



**Species at Risk Screening  
Portion of Lot 19, Concession 12  
Hewitt's Secondary Plan Area  
City of Barrie**

Prepared for:  
2121191 Ontario Inc/  
LM Barrie Holdings Inc.

Prepared by:  
Azimuth Environmental  
Consulting, Inc.

February 2017

AEC 11-076b



Environmental Assessments & Approvals

February 1, 2017

AEC 11-076b (SAR)

2121191 Ontario Inc./LM Barrie Holdings Inc.  
67 Barrie Drive  
Barrie, ON L4N 7P1

ATTN: Eric Lawton

Re: **Species at Risk Screening for a Proposed Development**  
**Hewitt's Secondary Plan Area**  
**Portion of Lot 19, Concession 12**  
**Hewitt's Secondary Plan Area, City of Barrie**

Dear Mr. Lawton,

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 identified. 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 June and August 2016 and species designations under Ontario's *Endangered Species Act*, 2007 current to September 2016.

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

Yours truly,  
AZIMUTH ENVIRONMENTAL CONSULTING, INC.

Lisa Moran, B.Sc.Env.  
Terrestrial Ecologist



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## **1.0 INTRODUCTION**

Azimuth Environmental Consulting, Inc. (Azimuth) was retained by R.J. Burnside and Associates on behalf of 2121191 Ontario Inc. /LM Barrie Holdings Inc. to prepare a Species at Risk (SAR) Screening for a property located on the south part of Lot 19, Concession 12, City of Barrie (City) (Figure 1).

## **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 System (NHS) Report;
- Conducted dawn breeding bird surveys on June 6, 2016, June 20, 2016 to identify the potential for SAR birds to occur on the property;
- Evaluated vegetation communities, using protocols of the Ecological Land Classification (ELC) for Southern Ontario;
- Recorded wildlife observations while on-site;
- Reviewed the habitat types used by the SAR potentially occurring in the area and determined if the habitat available on or adjacent to the “2121191/LM Barrie Lands” 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); and,
- Conducted a search of the property in August 2016 for Butternut which is listed as END.

## **3.0 BACKGROUND**

Natural Resource Solutions Inc. was retained by the City of Barrie to prepare a NHS (2012) as the natural heritage component of the Hewitt’s Secondary Plan for the Barrie Annexed Lands. The purpose of the NHS report was to define the natural environmental features that should be retained as environmental protection in public ownership to protect, preserve and enhance the natural environment. As a part of the NHS, the Ministry of Natural Resources and Forestry (MNR) was consulted to determine SAR that have the potential to reside within the general area. The results of the NHS concluded that there are no features on the property that are within the City’s NHS. Therefore, this assessment is limited to an assessment of potential SAR.



## **4.0 SITE CONDITIONS**

### **4.1 On-site Conditions**

The property is accessible via a driveway from Maplevue Drive East. There are currently no structures on the property, although the front portion of the site is highly disturbed and identified as ‘anthropogenic’ on Figure 2. The remainder of the property is composed of agricultural lands utilized for row crops with treed hedgerows dividing the agricultural lands. A Cultural Meadow community exists mid-property and a Cultural Thicket exists within the northeast corner of the property. A Deciduous Forest resides within the northwest corner of the property (Figure 2).

### **4.2 Vegetation**

Three vegetation communities were identified on the property including Cultural Meadow (CUM), Cultural Thicket (CUT) and Deciduous Forest (FOD) (Figure 2). The descriptions of ELC communities can be found within Table 1.

Hedgerows run around the perimeter of the property and divide the fields.

Five Butternut (END) were documented within the FOD community (Figure 2).

### **4.3 Birds**

Dawn breeding bird surveys were conducted on June 6, 2016, June 20, 2016. During these surveys a total of 30 bird species were documented (Table 2).

Grasshopper Sparrow (SC) was documented on site. With the exception of Grasshopper Sparrow, none of the bird species documented on the property during these surveys are SAR.

## **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. A portion of the property is outside of the development area (Figure 3).

## **6.0 SPECIES AT RISK ASSESSMENT**

Based on the field studies completed for the property and background information collected for Hewitt’s SPA, the following species have potentially suitable habitat on the property (Table 3):



- Mammals: Little Brown Myotis (*Myotis lucifugus*) [END], Northern Myotis (*Myotis septentrionalis*) [END], Tri-colored Bat (*Perimyotis subflavus*) [END];
- Birds: Bobolink (*Dolichonyx oryzivorus*) [THR], Eastern Meadowlark (*Sturnella magna*) [THR], Eastern Wood-pewee (*Contopus virens*) [SC], Golden-winged Warbler (*Vermivora chrysoptera*) [SC], Grasshopper Sparrow (*Ammodramus savannarum*) [SC], Henslow's Sparrow (*Ammodramus henslowii*) [END], Red-headed Woodpecker (*Melanerpes erythrocephalus*) [SC] and Wood Thrush (*Hylocichla mustelina*) [SC]; and
- Plants: American Ginseng (*Panax quinquefolius*) [END], Butternut (*Juglans cinerea*) [END], and Purple Twayblade (*Liparis lilifolia*) [THR].

### 6.1 Endangered Bat Species

According to the MNRF's Ecoregion 6E Criterion Schedule (MNRF 2015), deciduous and mixed woodlands have the potential to function as bat maternity habitat if they provide an abundance of wildlife cavity trees (i.e., > 10 trees measuring 25cm dbh or greater providing holes, loose bark, etc. potentially utilized by bats/ha). Given its relatively small size, this feature does not represent potentially suitable habitat for large bat maternity colonies. Furthermore, it is within an agricultural setting (i.e. row crops), is adjacent to residential homes and is not located in proximity to foraging habitat (i.e. wetland/open water) making it less desirable for bats. Nonetheless, it cannot be excluded as potentially suitable habitat and potential bat habitat on site should be considered.

### 6.2 Threatened Bird Species

Bobolink and Eastern Meadowlark are THR bird species that are known to occur within the general area. Neither of these species were documented on the property during Azimuth's 2016 dawn breeding bird surveys.

### 6.3 Special Concern Bird Species

Eastern Wood-pewee, Golden-winged Warbler, Grasshopper Sparrow, Red-headed Woodpecker and Wood Thrush are SC bird species that are known to occur within the general area. With the exception of the Grasshopper Sparrow, no additional SC bird species were documented during Azimuth's 2016 dawn breeding bird surveys.

While these species do not receive protection under the ESA, 2007, care is recommended while working in areas where these species have the potential to occur. Vegetation removal should be restricted from occurring during the breeding bird season. Please refer to Section 7.4 below.



#### **6.4 American Ginseng, Butternut and Purple Twayblade**

No American Ginseng (END) or Purple Twayblade (THR) were documented on the property during the 2014 or 2016 site visits. Five Butternut (THR) individuals were documented within the FOD 5-8 community.

### **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 SAR. Changes to policy, or the natural environment, could result in shifts, removal, or addition of new areas to the list of areas currently considered to be 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 appropriate advice at the time of the onset of future site works.

#### **7.2 Butternut**

Five Butternuts (END) were documented on site (Figure 2). At this time, there is no development proposed within the FOD 5-8 community. If, in the future, there are plans to undertake an activity that may affect Butternut (END) or proposed works will occur within 30m of the Butternut (END), landowners may be eligible to follow the requirements of the ESA at that time.

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

- Category 1 (Non- retainable) - Trees affected by Butternut canker to such an advanced degree that retaining the tree would not support the protection or recovery of the species in the area in which the tree is located.
- Category 2 (Retainable) - Trees not affected by Butternut canker or affected by Butternut canker but the degree to which it is affected is not too advanced and



retaining the tree could support the protection or recovery of Butternut trees in the area in which the tree is located.

- Category 3 (Archivable) - Trees that may be useful in determining sources of resistance to butternut canker.

The BHA must be conducted in the summer (June – August), when the leaves of the trees have emerged and crown health can be assessed.

### **7.3 Endangered Bat Species**

At this time, there is no development proposed within the FOD5-8 community (Figure 3). If, in the future, there are plans to remove trees from within the FOD, the MNRF should be consulted as it relates to the END bat species should any future works be proposed within this community.

### **7.4 MNRF Information Gathering Form**

Based on preliminary discussions with the MNRF, it is our understanding that MNRF wishes to deal with SAR for the entire Hewitt's SPA rather than on a property by property basis. Based on this information, it has been determined that the best route to convey the SAR information to MNRF is through an Information Gathering Form (IGF) for the entire Hewitt's SPA. Therefore, we recommend that the information obtained during field surveys on the EMLG 2121191 Ontario Limited Lands be included within the IGF submission to MNRF for the Hewitt's SPA. Completing and submitting this form will allow Azimuth to initiate discussions with MNRF so they can advise us how to proceed in compliance with Ontario's ESA.

### **7.5 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](http://www.ec.gc.ca/paom-itmb/default.asp?lang=En&n=4F39A78F-1#_03)). In Zones C2 and C3 vegetation clearing should be avoided between April 1<sup>st</sup> through August 31<sup>st</sup> 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.



## 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. The proposed works are not expected to result in damage or destruction to habitat of END or THR species since all potential SAR habitat (FOD) and SAR (Butternut) will remain post-development.

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Table 1 - Ecological Land Classification (ELC) for 2121191/LM, Barrie, ON

| Ecological Land Classification |                 |                       |                                              |                                    |                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                           |
|--------------------------------|-----------------|-----------------------|----------------------------------------------|------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| System                         | Community Class | Community Series      | Ecosite                                      | Vegetation Type                    | Composition                                                                                                                                                                                                                                                                                                                              | Ground Cover                                                                                                                                                                                                                                                                                              |
| Terrestrial                    | FO, Forest      | FOD, Deciduous Forest | FOD5, Dry-Fresh Sugar Maple Deciduous Forest |                                    | Canopy dominated by Sugar Maple, with abundance of American Basswood, White Ash and Red Oak. Occasional Wild Black Cherry, Hop Hornbeam, American Beech, Silver Maple and Butternut. Sub canopy dominated by Sugar Maple, with occurrence of American Beech and White Ash. Understory composed of White Ash, Chokecherry and Sugar Maple | Co-dominated by White Ash saplings and large patches of Wild Ginger. Occurrence of Canada Mayflower, Herb Robert, False Solomon's Seal, Blue Cohosh, White Baneberry, Evergreen Wood Fern, Sharp-lobed Hepatica, Red and White Trilliums, Enchanter's Nightshade and Prickly Gooseberry.                  |
| Terrestrial                    | CU, Cultural    | CUM, Cultural Meadow  | CUM1, Mineral Cultural Meadow                | CUM1-1, Dry-Moist Old Field Meadow | Scattered willows, Balsam Poplar and Wild Black Cherry.                                                                                                                                                                                                                                                                                  | Highly disturbed meadow, dominated by graminoids, such as Awnless Brome, Big Bluestem and Yellow Foxtail Grass. Occurrence of Field Sow-thistle, Wild Carrot, Ragweed, Milkweed, Viper's Bugloss, St. John's wort, Hop Clover, Black Medic, Oxeye Daisy, Curly Dock, Chicory, Canada Goldenrod and Grape. |
| Terrestrial                    | CU, Cultural    | CUT, Cultural Thicket | CUT1, Mineral Cultural Thicket               |                                    | Pioneer community. Dominated by shrub-sized Basswood, Scotch Pine and Staghorn Sumac. Occurrence of Red Oak, Black Walnut and poplars.                                                                                                                                                                                                   | Occurrence of Reed, Red Raspberry, Milkweed, Tartarian Honeysuckle, Bull Thistle, Awnless Brome, Ragweed, Big Bluestem, Wild Carrot, Dog Strangling Vine, Red Clover, Philadelphia Fleabane, Penny-cress, Common Plantain, Common Mullein, Bracken Fern, English Plantain and goldenrods.                 |
| Terrestrial                    |                 |                       |                                              | Hedgerow (not an ELC unit)         | Occurrence of Red Oak, Silver Maple, Black Cherry, Sugar Maple, Common Apple, Chokecherry, Virginia Creeper, Tartarian Honeysuckle, Staghorn Sumac and Common Buckthorn.                                                                                                                                                                 | Occurrence of False Solomon's Seal, Prickly Gooseberry, Motherwort.                                                                                                                                                                                                                                       |

Table 2 - Bird List for 2121191/LM, Barrie, ON

|               |                                  |                         | Point Count Stations <sup>A,B</sup> |      |      |      | Conservation Ranks <sup>E</sup> |         |        |             |
|---------------|----------------------------------|-------------------------|-------------------------------------|------|------|------|---------------------------------|---------|--------|-------------|
| Family        | Scientific Name                  | English Common Name     | 1                                   | 2    | 3    | 4    | RCC                             | S RANK  | G RANK | SARO STATUS |
| Anatidae      | <i>Branta canadensis</i>         | Canada Goose            |                                     |      | FO   |      |                                 | S5      | G5     |             |
| Bombycillidae | <i>Bombycilla cedrorum</i>       | Cedar Waxwing           | H, C                                | , S  |      | , C  |                                 | S5B     | G5     |             |
| Cardinalidae  | <i>Cardinalis cardinalis</i>     | Northern Cardinal       | S,                                  | S,   | S,   |      |                                 | S5      | G5     |             |
| Cardinalidae  | <i>Passerina cyanea</i>          | Indigo Bunting          | S,                                  | S, S | S, S | S, S |                                 | S4B     | G5     |             |
| Cathartidae   | <i>Cathartes aura</i>            | Turkey Vulture          |                                     |      | , X  |      |                                 | S5B     | G5     |             |
| Charadriidae  | <i>Charadrius vociferus</i>      | Killdeer                | , S                                 |      |      |      |                                 | S5B,S5N | G5     |             |
| Columbidae    | <i>Zenaida macroura</i>          | Mourning Dove           | H, FO                               |      |      |      |                                 | S5      | G5     |             |
| Corvidae      | <i>Corvus brachyrhynchos</i>     | American Crow           | C, C                                | C, C | C, C | , C  |                                 | S5B     | G5     |             |
| Corvidae      | <i>Cyanocitta cristata</i>       | Blue Jay                |                                     |      | C, C | S,   |                                 | S5      | G5     |             |
| Emberizidae   | <i>Ammodramus savannarum</i>     | Grasshopper Sparrow     | , S                                 | S, S |      |      |                                 | S4B     | G5     |             |
| Emberizidae   | <i>Melospiza melodia</i>         | Song Sparrow            | S,                                  | , S  | , S  | S,   |                                 | S5B     | G5     |             |
| Emberizidae   | <i>Passerculus sandwichensis</i> | Savannah Sparrow        | S, S                                | S, S |      | S ,  |                                 | S4B     | G5     |             |
| Emberizidae   | <i>Pooecetes gramineus</i>       | Vesper Sparrow          |                                     | S, S | , S  |      |                                 | S4B     | G5     |             |
| Emberizidae   | <i>Spizella passerina</i>        | Chipping Sparrow        |                                     | S,   | S, S | S, S |                                 | S5B     | G5     |             |
| Fringillidae  | <i>Carduelis tristis</i>         | American Goldfinch      | S, A                                | S,   | S, S | S, S |                                 | S5B     | G5     |             |
| Icteridae     | <i>Icterus galbula</i>           | Baltimore Oriole        |                                     |      | S,   | S,   |                                 | S4B     | G5     |             |
| Icteridae     | <i>Molothrus ater</i>            | Brown-headed Cowbird    | S,                                  |      | C,   |      |                                 | S4B     | G5     |             |
| Icteridae     | <i>Quiscalus quiscula</i>        | Common Grackle          | S, X                                |      |      | C,   |                                 | S5B     | G5     |             |
| Laridae       | <i>Larus delawarensis</i>        | Ring-billed Gull        |                                     | FO,  |      | X, C |                                 | S5B,S4N | G5     |             |
| Mimidae       | <i>Dumetella carolinensis</i>    | Gray Catbird            |                                     | , S  | C,   |      |                                 | S4B     | G5     |             |
| Paridae       | <i>Poecile atricapillus</i>      | Black-capped Chickadee  |                                     | S,   | S, S | , S  |                                 | S5      | G5     |             |
| Parulidae     | <i>Setophaga pinus</i>           | Pine Warbler            | S,                                  |      |      |      |                                 | S5B     | G5     |             |
| Parulidae     | <i>Setophaga ruticilla</i>       | American Redstart       |                                     |      | S,   |      |                                 | S5B     | G5     |             |
| Picidae       | <i>Colaptes auratus</i>          | Northern Flicker        |                                     | FO,  |      |      |                                 | S4B     | G5     |             |
| Sittidae      | <i>Sitta carolinensis</i>        | White-breasted Nuthatch |                                     |      |      | P    |                                 | S5      | G5     |             |
| Sturnidae     | <i>Sturnus vulgaris</i>          | European Starling       | S,                                  | , FO | S,   | S, X |                                 | SNA     | G5     |             |
| Turdidae      | <i>Turdus migratorius</i>        | American Robin          | S, S                                | S, S | S,   | , S  |                                 | S5B     | G5     |             |
| Tyrannidae    | <i>Sayornis phoebe</i>           | Eastern Phoebe          | S,                                  |      |      |      |                                 | S5B     | G5     |             |
| Tyrannidae    | <i>Tyrannus tyrannus</i>         | Eastern Kingbird        | S, X                                |      | S,   |      |                                 | S4B     | G5     |             |
| Vireonidae    | <i>Vireo olivaceus</i>           | Red-eyed Vireo          |                                     | S,   | S, S | S, S |                                 | S5B     | G5     |             |

Surveys Conditions:

<sup>A</sup>June 06, 2016; Start Time 06:30hr/ End Time 07:2025hr; Temperature Start +14°C; Wind Nil; Precipitation Nil; Observer B.Baker

<sup>B</sup>June 20, 2016; Start Time 06:00hr/ End Time 07:10hr; Temperature +15°C; Wind B1; Cloud Cover 0%; Precipitation Nil; Observer B.Baker

<sup>D</sup>OBBA Breeding Evidence Codes:

OBSERVED

FO - Fly Over

C - Call

X - Species observed in its breeding season (no breeding evidence)

POSSIBLE

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.

PROBABLE

Table 2 - Bird List for 2121191/LM, Barrie, ON

A - Agitated behaviour or anxiety calls of an adult.  
N - Nest building or excavation of nest hole.  
P -Pair observed in suitable nesting habitat in nesting season.  
T - Permanent territory presumed through registration of territorial behaviour (e.g. song) on at least two days, a week or more apart, at the same place.

<sup>E</sup>Conservation Rank - from OMNRF, NHIC and SARO Lists 2014  
RCC - Regional Conservation Concern according to Ontario Partners in Flight (2008)\*\*  
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)

Table 3: Species at Risk Habitat Summary

AEC11-076b 2121191 / LM Barrie, Barrie, ON

| Common Name             | Species Name                    | MNR | Key Habitats Used By Species <sup>1</sup>                                                                                                                                                                                                                                                               | Initial Assessment                                                                                                                                                              |
|-------------------------|---------------------------------|-----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| American Ginseng        | <i>Panax quinquefolius</i>      | END | It typically grows in rich, moist, but well-drained, and relatively mature, deciduous woods dominated by Sugar Maple ( <i>Acer saccharum</i> ), White Ash ( <i>Fraxinus americana</i> ) and American Basswood ( <i>Tilia americana</i> ).<br><br>ESA Protection: Species and general habitat protection | Potentially suitable habtiat within FOD. No American Ginseng was documented during Azimuth's field assessment.                                                                  |
| Bald Eagle              | <i>Haliaeetus leucocephalus</i> | SC  | They nest in a variety of habitats and forest types, almost always near a major lake or river. They usually nest in large trees such as pine and poplar.<br><br>ESA Protection: none                                                                                                                    | No critical habitat, no evidence of nesting present within the study area.                                                                                                      |
| Bank Swallow            | <i>Riparia riparia</i>          | THR | Nests in burrows excavated in natural and human-made settings with vertical sand and silt faces.<br>Colonies commonly found in sand or gravel pits, lakeshores, and along river banks<br><br>ESA Protection: Species and general habitat protection                                                     | No critical habitat, no evidence of nesting present within the study area.                                                                                                      |
| Barn Swallow            | <i>Hirundo rustica</i>          | THR | Ledges and walls of man-made structures such as buildings, barns, boathouses<br>Cliffs or caves<br><br>ESA Protection: Species and general habitat protection                                                                                                                                           | No suitable nesting habitat present for species (i.e. No structures). No Barn Swallow were observed during Azimuth's field investigations.                                      |
| Black Tern              | <i>Chlidonias niger</i>         | SC  | Colonial nesters typically within cattail marshes and other shallow marsh types. Floating nests.<br><br>ESA Protection: N/A                                                                                                                                                                             | Habitat within study area is not representative of key habitat.                                                                                                                 |
| Blanding's Turtle       | <i>Emydoidea blandingii</i>     | THR | Fen (poor fens), marsh, swamp<br>Open areas of sand or fine gravel<br>Rock-barren<br><br>ESA Protection: Species and general habitat protection                                                                                                                                                         | Blanding's Turtle is a highly aquatic species. Habitat is not representative of key habitat.                                                                                    |
| Bobolink                | <i>Dolichonyx oryzivorus</i>    | THR | Large old fields and meadows, tall grasslands, hayfields<br><br>ESA Protection: Species and general habitat protection                                                                                                                                                                                  | Potentially suitable CUM habitat, although feature is small and surrounded by intensive agriculture. No Bobolink were observed during Azimuth's field investigations.           |
| Butternut               | <i>Juglans cinerea</i>          | END | Forests and hedgerows.<br><br>ESA Protection: Species and general habitat protection                                                                                                                                                                                                                    | A total of 5 Butternut were observed on the property (Figure 2).                                                                                                                |
| Canada Warbler          | <i>Wilsonia canadensis</i>      | SC  | Wet, mixed deciduous-coniferous forests with a well developed shrub layer. Shrub marshes, red-maple stands, cedar stands, black spruce swamps, larch and riparian woodlands along rivers and lakes. (COSEWIC, 2008)<br><br>ESA Protection: N/A                                                          | Habitat within study area is not representative of key habitat. Canada Warbler not documented during Azimuth's field investigations.                                            |
| Chimney Swift           | <i>Chaetura pelagica</i>        | THR | Man-made structures such as chimneys<br>Hollow trees or cavities in old growth or mature forests<br><br>ESA Protection: Species and general habitat protection                                                                                                                                          | No suitable nesting habitat present for species (i.e. No structures). No Chimney Swift were observed during Azimuth's field investigations.                                     |
| Common Five-lined Skink | <i>Plestiodon fasciatus</i>     | SC  | They like to bask on sunny rocks and logs. During the winter, they hibernate in crevices among rocks or buried in the soil.<br>The Southern Shield population can be found underneath rocks on open bedrock in forests.<br><br>ESA Protection: N/A                                                      | Habitat not typical for the species. Furthermore, potential presence is low and therefore was not considered in our SAR assessment.                                             |
| 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)<br><br>ESA Protection: N/A      | Species not expected to be present within study area. Habitat is not representative of key habitat.                                                                             |
| Eastern Meadowlark      | <i>Sturnella magna</i>          | THR | Grasslands, pastures, agricultural fields, old fields, meadows; often overgrown with shrubs<br>Can also use golf courses and sand dunes<br><br>ESA Protection: Species and general habitat protection                                                                                                   | Potentially suitable CUM habitat, although feature is small and surrounded by intensive agriculture. No Eastern Meadowlark were observed during Azimuth's field investigations. |

Table 3: Species at Risk Habitat Summary

AEC11-076b 2121191 / LM Barrie, Barrie, ON

| Common Name                    | Species Name                   | MNR                                                   | Key Habitats Used By Species <sup>1</sup>                                                                                                                                                                                                                                                                                                                                                                                          | Initial Assessment                                                                                                                                                                                                                                                       |
|--------------------------------|--------------------------------|-------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Eastern Musk Turtle            | <i>Sternotherus oderatus</i>   | SC                                                    | Marsh, swamp, fen (bog)<br><br>ESA Protection: N/A                                                                                                                                                                                                                                                                                                                                                                                 | Species not expected to be present within study area. Habitat is not representative of key habitat.                                                                                                                                                                      |
| Eastern Prairie Fringed Orchid | <i>Platanthera leucophaea</i>  | END                                                   | Wetlands, fens, swamps, and tallgrass prairie.<br>Ditches, railroad rights of way.<br><br>ESA Protection: Species and regulated habitat protection                                                                                                                                                                                                                                                                                 | Species not expected to be present within study area. Habitat is not representative of key habitat.                                                                                                                                                                      |
| Eastern Ribbonsnake            | <i>Thamnophis sauritus</i>     | SC                                                    | Marsh, swamp, fen (bog)<br><br>ESA Protection: N/A                                                                                                                                                                                                                                                                                                                                                                                 | Eastern Ribbonsnake is a highly aquatic species. Species not expected to be present within study area. Habitat is not representative of key habitat.                                                                                                                     |
| 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 adits. (Best and Jennings, 1997)<br><br>ESA Protection: Species and general habitat protection                                                                                                                                            | Species not expected to be present on or adjacent to study area. Habitat is not representative of key habitat.                                                                                                                                                           |
| Eastern Wood-pewee             | <i>Contopus virens</i>         | SC                                                    | Forests; typically in clearings or on edges of deciduous and mixed forests.<br><br>ESA Protection: N/A                                                                                                                                                                                                                                                                                                                             | Potentially suitable habitat within FOD community (Figure 2). No Eastern Wood-pewee were observed during Azimuth's field investigations.                                                                                                                                 |
| Golden-winged Warbler          | <i>Vermivora chrysoptera</i>   | SC                                                    | Areas of early successional scrub surrounded by Mature Forests including dry uplands, swamp forests, and marshes (COSEWIC, 2006).<br><br>ESA Protection: N/A                                                                                                                                                                                                                                                                       | Potentially suitable habitat within study area. Golden-winged Warbler not documented during Azimuth's field investigations.                                                                                                                                              |
| Grasshopper Sparrow            | <i>Ammodramus savannarum</i>   | SC                                                    | It lives in open grassland areas with well-drained, sandy soil. It will also nest in hayfields and pasture, as well as alvars, prairies and occasionally grain crops such as barley.<br><br>ESA Protection: N/A                                                                                                                                                                                                                    | Suitable habitat present within study area. Grasshopper Sparrows were observed during Azimuth's field investigations.                                                                                                                                                    |
| Henslow's Sparrow              | <i>Ammodramus henslowii</i>    | END                                                   | They are found in open fields with tall grasses, flowering plants, and a few scattered shrubs. It has also been found in abandoned farm fields, pastures, and wet meadows. It tends to avoid fields that have been grazed or are crowded with trees and shrubs. It prefers extensive, dense, tall grasslands where it can more easily conceal its small ground nest.<br><br>ESA Protection: Species and general habitat protection | Potentially suitable habitat for this species on the property. Henslow's Sparrow was not observed during breeding bird surveys.                                                                                                                                          |
| Least Bittern                  | <i>Ixobrychus exilis</i>       | THR                                                   | Marshes with tall emergent vegetation (i.e. Cattails) with stable water levels with about 50% open water interspersed with vegetated areas and are typically 5-10ha in size.<br><br>ESA Protection: Species and general habitat protection                                                                                                                                                                                         | Species not expected to be present within study area. Habitat is not representative of key habitat.                                                                                                                                                                      |
| 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.<br><br>ESA Protection: Species and general habitat protection                                                                                                                                                                                                   | Forest habitat is present on the property, however, this does not offer ideal conditions for bats given its relatively small size and proximity to adjacent habitat features (i.e. Located within an agricultural setting with no adjacent wetland/open water features). |
| Massasauga Rattlesnake         | <i>Sistrurus catenatus</i>     | THR (Great Lakes St Lawrence Population)              | Tall grass prairie, bogs, marshes, shorelines, forests and alvars. Within all of these habitats, Massasaugas hibernate in the crevases in bedrock, sphagnum swamps, tree root cavities and animal burrows.<br><br>ESA Protection: Species and general habitat protection                                                                                                                                                           | Potential habitat present within study area, although likelihood of pressence is low therefore was not considered in our detailed assessment.                                                                                                                            |
| Milksnake                      | <i>Lampropeltis triangulum</i> | NAR (As of June 15, 2016 Milksnake was Downlisted SC) | Rock-barren Field<br><br>ESA Protection: N/A                                                                                                                                                                                                                                                                                                                                                                                       | Likely to occur within the study area.                                                                                                                                                                                                                                   |
| Monarch Butterfly              | <i>Danaus plexippus</i>        | SC                                                    | Caterpillars - Milkweed in meadows and open areas<br>Adults - Meadows and diverse habitats with a variety of wildflowers<br><br>ESA Protection: N/A                                                                                                                                                                                                                                                                                | No significant areas of Milkweed. No potentially suitable habitat on the property.                                                                                                                                                                                       |

Table 3: Species at Risk Habitat Summary

AEC11-076b 2121191 / LM Barrie, Barrie, ON

| Common Name             | Species Name                                    | MNR | Key Habitats Used By Species <sup>1</sup>                                                                                                                                                                                                                                                                          | Initial Assessment                                                                                                                                                                                                                                                       |
|-------------------------|-------------------------------------------------|-----|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 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.<br><br>ESA Protection: Species and general habitat protection                                                       | Forest habitat is present on the property, however, this does not offer ideal conditions for bats given its relatively small size and proximity to adjacent habitat features (i.e. Located within an agricultural setting with no adjacent wetland/open water features). |
| Northern Map Turtle     | <i>Graptemys geographica</i>                    | SC  | Littoral (shallow water) habitat and basking sites along open water<br><br>ESA Protection: N/A                                                                                                                                                                                                                     | Species not expected to be present on or adjacent to the property. Habitat is not representative of key habitat.                                                                                                                                                         |
| Olive-sided Flycatcher  | <i>Contopus cooperi</i>                         | SC  | Natural forest openings, forest edges near natural openings (such as wetlands) or open to semi-open forest stands. Occasionally human made openings (such as clear cuts). Presence of tall snags and residual live trees is essential. (COSEWIC, 2007)<br><br>ESA Protection: N/A                                  | Olive-sided Flycatcher was not observed during breeding bird surveys. Habitat is not representative of key habitat.                                                                                                                                                      |
| Peregrine Falcon        | <i>Falco peregrinus</i>                         | THR | Cliff<br><br>ESA Protection: Species and regulated habitat protection                                                                                                                                                                                                                                              | Species not expected to be present on or adjacent to the study area. Habitat is not representative of key habitat.                                                                                                                                                       |
| Purple Twayblade        | <i>Liparis liliifolia</i>                       | THR | Open oak woodland and savannah, mixed deciduous forest, shrub thicket, shrub alvar, deciduous swamp, and even conifer plantations.<br><br>ESA Protection: Species and general habitat protection                                                                                                                   | Potentially suitable habitat within forest habitat. Species not observed during field investigations.                                                                                                                                                                    |
| 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#).<br><br>ESA Protection: N/A                                                                                                      | Potentially suitable habitat within hedgerows. Red-headed Woodpecker was not identified during Azimuth's bird surveys.                                                                                                                                                   |
| Short Eared Owl         | <i>Asio flammeus</i>                            | SC  | Lives in open areas such as grasslands, marshes and tundra where it hunts for small mammals, especially voles. Often Nest on the ground.<br><br>ESA Protection: N/A                                                                                                                                                | Species not expected to be present within study area. Habitat is not representative of key habitat.                                                                                                                                                                      |
| Snapping Turtle         | <i>Chelydra serpentina</i>                      | SC  | Marsh, swamp, fen (poor fens)<br>Shallow waters in lakes or along streams<br>Open areas of sand or gravel<br><br>ESA Protection: N/A                                                                                                                                                                               | Species not expected to be present within study area. Habitat is not representative of key habitat.                                                                                                                                                                      |
| Spotted Wintergreen     | <i>Chimaphila maculata</i> var. <i>Maculata</i> | END | Usually occurs in dry oak-pine woodland habitats with sandy soils. Typically, dominant tree species include White Pine, Red Oak, Black Oak, and American Beech. The species does best in semi-open habitats.<br><br>ESA Protection: Species and general habitat protection                                         | Species not expected to be present within study area. Habitat is not representative of key habitat.                                                                                                                                                                      |
| Tri-colored Bat         | <i>Perimyotis subflavus</i>                     | END | During the summer, the Tri-colored Bat is found in a variety of forested habitats. It forms day roosts and maternity colonies in older forest and occasionally in barns or other structures. They forage over water and along streams in the forest.<br><br>ESA Protection: Species and general habitat protection | Forest habitat is present on the property, however, this does not offer ideal conditions for bats given its relatively small size and proximity to adjacent habitat features (i.e. Located within an agricultural setting with no adjacent wetland/open water features). |
| Whip-Poor-Will          | <i>Caprimulgus vociferus</i>                    | THR | Areas with a mix of open and forested areas<br><br>ESA Protection: Species and general habitat protection                                                                                                                                                                                                          | Not expected to occur on the property. Habitat is not representative of key habitat.                                                                                                                                                                                     |
| Wood Thrush             | <i>Hylocichla mustelina</i>                     | SC  | Typically associated with moist mature deciduous and mixed forests with a well developed understory.<br><br>ESA Protection: N/A                                                                                                                                                                                    | Potentially suitable habitat within FOD (Figure 2). No Wood Thrush were observed during Azimuth's field investigations.                                                                                                                                                  |

1. Habitat as outlined within MNR'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.



**LEGEND:**

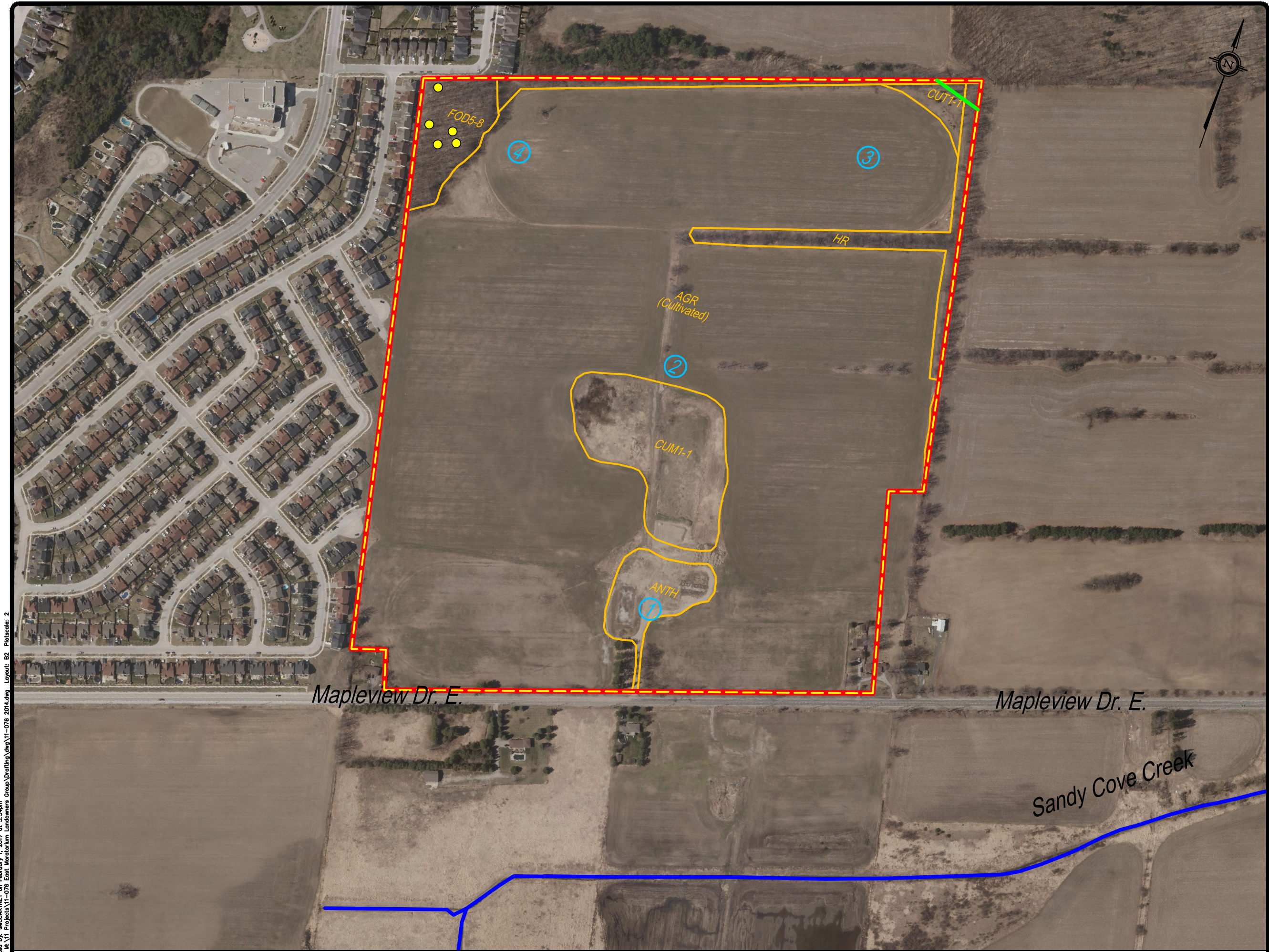
- Approx. Property Boundary
- Hewitt's Secondary Plan Area

600m 0 1200m  
HORIZONTAL SCALE 1: 40,000



Study Area Location  
EMLG 2121191 Ont./LM Barrie  
Hewitt's Secondary Plan  
Barrie, ON

|                            |            |
|----------------------------|------------|
| DATE ISSUED: December 2016 | Figure No. |
| CREATED BY: JLM            | 1          |
| PROJECT NO.: 11-076m       |            |
| REFERENCE: Google Maps     |            |



**LEGEND:**

- Property Boundary/Study Area
- Bird Survey Stations
- Butternut (END)
- Watercourse
- Natural Heritage Core
- 30m Buffer to Natural Heritage Core Areas
- ANTH Anthropogenic
- HR Hedgerow
- Vegetation Communities
- CUM1-1 Dry-Moist Old Field Meadow Type
- CUT1-1 Sumac Cultural Thicket Type
- FOD5-8 Dry-Fresh Sugar Maple-White Ash Deciduous Forest Type

60m 0 120m  
HORIZONTAL SCALE 1: 4,000

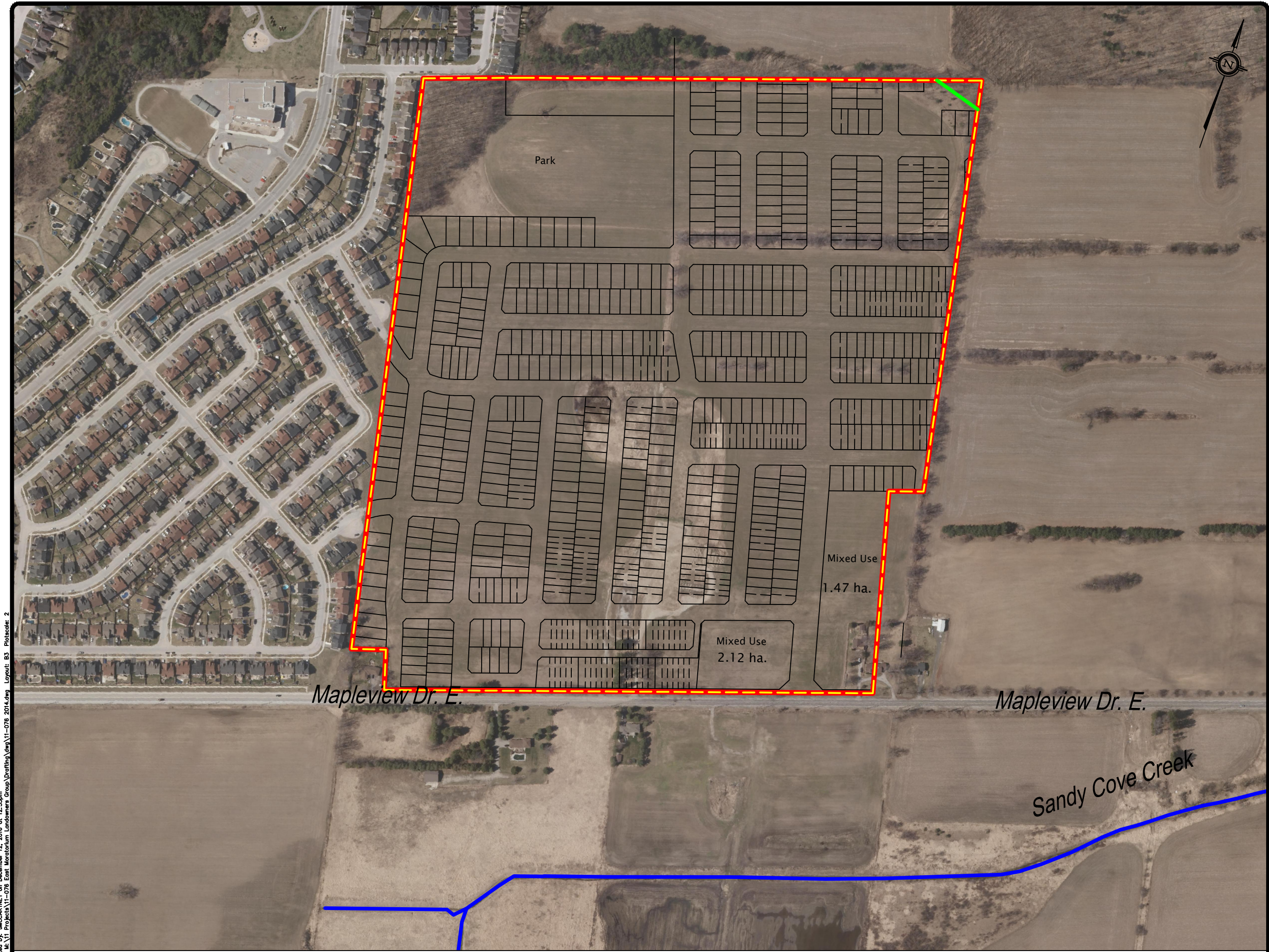
**AZIMUTH ENVIRONMENTAL CONSULTING, INC.**

Environmental Features

2121191 Ont. Inc./LM Barrie Holdings Inc.  
Hewitt's Secondary Plan, Barrie, ON

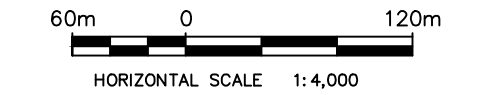
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| DATE ISSUED: | December 2016        | Figure No. |
| CREATED BY:  | JLM                  | 2          |
| PROJECT NO.: | 11-076b              |            |
| REFERENCE:   | First Base Solutions |            |

Plotted by: JMCARTNEY on February 1, 2017 at 3:34pm  
File: M:\11 Projects\11-076 East Moratorium Landowners Group\Drafting\dwg\11-076.dwg Layout: B2 Plot scale: 2



LEGEND:

- Property Boundary/Study Area
- Watercourse
- Species at Risk Screening



|                                                                                  |                      |                     |
|----------------------------------------------------------------------------------|----------------------|---------------------|
| Proposed Development                                                             |                      |                     |
| 2121191 Ont. Inc./LM Barrie Holdings Inc.<br>Hewitt's Secondary Plan, Barrie, ON |                      |                     |
| DATE ISSUED:                                                                     | December 2016        | Figure No.<br><br>3 |
| CREATED BY:                                                                      | JLM                  |                     |
| PROJECT NO.:                                                                     | 11-076b              |                     |
| REFERENCE:                                                                       | First Base Solutions |                     |