection	Potentially suitable nesting habitat on the anthropogenic structures within study area. No Barn Swallow or nests were observed during Azimuth's field investigations.
Black Tern	*Chlidonias niger*	SC	No status	Colonial nesters typically found within marshes. Its preferred nesting habitat is a hemi-marsh (*i.e*. a wetland with 50:50 open water and emergent vegetation). Nests are usually built on an upturned cattail root, floating vegetation mat or patch of mud (Cadman et al., 2007). ESA Protection: N/A	Habitat is not representative of key habitat. No Black Tern were observed during Azimuth's field investigations.
Blanding's Turtle	*Enydoidea blandingii*	THR	THR	Blanding's Turtles are a primarily aquatic species that prefer wetland habitats, lakes, ponds, slow-moving streams, etc., however they may utilize upland areas to search for suitable basking and nesting sites. In general, preferred wetland sites are eutrophic and characterized by clear, shallow water, with organic substrates and high density of aquatic vegetation (COSEWIC, 2005a). ESA Protection: Species and general habitat protection	Habitat is not representative of key habitat.
Bobolink	*Dolichonyx oryzivorus*	THR	No Status	Nests primarily in forage crops (*e.g.* hayfields and pastures) dominated by a variety of species such as clover, Timothy, Kentucky Bluegrass, tall grass, and broadleaved plants. Also occurs in wet prairie, graminoid peatlands, and abandoned fields dominated by tall grasses. Does not generally occupy fields of row crops (*e.g*. corn, soybeans, wheat) or short-grass prairie. Sensitive to habitat size and has lower reproductive success in small habitat fragments (COSEWIC, 2010b). ESA Protection: Species and general habitat protection	Habitat is not representative of key habitat. No Bobolink were observed during Azimuth's field investigations.
Broad Beech Fern	*Phygopteris hexagonoptera*	SC	SC	Rich soils in deciduous forests, such as Maple-Beech forests (MNRF, 2016). ESA Protection: N/A	Habitat is not representative of key habitat. Broad Beech Fern not documented during Azimuth's field investigations.
Butternut	*Juglans cinerea*	END	END	Commonly found in riparian habitats, but is also found in rich, moist, well-drained loams, and well-drained gravels. Butternut is intolerant of shade (COSEWIC, 2003b). ESA Protection: Species and general habitat protection	No Butternut were observed on the property.
Cerulean Warbler	*Dendroica cerulea*	THR	SC	Associated with large tracts of mature deciduous forest with tall trees and an open understorey. Found in both wet bottomland forests and upland areas (COSEWIC, 2010a).	Habitat is not representative of key habitat. Cerulean Warbler not documented during Azimuth's field investigations.
Chimney Swift	*Chaetura pelagica*	THR	THR	Nests primarily in chimneys though some populations (*i.e.* in rural northern areas) may nest in cavity trees (COSEWIC, 2007g). Recent changes in chimney design may be a significant factor in recent declines in numbers (Cadman et al., 2007). ESA Protection: Species and general habitat protection	The chimney structure on the unoccupied home does not provide suitable habitat. Chimney Swift not documented during Azimuth's field investigations.
Common Five-lined Skink (Southern Shield population)	*Plestiodon fasciatus*	SC	SC	Southern Shield population -rocky outcrops embedded in a matrix of coniferous and deciduous forest, and individuals in these populations seek refuge under rocks overlaid on open bedrock (COSEWIC, 2007a). ESA Protection: N/A	Species not expected to be present within study area. Habitat is not representative of key habitat.
Common Nighthawk	*Chordeiles minor*	SC	THR	Open habitats including sand dunes, beaches recently logged/burned over areas, forest clearings, short grass prairies, pastures, open forests, bogs, marshes, lakeshores, gravel roads, mine tailings, quarries, and other open relatively clear areas (COSEWIC, 2007d). ESA Protection: N/A	Typical habitat for this species is not present on property.
Eastern Hog-nosed Snake	*Heterodon platirhinos*	THR	THR	Habitat features include: well-drained soil; loose or sandy soil; open vegetative cover; brushland or forest edge; proximity to water; and climatic conditions typical of the eastern deciduous forest biome. In the Georgian Bay region, open grass, sand, human-impacted and forest habitats over rock, wetland, and aquatic habitats are preferable (COSEWIC, 2007b). ESA Protection: Species and general habitat protection	Species not expected to be present on property. The study area is outside of the typical range for this species.
Eastern Meadowlark	*Sturnella magna*	THR	No status	Most common in grassland, pastures, savannahs, as well as anthropogenic grassland habitats, including hayfields, weedy meadows, young orchards, golf courses, restored surface mines, *etc*. Occasionally nest in row crop fields such as corn and soybean, but there are considered low-quality habitat. Large tracts of grassland are preferred over smaller fragments and the minimum area required is estimated at 5ha (COSEWIC, 2011c). ESA Protection: Species and general habitat protection	Species not expected to be present on property. Habitat is not representative of key habitat.
Eastern Musk Turtle	*Sternotherus oderatus*	SC	THR	Inhabit littoral zones of waterways such as rivers, lakes, bays, streams, ponds, canals, and swamps with slow to no current and soft bottoms. During the active season they prefer shallow water (<2m) with abundant vegetation. Most are found close to shore and do not venture onto land except to nest or access adjacent wetlands (COSEWIC, 2012b). ESA Protection: N/A	Species not expected to be present on property. Habitat is not representative of key habitat.
Eastern Prairie Fringed-orchid	*Platanthera leucophaea*	END	END	It is a species primarily of mesic prairies, fens and old fields (COSEWIC, 2003a). ESA Protection: Species and general habitat protection	Habitat is not representative of key habitat. Eastern Prairie Fringed-orchid not documented during Azimuth's field investigations.
Eastern Ribbonsnake	*Thamnophis sauritus*	SC	SC	Found in wetland habitats with both flowing and standing water such as marshes, bogs, fens, ponds, lake shorelines and wet meadows. Most sightings occur near the water's edge (COSEWIC, 2012c). ESA Protection: N/A	Species not expected to be present on property. Habitat is not representative of key habitat.
Eastern Small-footed Myotis	*Myotis Lleibii*	END	END	Generally occurs in mountainous or rocky regions as well as in buildings, on the face of rock bluffs and beneath slabs of rock and stones. Hibernation is typically confined to caves and old mines (Best and Jennings, 1997). ESA Protection: Species and general habitat protection	Species not expected to be present on property. Habitat is not representative of key habitat.
Eastern Whip-poor-will	*Antrostomus vociferus*	THR	THR	Semi-open forests or patchy forests with clearings, such as barrens or forests that are regenerating following major disturbances, are preferred nesting habitats (COSEWIC, 2009a). ESA Protection: Species and general habitat protection	Species not expected to be present on property. Habitat is not representative of key habitat.

Common Name	Species Name	MNRF	SARA	Key Habitats Used By Species[1]	Initial Assessment
Eastern Wood-pewee	*Contopus virens*	SC	No status	Mostly in mature and intermediate-age deciduous and mixed forests having an open understorey. It is often associated with forests dominated by Sugar Maple and oak. Usually associated with forest clearings and edges within the vicinity of its nest (COSEWIC, 2012e). ESA Protection: N/A	Habitat is not representative of key habitat. Eastern Wood-pewee not documented during Azimuth's field investigations.
Golden-winged Warbler	*Vermivora chrysoptera*	SC	THR	Areas of early successional scrub surrounded by mature forests including dry uplands, swamp forests, and marshes (COSEWIC, 2006a). ESA Protection: N/A	Habitat is not representative of key habitat. Golden-winged Warbler not documented during Azimuth's field investigations.
Grasshopper Sparrow *pratensis* subspecies	*Ammodramus savannarum pratensis*	SC	No status	Typically breeds in large human-created grasslands (≥5 ha), such as pastures and hayfields, and natural prairies, such as alvars, characterized by well-drained, often poor soil dominated by low, sparse perennial herbaceous vegetation (COSEWIC, 2013d). ESA Protection: N/A	Habitat is not representative of key habitat. Grasshopper Sparrow not documented during Azimuth's field investigations.
Hart's-tongue Fern	*Asplenium scolopendrium* var. *americanum*	SC	SC	Grows on calcareous rocks in deep shade on slopes in deciduous forest. Most occurrences are in maple-beech forest (MNRF, 2016).	Habitat is not representative of key habitat. Hart's-tongue Fern not documented during Azimuth's field investigations.
Henslow's Sparrow	*Ammodramus henslowii*	END	END	Requires grassland habitat and occurs more frequently and at higher densities in large patches of suitable habitat. Nests in tallgrass prairie, wet meadow, and marsh habitats as well as agricultural grasslands, lightly grazed pasture and grasslands on reclaimed surface mines (COSEWIC, 2011a). ESA Protection: Species and general habitat protection	Habitat is not representative of key habitat. Henslow's Sparrow not documented during Azimuth's field investigations.
Hine's Emerald	*Somatochlora hineana*	END	No status	Restricted to calcareous wetlands (marshes, sedge meadows, and fens) dominated by graminoid vegetation and fed primarily by groundwater from intermittent seeps (COSEWIC, 2011e). ESA Protection: Species and general habitat protection	Species not expected to be present on property. Habitat is not representative of key habitat.
King Rail	*Rallus elegans*	END	END	Wide variety of freshwater marsh habitat types with cattails. Large marshes, especially those that contain a range of water level conditions and a mosaic of habitats, are preferred (COSEWIC, 2011b). ESA Protection: Species and general habitat protection	Habitat is not representative of key habitat. King Rail not documented during Azimuth's field investigations.
Lake Sturgeon (Great Lakes - Upper St. Lawrence populations)	*Acipenser fulvescens*	THR	No status	Generally found in the shallow areas of lakes or larger rivers, moving into smaller rivers to spawn. Usually found at depths of 5 -10 m and are in areas where water velocity does not exceed 70 cm/sec (COSEWIC, 2006b). ESA Protection: Species and general habitat protection	Habitat is not representative of key habitat.
Least Bittern	*Ixobrychus exilis*	THR	THR	Breed strictly in marshes of emergents (usually cattails) that have relatively stable water levels and interspersed areas of open water (COSEWIC, 2009b). ESA Protection: Species and general habitat protection	Habitat is not representative of key habitat. Least Bittern not documented during Azimuth's field investigations.
Little Brown Myotis	*Myotis lucifugus*	END	END	Forests and regularly aging human structures as maternity roost sites. Regularly associated with attics of older buildings and barns for summer maternity roost colonies. Overwintering sites are characteristically mines or caves, but can often include buildings (MNRF, 2014) (COSEWIC, 2013b). ESA Protection: Species and general habitat protection	Potentially suitable habitat within study area in the FOC community and structures. Northern Myotis not documented during Azimuth's field investigations.
Loggerhead Shrike	*Lanius ludovicianus*	END	END (*mirgrans* subspecies)	Breeding habitat characterized by open areas dominated by grasses and/or forbs, interspersed with scattered shrubs or small trees and bare ground. Suitable habitat includes pasture, old fields, prairie, savannah, pinyon-juniper woodland, shrub-steppe and alvar (COSEWIC, 2014a). ESA Protection: Species and general habitat protection	Habitat is not representative of key habitat. Loggerhead Shrike not documented during Azimuth's field investigations.
Louisiana Waterthrush	*Parkesia motacilla*	THR	SC	Occupies specialized habitat, showing a strong preferences for nesting and wintering along relatively pristine headwater streams and wetlands situated in large tracts of mature forest. Prefers running water, but also inhabits heavily wooded swamps and vernal or semi-permanent pools (COSEWIC, 2015a). ESA Protection: N/A	Habitat is not representative of key habitat. Louisiana Waterthrush not documented during Azimuth's field investigations.
Massasauga (Great Lakes - St. Lawrence population)	*Sistrurus catenatus*	THR	THR	In Georgian Bay, Massasaugas use bedrock barrens, conifer swamps, beaver meadows, fens, bogs, and shoreline habitats. On the upper Bruce Peninsula, forested habitats are used during hibernation and open, wetland, and edge habitat with canopy closure <50% in mid-late summer (COSEWIC, 2012a). ESA Protection: Species and general habitat protection	Species not expected to be present on property. The study area is outside of the typical range for this species.
Monarch	*Danaus plexippus*	SC	SC	Breeding habitat is confined to sites where milkweeds, the sole food of caterpillars, grow. Milkweeds grow in a variety of environments, including meadows in farmlands, along roadsides and in ditches, open wetlands, dry sandy areas, short and tall grass prairie, river banks, irrigation ditches, arid valleys, and south-facing hills (COSEWIC, 2010c). ESA Protection: N/A	No significant areas of milkweed. Habitat is not representative of key habitat.
Northern Brook Lamprey	*Ichthyomyzon fossor*	SC	SC	Inhabits clear, coolwater streams. Adults are found in fast flowing riffles comprised of rock or gravel (MNRF, 2016). ESA Protection: N/A	Habitat is not representative of key habitat.
Northern Myotis	*Myotis septentrionalis*	END	END	Maternity roost sites are generally located within deciduous and mixed forests and focused in snags including loose bark and cavities of trees. Overwintering sites are characteristically mines or caves (COSEWIC, 2013b). ESA Protection: Species and general habitat protection	Potentially suitable habitat within study area in the FOC community and structures. Northern Myotis not documented during Azimuth's field investigations.
Northern Map Turtle	*Grapetemys geographica*	SC	SC	Inhabits rivers and lakes where it basks on emergent rocks, banks, logs and fallen trees. Prefer shallow, soft-bottomed aquatic habitats with exposed objects for basking (COSEWIC, 2012d). ESA Protection: N/A	Species not expected to be present on property. Habitat is not representative of key habitat.
Peregrine Falcon	*Falco peregrinus*	SC	SC (*anatum/tundrius*)	Most nest on cliff ledges or crevices, but some will use tall buildings or bridges near good foraging areas. Nests are typically close to bodies of water (COSEWIC, 2007e). ESA Protection: N/A	Habitat is not representative of key habitat. Peregrine Falcon not documented during Azimuth's field investigations.
Piping Plover	*Charadrius melodus*	END	END	Nest on sand and pebble beaches of freshwater dune formations on barrier islands, peninsulas or shorelines of large lakes (COSEWIC, 2013a). ESA Protection: Species and regulated habitat protection	Habitat is not representative of key habitat. Piping Plover not documented during Azimuth's field investigations.
Red-headed Woodpecker	*Melanerpes erythrocephalus*	SC	THR	Occurs in open deciduous forests, particularly those dominated by oak and beech, grasslands, forest edges, orchards, pastures along rivers and roads, urban parks, golf courses, cemeteries, beaver ponds and timber stands that have been treated with herbicides (COSEWIC, 2007f). ESA Protection: N/A	Potentially suitable habitat within study area. Red-headed Woodpecker not documented during Azimuth's field investigations.
Redside Dace	*Clinostomus elongatus*	END	SC	Found in pools and slow-flowing sections of relatively small, clear headwater streams with both pool and riffle habitats and a moderate to high gradient. These streams typically flow through meadows, pasture or shrub overstorey, and have abundant overhanging riparian vegetation (COSEWIC, 2007c). ESA Protection: Species and general habitat protection.	Habitat is not representative of key habitat.

Table 1: Species at Risk Habitat Summary and Assessment

Common Name	Species Name	MNRF	SARA	Key Habitats Used By Species[1]	Initial Assessment
Snapping Turtle	*Chelydra serpentina*	SC	SC	Habitat is characterized by slow-moving water with a soft mud bottom and dense aquatic vegetation. Often located in ponds, sloughs, shallow bays or river edges and slow streams, or areas combining several of these wetland habitats (COSEWIC, 2008a). ESA Protection: N/A	Species not expected to be present on property. Habitat is not representative of key habitat.
Restricted Species	*Not Applicable*	END	END	Broadly speaking, this species is associated with wetland habitats such as bogs, fens, marshes, swamps, and shallow graminoid meadows. ESA Protection: Species and general habitat protection	Species not expected to be present within study area. Habitat is not representative of key habitat.
Spotted Wintergreen	*Chimaphila maculata*	END	END	Requires sandy habitats in dry-mesic Oak-Pine woods (COSEWIC, 2000a). ESA Protection: Species and general habitat protection	Habitat is not representative of key habitat. Spotted Wintergreen not documented during Azimuth's field investigations.
Tri-colored Bat	*Perimyotis subflavus*	END	END	Maternity roost sites include forests and modified landscapes (barns or human-made structures). Overwintering sites include mines and caves (COSEWIC, 2013b). ESA Protection: Species and general habitat protection	Potentially suitable habitat on the property in the FOC community and structures. Northern Myotis not documented during Azimuth's field investigations.
Wood Thrush	*Hylocichla mustelina*	SC	No status	Found in moist, deciduous hardwood or mixed stands, often previously disturbed, with a dense deciduous undergrowth and with tall trees for singing perches (COSEWIC, 2012f). ESA Protection: N/A	Habitat is not representative of key habitat. Wood Thrush not documented during Azimuth's field investigations.
Yellow Rail	*Coturnicops noveboracensis*	SC	SC	Nest in wet marshy areas of short grass-like vegetation. The habitat must remain wet throughout the breeding season (COSEWIC, 2009c). ESA Protection: N/A	Habitat is not representative of key habitat. Yellow Rail not documented during Azimuth's field investigations.

Family	Scientific Name	Common Name	FOC1-2	CUM/Lawn	Hedgerow	G-Rank	S-Rank	COSEWIC	MNRF
ACERACEAE	Acer negundo	*Manitoba Maple*	x	x	x	G5	S5		
ACERACEAE	Acer platanoides	*Norway Maple*			x	GNR	SE5		
ACERACEAE	Acer saccharinum	*Silver Maple*			x	G5	S5		
ACERACEAE	Acer saccharum	*Sugar Maple*	x		x	G5	S5		
ACERACEAE	Acer rubrum	*Red Maple*	x		x	G5	S5		
ANACARDIACEAE	Rhus typhina	*Staghorn Sumac*		x	x	G5	S5		
ANACARDIACEAE	Toxicodendron radicans	*Climbing Poison Ivy*	x	x	x	G5	S5		
APIACEAE	Daucus carota	*Wild Carrot*		x		GNR	SE5		
APOCYNACEAE	Vinca minor	*Periwinkle*	x	x	x	GNR	SE5		
ASCLEPIADACEAE	Asclepias syriaca	*Common Milkweed*		x		G5	S5		
ASTERACEAE	Achillea millefolium	*Common Yarrow*		x		G5	SE		
ASTERACEAE	Antennaria neglecta	*Field Pussytoes*		x		G5	S5		
ASTERACEAE	Arctium minus	*Common Burdock*		x		GNR	SE5		
ASTERACEAE	Cirsium arvense	*Canada Thistle*		x	x	GNR	SE5		
ASTERACEAE	Cirsium vulgare	*Bull Thistle*		x		GNR	SE5		
ASTERACEAE	Erigeron philadelphicus	*Philadelphia Fleabane*		x		G5	S5		
ASTERACEAE	Leucanthemum vulgare	*Oxeye Daisy*		x		GNR	SE5		
ASTERACEAE	Pilosella aurantiaca	*Orange Hawkweed*		x		GNR	SE5		
ASTERACEAE	Pilosella caespitosa	*Meadow Hawkweed*		x		GNR	SE5		
ASTERACEAE	Solidago canadensis	*Canada Goldenrod*		x	x	G5T5	S5		
ASTERACEAE	Solidago flexicaulis	*Zigzag Goldenrod*	x		x	G5	S5		
ASTERACEAE	Symphyotrichum cordifolium	*Heart-leaved Aster*		x		G5	S5		
ASTERACEAE	Taraxacum officinale	*Common Dandelion*	x	x	x	G5	SE5		
BETULACEAE	Betula papyrifera	*Paper Birch*	x			G5	S5		
BORAGINACEAE	Myosotis scorpioides	*True Forget-me-not*	x	x	x	G5	SE5		
BRASSICACEAE	Alliaria petiolata	*Garlic Mustard*	x	x	x	GNR	SE5		
BRASSICACEAE	Barbarea vulgaris	*Bitter Wintercress*		x		GNR	SE5		
BRASSICACEAE	Capsella bursa-pastoris	*Common Shepherd's Purse*		x		GNR	SE5		
CAPRIFOLIACEAE	Lonicera tatarica	*Tartarian Honeysuckle*		x	x	GNR	SE5		
CAPRIFOLIACEAE	Sambucus racemosa	*Red Elderberry*	x			G5	S5		
CAPRIFOLIACEAE	Viburnum acerifolium	*Maple-leaf Viburnum*	x			G5	S5		
CARYOPHYLLACEAE	Silene vulgaris	*Maiden's Tears*		x		GNR	SE5		
CELASTRACEAE	Euonymus europaeus	*European Euonymus*		x		GNR	SE2		
CHENOPODIACEAE	Chenopodium album	*White Goosefoot*		x		G5	SE5		
CLUSIACEAE	Hypericum perforatum	*Common St. John's-wort*		x		GNR	SE5		
CORNACEAE	Cornus alternifolia	*Alternate-leaved Dogwood*	x		x	G5	S5		
CORNACEAE	Cornus stolonifera	*Red-osier Dogwood*			x	G5	S5		
CRASSULACEAE	Sedum acre	*Gold-moss*		x		GNR	SE5		
CUPRESSACEAE	Juniperus virginiana	*Eastern Red Cedar*			x	G5	S5		
CYPERACEAE	Carex arctata	*Black Sedge*			x	G5	S5		
CYPERACEAE	Carex deweyana	*Dewey's Sedge*		x	x	G5	S5		
DRYOPTERIDACEAE	Dryopteris cristata	*Crested Wood Fern*		x		G5	S5		
FABACEAE	Medicago lupulina	*Black Medic*		x		GNR	SE5		
FABACEAE	Robinia pseudoacacia	*Black Locust*		x	x	G5	SE5		
FABACEAE	Trifolium pratense	*Red Clover*		x		GNR	SE5		
FABACEAE	Trifolium repens	*White Clover*		x		GNR	SE5		
FABACEAE	Vicia hirsuta	*Hairy Vetch*		x		GNR	SE1		
FAGACEAE	Quercus rubra	*Northern Red Oak*			x	G5	S5		
FAGACEAE	Fagus grandifolia	*American Beech*			x	G5	S4		

Family	Scientific Name	Common Name	FOC1-2	CUM/Lawn	Hedgerow	G-Rank	S-Rank	COSEWIC	MNRF
GERANIACEAE	Geranium robertianum	*Herb-Robert*	x	x	x	G5	S5		
GROSSULARIACEAE	Ribes cynosbati	*Prickly Gooseberry*	x			G5	S5		
LAMIACEAE	Clinopodium vulgare	*Field Basil*	x	x	x	G5	S5		
LAMIACEAE	Glechoma hederacea	*Ground Ivy*	x	x		GNR	SE5		
LAMIACEAE	Leonurus cardiaca	*Common Motherwort*	x			GNR	SE5		
LILIACEAE	Hemerocallis fulva	*Orange Daylily*	x	x		GNA	SE5		
LILIACEAE	Maianthemum canadense	*Wild Lily-of-the-valley*	x		x	G5	S5		
LILIACEAE	Convallaria majalis	*European Lily-of-the-valley*		x		G5	SE5		
LILIACEAE	Polygonatum pubescens	*Hairy Solomon's Seal*	x			G5	S5		
LILIACEAE	Trillium grandiflorum	*White Trillium*	x			G5	S5		
OLEACEAE	Fraxinus pennsylvanica	*Green Ash*	x			G5	S4		
ONAGRACEAE	Circaea canadensis	*Broad-leaved Enchanter's Nightshade*	x		x	G5T5	S5		
ONAGRACEAE	Oenothera biennis	*Common Evening Primrose*	x	x		G5	S5		
OXALIDACEAE	Oxalis stricta	*European Wood-sorrel*		x		G5	S5		
PINACEAE	Picea glauca	*White Spruce*			x	G5	S5		
PINACEAE	Pinus strobus	*Eastern White Pine*	x		x	G5	S5		
PLANTAGINACEAE	Plantago lanceolata	*English Plantain*		x		G5	SE5		
POACEAE	Dactylis glomerata	*Orchard Grass*		x		GNR	SE5		
POACEAE	Poa compressa	*Canada Bluegrass*	x	x	x	GNR	SE5		
POLYGONACEAE	Rumex acetosella	*Sheep Sorrel*		x		GNR	SE5		
RANUNCULACEAE	Actaea rubra	*Red Baneberry*	x			G5	S5		
RANUNCULACEAE	Anemone virginiana	*Virginia Anemone*		x		G5T5	S5		
RANUNCULACEAE	Aquilegia canadensis	*Wild Columbine*		x		G5	S5		
RANUNCULACEAE	Ranunculus acris	*Tall Buttercup*	x	x		G5	SE5		
RHAMNACEAE	Rhamnus cathartica	*Common Buckthorn*		x		GNR	SE5		
ROSACEAE	Fragaria virginiana	*Wild Strawberry*	x	x		G5	S5		
ROSACEAE	Potentilla recta	*Sulphur Cinquefoil*		x		GNR	SE5		
ROSACEAE	Prunus avium	*European Cherry*	x			GNR	SE4		
ROSACEAE	Prunus serotina	*Wild Black Cherry*	x		x	G5	S5		
ROSACEAE	Prunus virginiana	*Choke Cherry*	x		x	G5	S5		
ROSACEAE	Rubus idaeus	*Wild Red Raspberry*	x	x	x	G5T5	S5		
RUBIACEAE	Galium odoratum	*Sweet Bedstraw*		x		GNR	SE1		
SALICACEAE	Populus grandidentata	*Large-tooth Aspen*			x	G5	S5		
SALICACEAE	Populus tremuloides	*Trembling Aspen*	x		x	G5	S5		
SCROPHULARIACEAE	Verbascum thapsus	*Common Mullein*		x		GNR	SE5		
SCROPHULARIACEAE	Veronica officinalis	*Common Speedwell*	x	x		G5	SE5		
SCROPHULARIACEAE	Veronica serpyllifolia	*Thyme-leaved Speedwell*		x		G5TNR	SE5		
SMILACACEAE	Smilax herbacea	*Herbaceous Carrionflower*	x			G5	S4		
SOLANACEAE	Solanum dulcamara	*Climbing Nightshade*	x			GNR	SE5		
TILIACEAE	Tilia americana	*American Basswood*	x			G5	S5		
VIOLACEAE	Viola sororia	*Woolly Blue Violet*		x		G5	S5		
VITACEAE	Parthenocissus quinquefolia	*Virginia Creeper*	x			G5	S4?		
VITACEAE	Vitis riparia	*Riverbank Grape*	x	x		G5	S5		

			Bird Point Count Station		Conservation Rank[D]		
Family	**Scientific Name**	**English Common Name**	**1**	**2**	**S RANK**	**G RANK**	**SARO STATUS**
Cardinalidae	*Cardinalis cardinalis*	Northern Cardinal	FO	S	S5	G5	
Cardinalidae	*Pheucticus ludovicianus*	Rose-breasted Grosbeak	C		S4B	G5	
Columbidae	*Zenaida macroura*	Mourning Dove	FO		S5	G5	
Corvidae	*Corvus brachyrhynchos*	American Crow	S		S5B	G5	
Emberizidae	*Melospiza melodia*	Song Sparrow	S	S	S5B	G5	
Emberizidae	*Spizella passerina*	Chipping Sparrow	S	S	S5B	G5	
Fringillidae	*Carduelis tristis*	American Goldfinch	S	S	S5B	G5	
Laridae	*Larus delawarensis*	Ring-billed Gull	S	S	S5B,S4N	G5	
Paridae	*Poecile atricapillus*	Black-capped Chickadee	S	S	S5	G5	
Parulidae	*Setophaga pinus*	Pine Warbler	S		S5B	G5	
Turdidae	*Turdus migratorius*	American Robin	H	S	S5B	G5	
Vireonidae	*Vireo olivaceus*	Red-eyed Vireo	S	S	S5B	G5	

Surveys Conditions:

[A]May 31, 2017; Start Time 0700hr/ End Time 0725hr; Start Temperature +13°C; Wind B1; Cloud Cover 20%; Precipitation Null; Observer M. Francis, A. Pompilio

[C]OBBA Breeding Evidence Codes:

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

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

FO - Fly Over

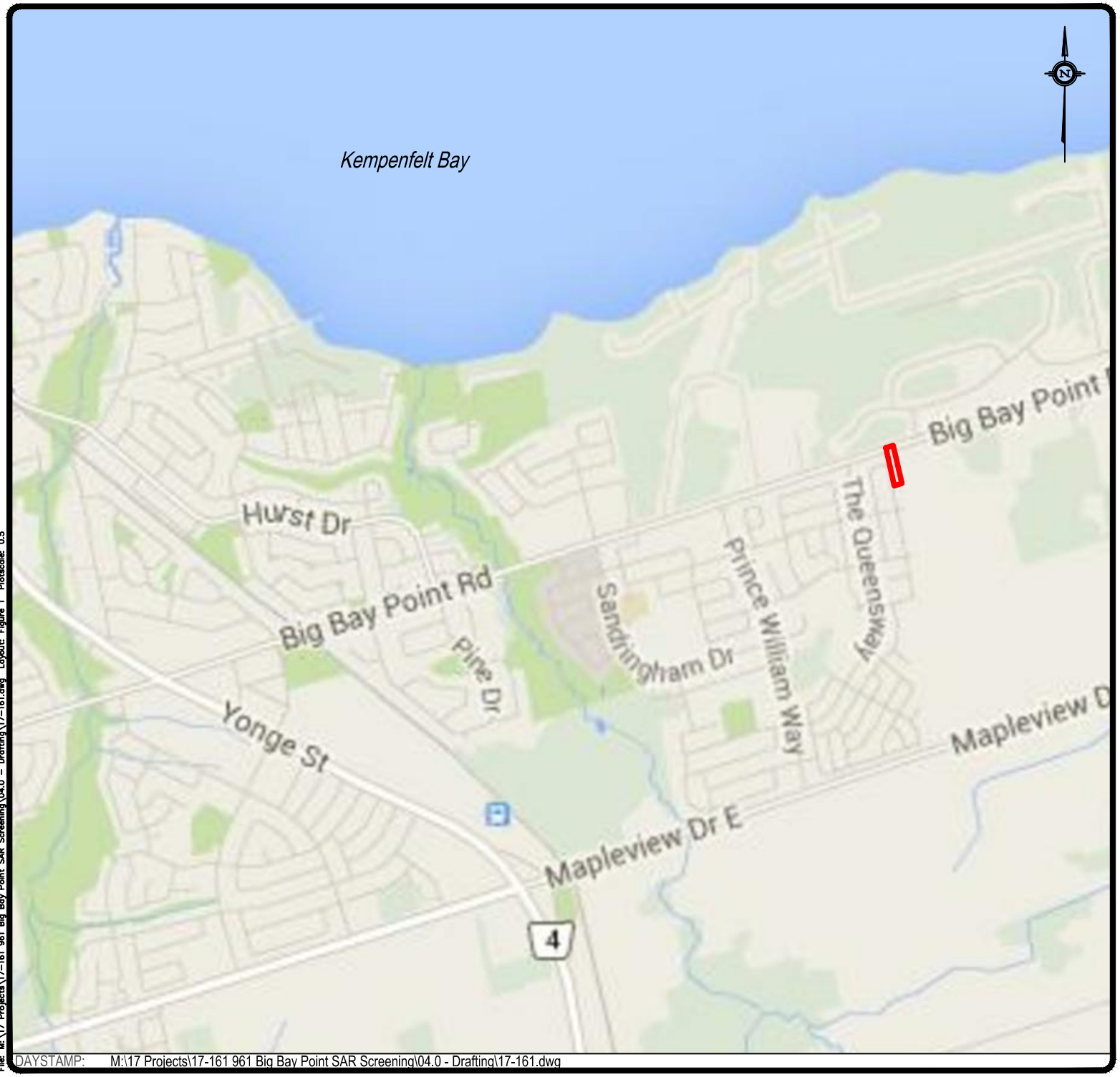
T - Permanent territory presumed trhough registration of territorial behaviour (e.g. song) on at least two days, a week or more apart, at the same place.

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

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

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

SARO - EXP (Extirpated), END (Endangered), THR (Threatened), SC (Special Concern)



LEGEND:

Approx. Property Boundary

REG MAP

250m 0 750m

HORIZONTAL SCALE 1: 25,000

AZIMUTH ENVIRONMENTAL CONSULTING, INC.

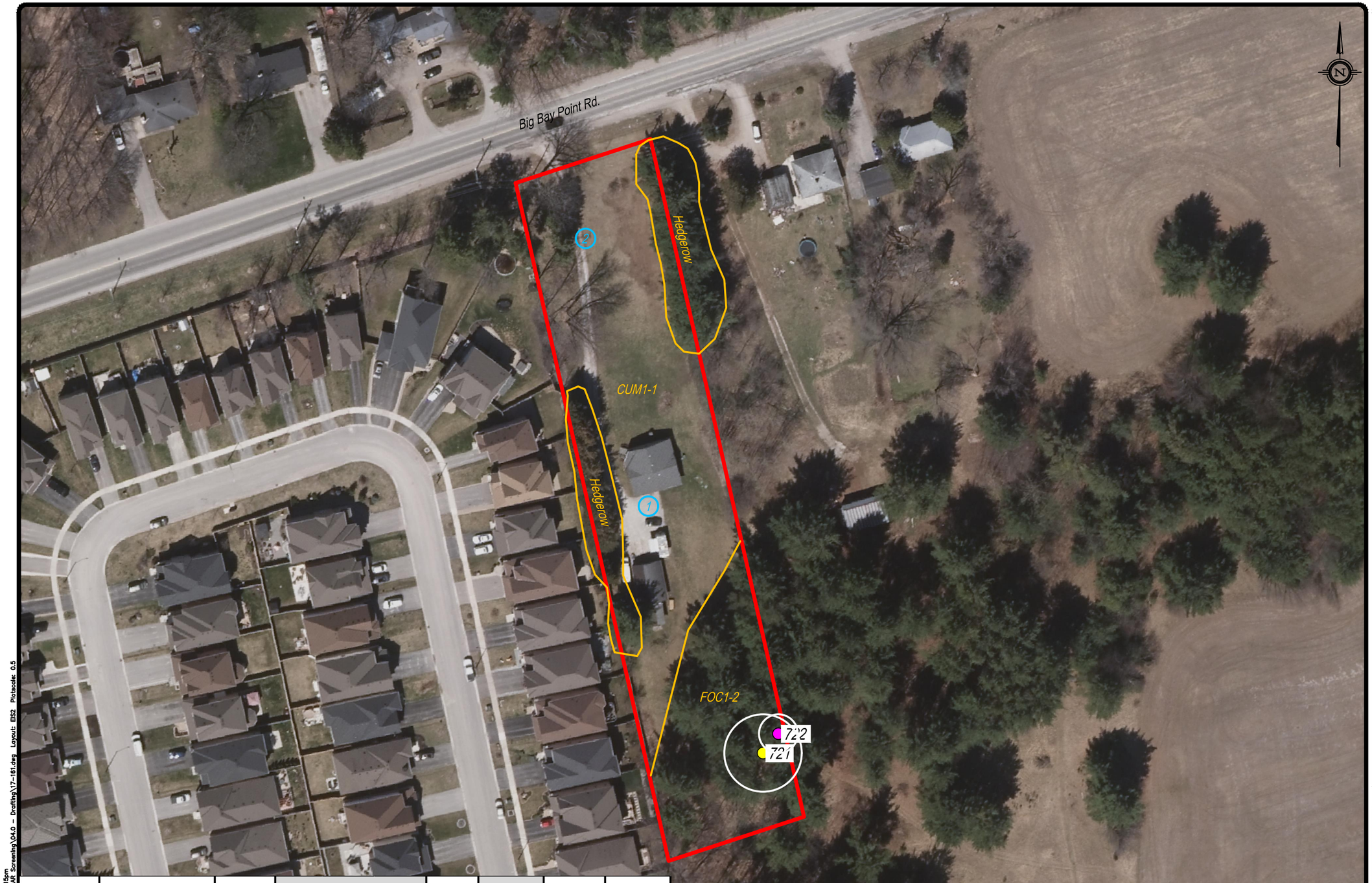
Study Area Location

961 Big Bay Point Rd.,
Barrie, ON

DATE ISSUED: *May 2017*	Figure No.
CREATED BY: *JLM*	
PROJECT NO.: *17-161*	1
REFERENCE: *MNRF*	

DAYSTAMP: M:\17 Projects\17-161 961 Big Bay Point SAR Screening\04.0 - Drafting\17-161.dwg

Plotted by: JMCCARTNEY on May 31, 2017 at 9:11am
File: M:\17 Projects\17-161 961 Big Bay Point SAR Screening\04.0 - Drafting\17-161.dwg Layout: Figure 1 Plotscale: 0.5



Plot Number	Species	DBH	Snag Features			Decay Class	Snag >10m?	Snag Tree?	Canopy
			<3m	3-10m	>10m				
721	White Pine	31	Y	Y	Y	4	Y	Y	C
722	European Cherry	28	Y	Y	N	5	N	Y	C

DAYSTAMP: M:\17 Projects\17-161 961 Big Bay Point SAR Screening\04.0 - Drafting\17-161.dwg

LEGEND:

- Approx. Property Boundary
- (#) Bird Point Count Station
- Vegetation Communities
- CUM1-1 Dry-Moist Old Field Meadow Type
- FOC1-2 Dry-Fresh White Pine-Red Pine Coniferous Forest Type

Bat Snag Decay Class

- Decay Class 1
- Decay Class 2
- Decay Class 3
- Decay Class 4
- Decay Class 5
- Decay Class 6
- Decay Class N/A
- Bat Snag >10m Height
- Bat Snag <10m Height

15m 0 30m

HORIZONTAL SCALE 1:1,000

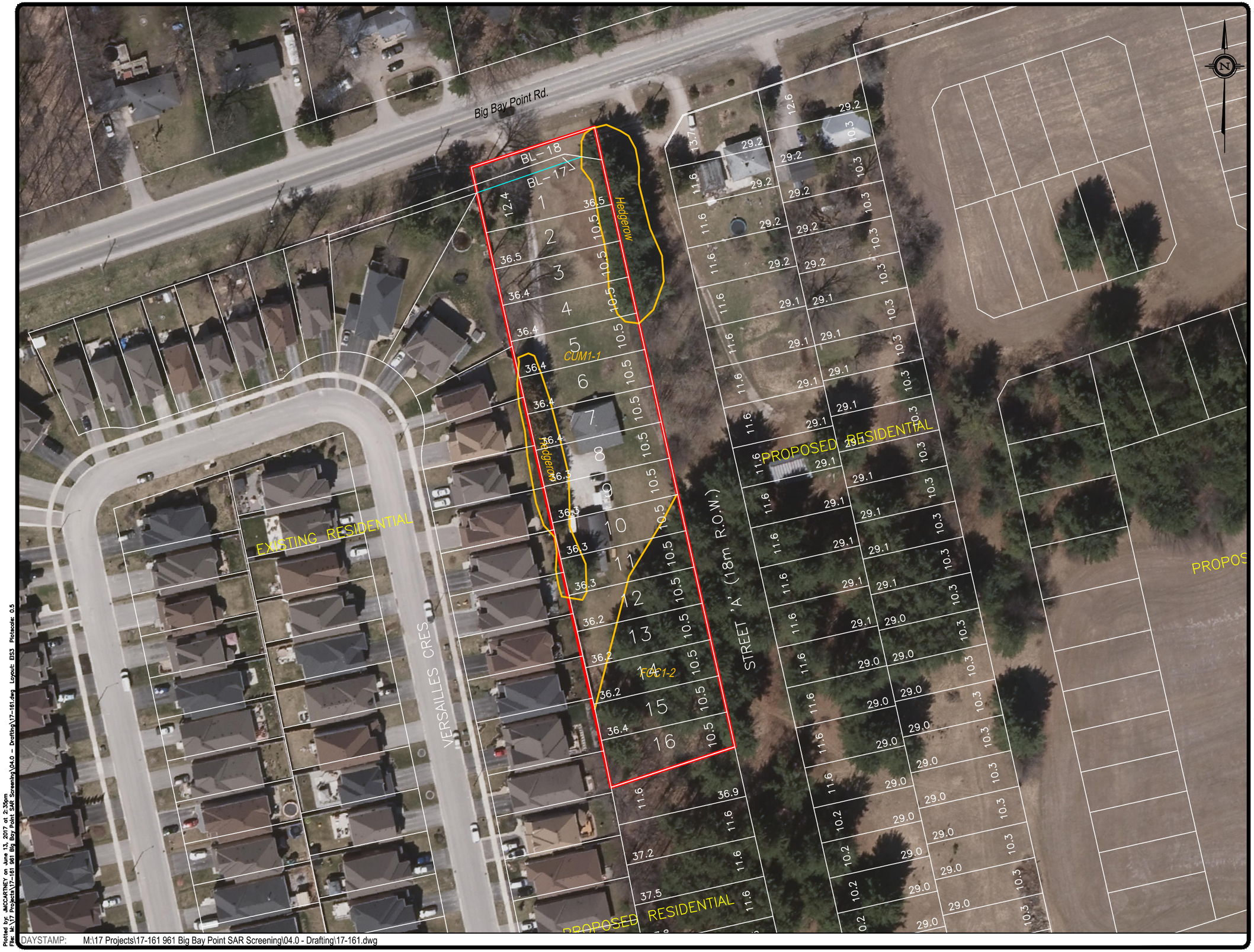
AZIMUTH ENVIRONMENTAL CONSULTING, INC.

Environmental Features

961 Big Bay Point Rd.,
Barrie, ON

DATE ISSUED:	May 2017	Figure No. 2
CREATED BY:	JLM	
PROJECT NO.:	17-161	
REFERENCE:	Simcoe County Maps	

Plotted by: JMCCARTNEY on June 13, 2017 at 4:15pm
File: M:\17 Projects\17-161 961 Big Bay Point SAR Screening\04.0 - Drafting\17-161.dwg Layout: EIS2 Plotscale: 0.5



LEGEND:

- Approx. Property Boundary
- Vegetation Communities
- CUM1-1 Dry-Moist Old Field Meadow Type
- FOC1-2 Dry-Fresh White Pine-Red Pine Coniferous Forest Type

15m 0 30m

HORIZONTAL SCALE 1:1,000

AZIMUTH ENVIRONMENTAL CONSULTING, INC.

Proposed Development Plan

961 Big Bay Point Rd.,
Barrie, ON

DATE ISSUED:	June 2017	Figure No. 3
CREATED BY:	JLM	
PROJECT NO.:	17-161	
REFERENCE:	Simcoe County Maps	

DAYSTAMP: M:\17 Projects\17-161 961 Big Bay Point SAR Screening\04.0 - Drafting\17-161.dwg

Plotted by: JMCCARTNEY on June 13, 2017 at 2:35pm
File: M:\17 Projects\17-161 961 Big Bay Point SAR Screening\04.0 – Drafting\17-161.dwg Layout: ES3 Plotscale: 0.5

Photograph 1. No bats or evidence of bats were documented within the attic of the residential dwelling on the property (May 31, 2017).

Photograph 2. No holes or spaces which bats may utilize to access the interior of the house were noted. The chimney on the house is too small to provide habitat for Chimney Swift (May 31, 2017).

Photograph 3. No holes or spaces which bats may utilize to access the interior of the garage were noted (May 31, 2017).

Photograph 4. No holes or spaces which bats may utilize to access the interior of the garage were noted. The chimney on the garage is capped and thus does not provide habitat for Chimney Swift (May 31, 2017).