

Environmental Impact Study - 360 Lockhart Road, Barrie



2019-08-30

Prepared for:
Kingslea Developments Ltd.

Cambium Reference No.: 9121-001

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1.0 Introduction

Cambium Inc. (Cambium) was retained by Kingslea Developments Ltd. to conduct an Environmental Impact Study (EIS) at 360 Lockhart Road in the City of Barrie (the Site; Figure 1). The EIS is required to address potential negative impacts to natural heritage features identified during the preliminary planning review process, in support of a Planning Act application for an industrial development. The Site is located within the jurisdiction of the LSRCA and is entirely mapped as a regulated area under O.Reg.179/06, due to its proximity to the Lover's Creek Wetland, a provincially significant wetland (PSW) feature, and associated valleylands. As such, the EIS was prepared in consideration of the regulations on development adjacent to watercourses and wetlands imposed by the Lake Simcoe Region Conservation Authority: *Regulation of Development, Interference with Wetlands and Alteration to Shorelines and Watercourses (Ontario Regulation 179/06)* under the Conservation Authorities Act (1990).

The Endangered Species Act, 2007 (ESA) (Government of Ontario, 2018) protects endangered or threatened species and their habitats from harm or destruction. Habitat of endangered and threatened species is protected under provincial natural heritage policy; however, it is also the proponent's responsibility to avoid harming or harassing these species and damaging or destroying their legally protected habitats. This EIS includes a species at risk (SAR) screening to determine if the Site provides suitable habitat for any provincially or federal listed at-risk species.

In order to address the EIS requirements of the regulatory agencies, Cambium has conducted this EIS to provide an evaluation of reasonably anticipated ecological impacts, positive or negative, that may arise as a result of this proposed development, to guide the planning decision making process.

1.1 Proposed Development and Conceptual Site Plan

We understand that the Client has an agreement in place to purchase the subject property, and is pursuing planning approvals for an industrial development. No Site Plan was available



at the time of reporting. As a result, a constraints-based approach was applied to establish a developable area (outside of natural features and their buffers).

1.2 Terms of Reference

The Lake Simcoe Region Conservation Authority (LSRCA) was contacted directly to confirm the Terms of Reference for the subject study. A record of Cambium's correspondence with LSRCA staff (Kate Lillie, Natural Heritage Ecologist) is included in Appendix A.

2.0 Applicable Natural Heritage Policy and Regulation

2.1 Provincial Policy Statement, 2014

Section 2.1 of the Provincial Policy Statement (PPS) (Ministry of Municipal Affairs and Housing, 2014) protects the form and function of natural heritage features, as defined by the PPS. Natural heritage features included in the PPS are provincially significant wetlands (PSW), significant coastal wetlands, significant woodlands, significant valleylands, significant wildlife habitat (SWH), significant areas of natural and scientific interest (ANSI), fish habitat, and the habitat of endangered and threatened species. Given their significance, development is prohibited within PSWs in Ecoregions 5E, 6E, and 7E and within significant coastal wetlands. Development in fish habitat and the habitat of endangered and threatened species shall only be permitted in accordance with provincial and federal requirements. Development within other natural heritage features and on lands adjacent to all natural heritage features are permitted only if demonstrated that there will be no negative impacts on the feature or their ecological function. Development includes the creation of a new lot, a change in land use, or the construction of buildings and structures requiring approval under the Planning Act.

2.2 Growth Plan for the Greater Golden Horseshoe, 2019

The Greater Golden Horseshoe is one of the most dynamic and fast-growing regions in North America. To address the challenges of increased development within the area, the Growth Plan for the Greater Golden Horseshoe, 2019 (GPGGH) builds on the PPS “*to establish a unique land use planning framework for the Greater Golden Horseshoe that supports achievement of complete communities, a thriving economy, a clean and healthy environment, and social equity*” (MMAH, 2019). In general, the GPGGH seeks to preserve agricultural lands, water resources, and natural areas by directing growth to settlement areas as defined in municipal Official Plans. The GPGGH contains policies regarding a provincial Natural Heritage System (NHS), key hydrologic features (KHF), key hydrologic areas (KHAs), and key natural heritage features (KNHFs) (see Table 1).

Table 1 Protected Features of the GPGGH

Key Hydrologic Features	Key Natural Heritage Features
<ul style="list-style-type: none"> • Permanent Streams • Intermittent Streams • Inland Lakes and their Littoral Zones • Seepage Areas and Springs • Wetlands 	<ul style="list-style-type: none"> • Habitat of Endangered and Threatened Species • Significant Wildlife Habitat • Fish Habitat • Sand Barrens • Wetlands • Savannahs • Life Science Areas of Natural and Scientific Interest (ANSI) • Tallgrass Prairies • Significant Valleylands • Alvars • Significant Woodlands

As a result of recent amendments, policies that reference the provincial NHS apply only if the local municipality has adopted provincial NHS mapping through an update to their Official Plan; until that time, these policies only apply to natural heritage systems identified in Official Plans that were approved and in effect as of July 1, 2017.

Section 4.2.2.6 of the GPGGH states the following:

Beyond the Natural Heritage System for the Growth Plan, including within settlement areas, the municipality:

- a) will continue to protect any other natural heritage features and areas in a manner that is consistent with the PPS; and*
- b) may continue to protect any other natural heritage system or identify new systems in a manner that is consistent with the PPS.*

Given that the Site is located within the City's settlement area, the more restrictive natural heritage policies in the GPGGH do not apply; however, natural features must be protected in a manner that is consistent with the PPS.

2.3 Lake Simcoe Protection Plan, 2009

In response to a decline in the ecological integrity of Lake Simcoe, the Lake Simcoe Protection Act was passed in 2008 and the Lake Simcoe Protection Plan (LSPP) was established in 2009 (Ministry of Environment and Climate Change, 2016). The LSPP applies to the Lake Simcoe watershed and focuses on issues such as aquatic life, water quality and quantity, ecosystem health at the watershed scale, invasive species, climate change, and recreational activities. The LSPP includes policies with respect to the Lake Simcoe shoreline, key natural heritage features (KNHF), and key hydrologic features (KHF). KNHF include wetlands, significant woodlands, significant valleylands, and natural areas abutting Lake Simcoe. KHF include wetlands, permanent and intermittent streams, and lakes other than Simcoe.

With respect to development and site alteration proposals, policies 6.1 – 6.3, 6.5, 6.11 and 6.20 – 6.29 of the LSPP provide enhanced protections for KNHF and KHF; however, policies 6.32 - 6.34 apply to existing settlement areas and provide exemptions to the above policies, as follows:

6.32-dp: *Policies 6.32 - 6.34 apply to existing settlement areas and areas of Lake Simcoe adjacent to these lands, including the littoral zone, and these areas are not subject to policies 6.1 – 6.3, 6.5, 6.11 and policies 6.20 - 6.29.*

6.33-dp: *An application for development or site alteration shall, where applicable:*

a. increase or improve fish habitat in streams, lakes and wetlands, and any adjacent riparian areas;

b. include landscaping and habitat restoration that increase the ability of native plants and animals to use valleylands or riparian areas as wildlife habitat and movement corridors;

c. seek to avoid, minimize and/or mitigate impacts associated with the quality and quantity of urban run-off into receiving streams, lakes and wetlands; and

d. establish or increase the extent and width of a vegetation protection zone adjacent to Lake Simcoe to a minimum of 30 metres where feasible.

6.34-dp: *Where, through an application for development or site alteration, a buffer is required to be established as a result of the application of the PPS, the buffer shall be composed of and maintained as natural self-sustaining vegetation.*

As noted above, the Site is located within the City's Settlement Area and Lover's Creek is located within 120 m of the subject property.

2.4 City of Barrie Official Plan

According to the City of Barrie's mapping, Schedule A– Land Use (City of Barrie, 2018), the land use designation of the subject property is mainly 'General Industrial' with a small portion of the lands to the east designated as 'Environmental Protection Area'. Surrounding land use designations are predominantly 'General Industrial' to the west of the property and 'Environmental Protection Area' to the east and northeast.

A portion of the Site is also identified in the City of Barrie Official Plan as a Level 1 EPA feature with an Existing Development designation subject to Section 3.5.2.4 (d). The Existing Development designation would allow the Site to be reviewed under the policies of a Level 2 feature; however, there are provisions in the plan that first require the assessment as per a Level 1 EPA feature where no development is allowed in sensitive features such as PSWs and SAR habitat. Based on our preliminary review, the Site does not contain sensitive (Level 1) features that would be strictly excluded from a potential development envelope.

2.5 City of Barrie Zoning By-law No. 2009-141

According to Schedule A, Map 1 (City of Barrie, 2017), the Site is entirely zoned 'Light Industrial' (LI). Zoning of surrounding properties includes 'Light Industrial' (LI) to the north and west, and 'Environmental Protection Area' to the east.

2.6 Endangered Species Act, 2007

Species listed as endangered or threatened on the Species at Risk in Ontario (SARO) list are protected under the provincial *Endangered Species Act, 2007* (ESA) (Government of Ontario, 2018). Section 9(1) of the ESA prohibits a person from killing, harming, harassing, capturing or taking a member of a species listed as endangered, threatened, or extirpated. Section 10(1) of the ESA prohibits the damage or destruction of habitat of species listed as endangered or threatened. Protection of special concern species is provided through designation of their habitat as SWH under the PPS.

2.7 Species at Risk Act, 2002

The federal *Species at Risk Act* (SARA) was adopted in 2002 to prevent endangered or threatened species from becoming extinct or extirpated, to help in the recovery of endangered, threatened and extirpated species, and to manage species of special concern to help prevent them from becoming endangered or threatened. Habitat which is deemed necessary for the survival/recovery of a listed wildlife species, referred to as Critical Habitat, is protected under Section 56 of the SARA. The SARA applies to all federal lands in Canada; however, at-risk aquatic and migratory bird species located on private property in Ontario also receive protection under the Act.

2.8 Conservation Authority Regulation (O.Reg. 179/06)

The Site is located entirely within Lake Simcoe Region Conservation Authority (LSRCA) Regulated Area due to its proximity to a Provincially Significant Wetland (PSW; Lover's Creek Swamp) and is subject to the LSRCA Development, Interference with Wetlands and Alteration to Shorelines and Watercourses Regulation (O.Reg. 179/06), under the Conservation Authorities Act. As per O.Reg 179/06, LSRCA is required to "*prohibit, regulate or provide permission for straightening, changing, diverting or interfering in any way with the existing channel of a river, creek, stream, watercourse or changing or interfering with a wetland*" and "*prohibit or regulate or provide permission for development if the control of flooding, erosion, dynamic beaches, pollution or the conservation of land may be affected by the development*".

Due to its proximity to a PSW (Lover's Creek Swamp), a work permit is required. LSRCA policy requires that an EIS be prepared to assess possible hydrological and ecological impacts of the proposed development on regulated features.

2.9 Lake Simcoe Region Conservation Authority Ecological Offsetting Plan

The LSRCA Ecological Offsetting Plan was created in 2017 in response to the impacts to natural features as a result of development. The concept of ecological offsetting for the loss of natural heritage features supports the principle of 'no net loss'. This plan promotes the use of a mitigation hierarchy calling for avoidance, minimization, mitigation, and as a last resort, compensation. Development proposals that result in the loss of a wetland or woodland natural feature will be required to compensate for the loss. Section 3.3.2.1 states that ecological offsetting will not be required for woodlands smaller than 0.5 ha if it can be demonstrated they are part of a managed plantation or if they do not meet either the following criteria:

- Any woodland within 30 m of a key natural heritage/key hydrological or protected feature.
- Any woodland containing a provincially rare treed vegetation community (S1, S2 or S3 in its ranking).

LSRCA requires that a Natural Heritage Evaluation (or Environmental Impact Study) be prepared prior to the approval of any application involving compensation, to assess potential ecological impacts to natural features associated with the proposed development. An Ecological Offsetting Strategy (EOS) will also be required to demonstrate how the loss of the natural feature will be compensated for, and that the offsetting will result in a 'net gain' of natural features. In certain instances where it is not feasible for the proponent to compensate for the loss, cash-in-lieu or land purchase may be considered as part of the EOS.

LSRCA's Ecological Offsetting Plan applies to the proposed development as woodlands greater than 0.5 ha in size have been identified on the Site.

3.0 Technical Approach and Data Collection Methods

3.1 Background Information Review

Existing background information pertaining to the Site and surrounding landscape was compiled and reviewed, as part of a comprehensive desktop exercise, to better understand local biophysical conditions. In southern Ontario, readily available data includes aerial orthophotography, topographic base mapping, and geological records. Natural environment and land use schedules prepared in support of the City of Barrie Official Plans were reviewed to acquire municipal data. Natural area and species occurrence records were obtained from digital resources and reference materials. The comprehensive desktop review for this Site included the following resources:

- Natural Heritage Areas: Make-a-map (Ministry of Natural Resources and Forestry, 2018); Accessed May 5, 2019
- Ontario Reptile and Amphibian Atlas (Ontario Nature, 2018); Accessed May 7, 2019
- Ontario Breeding Birds Atlas (2001-2005) (Bird Studies Canada, 2005); Accessed May 5, 2019
- 1:10,000 Ontario Base Mapping (Ministry of Natural Resources and Forestry, 2013)
- LSRCA Regulated Area mapping
- City of Barrie Official Plan and Zoning By-law Mapping
- Species Range Maps (Various Sources)

Existing local topographic and natural heritage feature mapping is shown on Figure 2.

3.2 Field Investigations

Information gathered through the background information review was used to guide the development of the fieldwork program. The purpose of the site visit(s) was to verify information acquired through existing documentation and to gather additional site-specific information. The following field-based activities were carried out on the Site and are summarized in Table 2.

Representative Site photos are included in Appendix B and locations of specific surveys are shown on Figure 3.

Table 2 Summary of Field Investigations

Date	Time On Site	Weather Conditions	Observer	Activities
2019-05-05	2030-2115	16°C, 0% cloud, Wind Code = 0, Noise Code = 2	Danielle Langlois	Amphibian Survey #1
2019-05-09	0915-1030	13°C, 100% cloud, Wind Code = 3	Danielle Langlois	Bat Maternity Roost Survey
2019-05-29	0730-0800	10°C, 100% cloud Wind Code = 0 Noise Code = 2-3	Ernie Silhanek	Breeding Bird Survey #1
2019-05-29	2115-2130	16°C, 0% cloud, Wind Code = 0 Noise Code = 2	Danielle Langlois	Amphibian Survey #2
2019-06-12	0705-0720 0915-1030	13°C, 0% cloud Wind Code = 0 Noise Code = 2-3	Ernie Silhanek	Breeding Bird Survey #2 Ecological Land Classification and Vegetation Inventory Wetland Delineation
2019-07-03	2130-2145	25°C, 0% cloud Wind Code = 0 Noise Code = 2	Danielle Langlois	Amphibian Survey #3

Notes: Wind speed is reported as a Beaufort Wind Scale value (0 = 0-2 kph, 1 = 3-5 kph, 2 = 6-11 kph, 3 = 12-19 kph, 4 = 20-30 kph, 5 = 31-39 kph, 6 = 40-50 kph). Noise is reported based on background noise levels: Index 0 – no appreciable effect, 1 – slightly affecting sampling, 2 – moderately affecting sampling, 3 – seriously affecting sampling, 4 – profoundly affecting sampling.

3.2.1 Ecological Land Classification and Vegetation Inventory

The Ecological Land Classification (ELC) System for Southern Ontario (Lee, 1998) was used to classify vegetation communities on the Site. Definitions of vegetation types are derived from the ELC for Southern Ontario First Approximation Field Guide (Lee, 1998) and the revised 2008 tables. ELC units were initially identified by aerial orthophoto interpretation during the desktop review. Field investigations served to confirm the type and extent of communities

through vegetation inventory and soils assessment. The vegetation inventory for the Site was conducted on July 12, 2019.

3.2.2 Wetland Boundary Delineation

The Site was visited during the early spring in order to document the extent of surface flooding at that time of year. This information is used to assist with the determination of wetland boundaries during the growing season. The presence of wetlands on adjacent lands was confirmed through field investigations during the growing season. Wetland boundaries were determined using the 50% vegetation rule, as specified by the Ontario Wetland Evaluation System (OWES) for Southern Ontario, 3rd Edition (Ministry of Natural Resources, 2013).

The wetland boundary delineation for the Site was conducted on July 12, 2019. In addition, the wetland boundary was confirmed in the field with LSRCA staff (Kate Lillie, Natural Heritage Ecologist) on July 15, 2019.

3.2.3 Breeding Bird Surveys

Two (2) breeding bird surveys were carried out during the peak breeding season in May and June. Point counts were completed using components of the Ontario Breeding Bird Atlas (OBBA) Guide for Participants (Ontario Breeding Bird Atlas, 2001) and the Forest Bird Monitoring Program (Cadman, Dewar, & Welsh, 1998) based on habitat characteristics. As outlined in the OBBA protocol, point counts are to be completed between dawn and five (5) hours after dawn, when wind speed is low (<19 km/h) and in the absence of rain or thick fog. All species observations (visual and auditory) were recorded during a five (5) minute period. Each species observed was classified (Confirmed, Probable, Possible or Observed) and assigned a code based on the highest level of breeding evidence, as defined by the OBBA protocol.

The breeding bird surveys for the Site were conducted on May 29 and July 12, 2019. For the purpose of this study, one (1) point count station was established to document avian activity on the Site. The location of the point count station is shown on Figure 3.

3.2.4 Amphibian Surveys

The presence of frog and toad breeding habitat was determined using aural (hearing based) surveys following the Marsh Monitoring Program Participant's Handbook for Surveying Amphibians (Bird Studies Canada, 2008). According to the protocol, three (3) amphibian surveys should be conducted between April and July, at least 15 days apart, in order to capture the full extent of breeding activity during the breeding season. The surveys should be conducted under appropriate weather conditions: when wind speed is low (<19 km/h; Beaufort Wind Scale of 3 or less) and light or no precipitation occurring (light rain is ideal but can also impact ability to hear and differentiate calls). Certain amphibians species call when air/water temperatures reach specific levels; therefore, nighttime air temperature should be greater than 5°C for the first survey, greater than 10°C for the second survey and greater than 17°C for the third survey. Survey points are established during the first survey and are re-visited during following surveys. At each survey point, all species calls are documented over a period of 5 minutes, using a 100 m semi-circular survey area fronting of the survey station, using call intensity codes established by the protocol:

- Code 0: No calls heard
- Code 1: Calls can be counted individually (calls do not overlap)
- Code 2: Calls overlap, but numbers of individuals can be estimated
- Code 3: Calls overlap and are continuous (full chorus) therefore a count estimate is unreliable

Recommended monitoring windows for the Site (located between the 43rd and 47th parallels) are April 15-30, May 15-30, and June 15-30.

The amphibian surveys for the Site were conducted on May 5, May 29, and July 3, 2019. For the purpose of this study, one (1) amphibian survey station was established to document amphibian breeding activity. The location of the survey station is shown on Figure 3.

3.2.5 Targeted Species at Risk Surveys

3.2.5.1 Bat Maternity Roost Habitat Surveys

To determine if suitable habitat for bats existed on/or adjacent to the Site, Cambium staff conducted a bat maternity roost survey on May 9, 2019, using the methods detailed in the *Bat and Bat Habitats: Guidelines for Wind Power Projects* (the Guideline) (Ministry of Natural Resources, 2011). Although this MNRFP protocol is geared towards determining significant wildlife habitat, the purpose of the survey was to determine the presence of bats and bat habitat within the Site. The guideline requires sites with ≤ 10 hectares (ha) treed forest or swamp ELC community types, a minimum of 10 randomly selected plots to be established, with an additional plot added per hectare, to a maximum of 35 plots for the project area. At each plot, the number of snag/cavity trees ≥ 25 cm DBH (diameter at breast height) within a 12.6 m radius (0.05 ha) is to be recorded. A calculation is then made to determine the snag density and if the number of cavity trees found met the criteria for maternity surveys. A snag or cavity tree is defined as a standing live or dead tree ≥ 25 cm DBH, with cracks, crevices, hollows, cavities and/or loose or naturally exfoliating bark appropriate for bat roosting.

For the purpose of this study, given that the Site is relatively small, the entire woodlot was surveyed for snag or cavity trees. Individual trees were marked with a GPS and the density of snag/cavity trees was calculated by dividing the total number of trees observed by the size of the wooded area surveyed.

4.0 Characterization of Natural Features and Functions

4.1 Landscape Position and Topography

The subject Site is located northeast of the intersection of Lockhart Road and Huronia Road, in the City of Barrie, Ontario. The existing 1.37 ha lot is currently vacant, consisting of woodlands and valleylands, and is adjacent to the Lover's Creek Wetland, a mapped PSW located to the east. The Site is bordered by undeveloped woodlands and valley lands to the north, the Lover's Creek corridor to the east, Lockhart Road to the south, and Huronia Road to the west. A golf course and industrial developments occupy areas across Lockhart Road and Huronia Road, respectively. The Site generally slopes from west to east, with the east portion of the Site being more steeply sloped towards Lover's Creek and associated wetlands.

The Site is located within Ecoregion 6E of Ontario (Crins, Gray, Uhlig, & Wester, 2009).

Representative Site photos are provided in Appendix B.

4.2 Surface Water and Drainage Features

Lover's Creek flows northwards within the mapped PSW, beyond the eastern property boundary. No surface water features, drainage features, springs, or seeps were observed on the Site during the field investigation. A lack of standing water following rain events indicated that the Site has relatively good internal drainage.

4.3 Wetland Delineation

The mapped PSW was confirmed as being confined to the adjacent lands, beyond the eastern property boundary. The wetland boundary on the adjacent lands was initially delineated (staked) in the field by OWES certified Cambium staff. The boundary of the PSW appeared to coincide with an elevation change at the base of the slope. This distinct line represented a change from the edge of the swamp habitat to the upland slope. A later site visit was carried out with LSRCA staff (Kate Lillie, Natural Heritage Ecologist) on July 15, 2019 to verify the wetland boundary delineation. The wetland boundary was slightly adjusted at that time, and is shown on Figure 3. LSRCA has advised that the original (i.e., mapped) PSW boundary should

be used to inform the development limit unless the boundary is formally amended through consultation with MNRF and the City of Barrie (the landowner).

4.4 Vegetation Communities

A total of two (2) distinct vegetation communities and 35 plant species were identified on the Site. The vegetation communities were initially classified through aerial photograph interpretation and were confirmed through the vegetation inventories conducted on July 12, 2019. The extents of the vegetation communities identified on the Site are illustrated in Figure 3. Representative photos are included in Appendix B and a vegetation species list is provided as Appendix C.

Dry – Fresh White Cedar – Poplar Mixed Forest (ELC code: FOM4-2)

Eastern White Cedar (*Thuja occidentalis*) dominated this forest community with associates of Trembling Aspen (*Populus tremuloides*), Sugar Maple (*Acer saccharum*), White Ash (*Fraxinus americana*), Eastern White Pine (*Pinus strobus*) and Black Cherry (*Prunus serotina* var. *serotina*). The herbaceous layer consisted of Upright Yellow Wood-sorrel (*Oxalis stricta*), Tall Goldenrod (*Solidago altissima*), Posion Ivy (*Toxicodendron radicans*), Downy Arrowwood (*Viburnum rafinesqueanum*) and Canada Enchanter's Nightshade (*Circaea canadensis* ssp. *canadensis*).

Red Pine Coniferous Plantation (ELC code: CUP 3-1)

This community was located along the southern portion of the property. The plantation was dominated by Red Pine (*Pinus resinosa*) with associates of Eastern White Pine (*Pinus strobus*), Black Cherry (*Prunus serotina* var. *serotina*), White Ash (*Fraxinus Americana*) and Scots Pine (*Pinus sylvestris* var. *sylvestris*). The shrub layer contained Red Elderberry (*Sambucus racemosa* ssp. *pubens* var. *pubens*) and Choke cherry (*Prunus virginiana* var. *virginiana*). The herbaceous layer consisted of Herb-Robert (*Geranium robertianum*), Wild Red Raspberry (*Rubus idaeus* ssp. *strigosus*), King Devil Hawkweed (*Pilosella piloselloides* ssp. *praealta*), Bull Thistle (*Cirsium vulgare*), Bittersweet Nightshade (*Solanum dulcamara*),

Riverbank Grape (*Vitis riparia*), Spotted Jewelweed (*Impatiens capensis*) and Field Horsetail (*Equisetum arvense*).

4.5 Birds and Habitat Features

A total of 110 bird species were identified within the general area of the Site through the OBBA (10 km UTM Grid Square 17PK00), as listed in Appendix E. Of these, there were 12 species listed on the COSEWIC list and 12 species listed on the SARO list. These at-risk species are included in the habitat-based screening for SAR presented in Section 4.9.

Breeding bird surveys were completed and a total of 12 bird species were identified on or adjacent to the Site, as detailed in Appendix E. Of these, none had probable or confirmed breeding evidence.

Species recorded on the Site are common in woodland communities. The Site does not provide interior forest habitat for birds as no area of the woodland meets MNRF criteria (i.e., all areas of the feature are less than 100 m from the outer forest edge).

One (1) SAR bird was observed during the breeding bird surveys: Eastern Wood-pewee (*Contopus virens*) is provincially listed as special concern; however, no probable or confirmed breeding evidence was observed.

4.6 Amphibians and Habitat Features

A total of nine (9) amphibian species were identified within the general area of the Site through the ORAA (10 km UTM Grid Square 17PK00). Of these, there was one (1) species listed on the COSEWIC list and none were listed on the SARO list. The at-risk species of interest is included in the habitat-based screening for SAR presented in Section 4.9.

Three (3) amphibian surveys were conducted to assess frog and toad breeding activity on the Site. A summary of amphibian survey results is provided in Table 3.

Table 3 Summary of Amphibian Survey Results

Date	Species	Maximum Call Intensity	Number of Individuals	Inside or Outside of Survey Area	Direction
May 5, 2019	Spring Peeper	3	N/A	Inside	NE
May 29, 2019	-	-	-	-	-
July 3, 2019	-	-	-	-	-

Notes: "-" indicates no calls heard

No at-risk amphibians were recorded during the call surveys. The one (1) species recorded during the amphibian surveys was Spring Peeper (*Pseudacris crucifer*). All amphibian calls were heard coming from the northeast, in the vicinity of the Lover's Creek PSW. During the 2019 field investigations no vernal pools or areas suitable for amphibian breeding were recorded on the Site. The subject property provides marginal habitat for amphibian species, particularly for tree frogs.

4.7 Reptiles and Habitat Features

A total of four (4) reptile species were identified within the general area of the Site through the ORAA (10 km UTM Grid Square 17PK00). Of these, three (3) species were listed on the COSEWIC list and one (1) species was listed on the SARO list. These at-risk species are included in the habitat-based screening for SAR presented in Section 4.9. During the 2019 field investigations, no candidate hibernaculum sites for snakes or turtle nesting activity was noted on the Site.

4.8 Mammals and Habitat Features

The results of the bat maternity roost surveys (see Section 3.2.5.1) revealed no candidate snag/cavity trees. No additional incidental wildlife observations were documented during the site visits. Due to its setting, the Site is likely used by small mammal species common to wooded lands in rural areas of South-central Ontario, including Porcupine (*Erethizon dorsatum*), Red Squirrel (*Sciurus vulgaris*), and Raccoon (*Procyon lotor*). Given the presence of roads immediately adjacent to and surrounding the Site (Huron Road, Lockhart Road,

Highway 400, Mapleview Drive East) and the surrounding lands uses, the Site does not likely act as a significant movement corridor for wildlife. Conversely, the adjacent riparian wetlands and valleylands to the east (associated with Lover's Creek) provide a continuous corridor with cover that would facilitate mammal movement through the area.

4.9 Species at Risk

A SAR occurrence list has been compiled through the review of background information sources (as listed in Section 3.1). In addition, the SAR occurrence list has been augmented with direct field observations as detailed in the previous sections. Cambium has employed a habitat-based screening, supplemented with direct field surveys when necessary, in order to identify suitable habitat for at-risk species on or adjacent to the Site. A detailed habitat suitability analysis is provided in Appendix E and a discussion of the results is provided below.

The following SAR had high potential for habitat on or adjacent to the Site and were confirmed through direct field observations:

- Eastern Wood-pewee (SC)

In addition, the following SAR had moderate potential for habitat on or adjacent to the Site but were not observed during the 2019 breeding bird surveys:

- Wood Thrush (THR/SC)

5.0 Assessment of Natural Heritage Significance

Based on information gathered from the background review and field investigations, five (5) natural heritage feature types that receive protection under provincial policy were considered in our assessment of candidate features on the Site and adjacent lands: Wetlands, Significant Woodlands, Significant Valleylands, Significant Wildlife Habitat, and Habitat of Threatened and Endangered Species.

5.1 Provincially Significant Wetlands

The subject property is adjacent to (within 30 m of) the Lover's Creek Wetland, a provincially significant wetland (PSW). PSWs are among the (key) natural heritage feature types that are afforded protection under the PPS, GPGGH, LSPP, and Ontario Regulation (179/06) (see Sections 2.1, 2.2, 2.3, and 2.8, respectively). The PPS states that development is permitted within 120 m of a PSW only if it is demonstrated that there will be no negative impacts to the PSW or its ecological function. The GPGGH and Ontario Regulation 179/06 require a development setback of at least 30 m from the wetland boundary.

5.2 Significant Valleylands

Significant valleylands are among the (key) natural heritage feature types that are afforded protection under the PPS, GPGGH, LSPP, and Ontario Regulation (179/06) (Section 2.1, 2.2, 2.3 and 2.8 respectively). The PPS states that development is permitted within 120 m of a significant valleyland only if it is demonstrated that there will be no negative impacts to the valleyland or its ecological function. Ontario Regulation 179/06 requires a development setback of at least 15 m from the stable slope line or top of bank, whichever is greater. The valleyland feature on the Site would be considered significant based on provincial criteria (Ministry of Natural Resources, 2010) because 1) it is connected to wetlands important to water attenuation, storage and release, 2) it conveys water for at least 2 months of the year and 3) is a part of contiguous woodlands and wetlands. The eastern portion of the Site is moderately sloped towards Lover's Creek, with no obvious break point. As such, the boundary

of the Significant Woodland feature (i.e., stable top of slope) and the associated setback is to be determined as part of future geotechnical studies on the Site.

5.3 Significant Woodlands

Significant woodlands are among the natural heritage feature types that are afforded protection under the PPS. At this point, the City of Barrie has not explicitly defined or designated significant woodlands within their jurisdiction. The woodland feature on the Site would be considered part of a significant woodland based on provincial criteria (Ministry of Natural Resources, 2010) because it 1) is connected to expansive woodlands in the local area, located to the east, northeast, and south, and 2) is part of a woodland greater than 4 ha in size.

5.4 Significant Wildlife Habitat

Guidance documents produced by MNRF for Eco-district 6E were used as a guide to identify and confirm SWH on or adjacent to the Site. According to the applicable SWH Criteria, bat maternity colonies are found in deciduous or mixed forest or swamp communities (FOD, FOM, SWD, SWM), with a density of greater than ten (10) suitable bat habitat trees per hectare. As previously noted, no suitable trees were identified on this Site and therefore, the Site does not meet the criteria for significant bat habitat.

Based on the SAR Screening (Appendix E), the Site has 'High/Moderate' potential to provide habitat for provincially listed special concern bird species (Eastern Wood-pewee and Wood Thrush). Although Eastern Wood-pewee was documented on the site, no evidence of breeding was noted. As such, the Site does not qualify as Special Concern Species SWH.

No other SWH types were identified on or adjacent to the Site.

5.5 Habitat of Endangered and Threatened Species

Based on the results of the SAR screening (Appendix B), the Site does not have 'High' or 'Moderate' potential to provide habitat for any endangered and threatened species. Potential impacts to SAR and their habitat in general are addressed in Section 6.2.

6.0 Proposed Development and Impact Assessment

We understand that the Client has an agreement in place to purchase the subject property, and is pursuing planning approvals for an industrial development. No site plan was available at the time of reporting for this EIS. A preliminary development envelope, located outside of defined natural features and their buffers, was considered in the assessment of potential impacts associated with future industrial development on the Site.

The following sections address potential impacts to protected features identified on and adjacent to the Site that may result from the proposed development and/or site alteration. Exclusion areas, mitigation measures and best management practices have been recommended to ensure that the integrity of the current existing natural features are protected and/or enhanced and furthermore that their functions are not negatively impacted during or following construction (refer to Figure 4).

6.1 Wetlands

The PSW identified adjacent to the Site (see Section 5.1) will be protected with the implementation of a vegetated buffer that provides a development setback of at least 30 m. As mentioned in Section 4.3, the original mapped wetland boundary for the PSW should be used to establish the associated buffer unless the PSW boundary is formally amended through consultation with MNRF and the City of Barrie. Construction activities can increase the potential for erosion through the disturbance of soils the upland area of the Site, which can then be deposited into the wetland and watercourse located downgradient of the Site. Installation of perimeter sediment fencing, particularly along the perimeter of the development envelope and surrounding soil/aggregate stockpiles, will prevent sediment from entering the adjacent wetlands and watercourses, as well as help exclude wildlife from the construction area.

6.2 Species at Risk and SWH

Species listed as endangered or threatened on the SARO list are protected under the provincial Endangered Species Act, 2007 (ESA). Section 9(1) of the ESA prohibits a person

from killing, harming, harassing, capturing or taking a member of a species listed as endangered, threatened or extirpated on the SARO list. Section 10(1) of the ESA prohibits the damage or destruction of habitat of species listed as endangered or threatened on the SARO list. The PPS also protects special concern species through designation of their habitat as significant wildlife habitat (SWH).

One special concern species (Eastern Wood-pewee) was observed during the field investigations; however, potential habitat for other SAR birds exists on Site. The following sections provide recommendations to mitigate for potential impacts to SAR and their habitats.

6.2.1 Birds

Nesting birds are protected under the Migratory Birds Convention Act, 1994. Vegetation clearing on the Site should occur outside of the core breeding bird season, which extends from April 15 to August 15 in the area (as per Environment and Climate Change Canada Guidelines). Where feasible, construction should take place outside this period. In the event that construction is planned to proceed during the breeding season, the area should be investigated for the presence of breeding birds and nests containing eggs and/or young, prior to site alteration. Any discovered nests should be left undisturbed until young have fledged or the nest is determined to be inactive.

6.3 Stormwater Management

Runoff from the Site may increase assuming the future development will include impermeable surfaces (i.e., building roofs, parking areas, etc.) and compacted surfaces with reduced infiltration capacity (i.e., gravel shoulders and walkways). Measures to increase infiltration of run-off from these surfaces should be encouraged and, where possible, included in the Site Plan for any future development. Measures may include the use of grassed swales and rain gardens along walkways and amenity areas, to capture and store run-off and facilitate infiltration. Roof leaders should be directed to grassed or vegetated areas, such as flower beds, and not onto impermeable surfaces. Where feasible, the landowner should consider the use of permeable materials (i.e. interlocking brick, permeable pavements) for suitable hardened surfaces within the building envelope.



6.4 Erosion and Sediment Control

Sedimentation, as a result of acute or persistent erosion in upland areas, can have significant impacts on nearby aquatic environments. Wetlands, fish, and fish habitat are particularly vulnerable to increased sediment transport. Prior to any site alteration activities taking place, heavy duty sediment fencing should be installed around the perimeter of the construction area. This will prevent sediment from migrating to the natural receivers on adjacent lands (i.e., Lover's Creek and associated wetlands). All sediment fencing should be maintained in good working order until the area has been successfully revegetated and/or stabilized. Any observed overland drainage channels originating from the development area, that may or may not have arisen as a result of erosion, should be fitted with a check dam structure prior to exiting the Site.

7.0 Policy Compliance

Based on the key natural heritage and key hydrologic features identified on/adjacent to the Site (wetlands, significant valleylands, and significant woodlands), the proposed development is subject to the natural heritage policies of the PPS and O.Reg 179/06. In the absence of a mapped natural heritage system within the City's Official Plan, the policies of the PPS apply to development within 120 m of PSWs, significant woodlands and significant valleylands.

Compliance with applicable natural heritage policy is summarized in Table 4, below.

Table 4 Natural Heritage Policy Compliance Summary

Key Natural Heritage / Hydrologic Feature	On Site	On Adjacent Lands	Meets Associated Policy (Most Restrictive)
Wetlands	No	Yes	Yes (PPS Sec. 4.2.4.1-3)
<p>Explanation:</p> <p>The nearest wetland (Lover's Creek PSW) is located on adjacent lands to the east. The footprint of the development on the Site will accommodate a 30 m development setback/vegetation protection zone (see Figure 4). Existing vegetation within the 30 m buffer area should be maintained in its existing condition. The newly created forest edge along the eastern limit of the development envelope should be enhanced to improve habitat quality and mitigate potential edge impacts.</p>			
Significant Valleylands	Yes	Yes	Yes (PPS Sec. 2.1.4/2.1.6)
<p>Explanation:</p> <p>The footprint of the proposed development will be setback at least 15 m from the stable top of slope in the eastern portion of the Site (not shown on Figure 4; to be determined through future geotechnical studies). As such, no negative impacts to the feature or its ecological functions are anticipated.</p>			
Significant Woodland	Yes	Yes	Yes (PPS Sec. 2.1.4/2.1.6)
<p>Explanation:</p> <p>Although a peripheral portion of the significant woodland will be removed to accommodate the proposed development, no negative impacts to the feature or its ecological functions are anticipated. The most sensitive areas of the woodland (within the Lover's Creek corridor and valleylands) will be protected by the wetland and/or valleyland setback. In terms of wildlife</p>			



habitat loss, the Site is dominated by relatively common forest communities that are not limiting on the local landscape. Due to the presence of extensive contiguous forest cover, the feature will qualify as significant despite the proposed clearing. Any potential residual impacts resulting from the proposed development of the Site will be sufficiently mitigated through implementation of the recommendations provided herein.

8.0 Recommended Mitigation, Compensation, and Best Practices

The following recommendations apply to the proposed development of the Site:

1. Site Plans for the proposed development should recognize and illustrate a minimum 30 m wetland setback and vegetation protection zone, and minimum 15 m significant valleyland setback (from the stable top of slope).
2. All relevant approvals and permits should be obtained prior to any site alteration activities taking place.
3. No vegetation removal or storage of construction materials/equipment should occur beyond the limits of the development envelope.
4. Vegetation removals should occur outside of the April 15th to August 15th core breeding bird timing window, as per Environment and Climate Change Canada guidelines.
5. An Edge Management Plan should be prepared and implemented, to mitigate edge impacts along the newly created forest edge at the eastern limit of the development envelope.
6. Compensation and enhancement plans should be reviewed in consultation with LSRCA as they relate to the requirements of the LSRCA Ecological Offsetting Plan (see Section 2.9).
7. Prior to the commencement of site alteration, heavy duty sediment fencing, installed as per Ontario Provincial Standard Drawing (OPSD) 219.110, should be installed around the perimeter of construction area and any proposed material stockpiling locations. These measures should be maintained in proper working order until the Site has been successfully revegetated and all exposed substrate has been stabilized.
8. All erosion and sediment control measures should be inspected and maintained throughout the construction phase, until the Site has been fully stabilized.
9. All temporary ESC measures should be removed following construction.

10. Where feasible, the landowner should consider the use of permeable materials (i.e., interlocking brick, permeable pavements) for hardened surfaces within the development such as parking areas and walkways.
11. Any species at risk discovered on the property must be left undisturbed, as required by the Endangered Species Act, 2007. If any individuals are encountered, they should be photographed and allowed time to move out of harm's way. Observations should be reported to the Natural Heritage Information Centre.
12. The proposed building design should include eaves troughs and downspouts that are directed to vegetated areas, to promote infiltration of storm water.
13. Due to the nearby wetlands, workers should be aware of the nesting season for turtles which extends from May 15 to August 15. Should any nesting turtles be encountered, work should stop immediately and the turtle should be left to finish nesting undisturbed. The turtle should be photographed and the nest marked to ensure it is not disturbed during construction until it has hatched (late August – September). If a nest is established in a stockpile or other area that requires disturbance, Cambium should be contacted to determine if the nest can be relocated.
14. In the event that construction is planned to proceed during the breeding bird season, the construction area should be investigated for the presence of birds and nests containing eggs and/or young. Any nests observed should be left undisturbed until young have fledged or the nest is determined to be inactive by a qualified professional.

9.0 Closing

In conclusion, potential negative impacts associated with the proposed development and site alteration are expected to be appropriately mitigated, provided that the recommendations summarized in Section 8.0 are adhered to. The information presented herein demonstrates that the proposed development can be carried out in a manner that is compliant with applicable natural heritage policies and environmental regulations.

Respectfully submitted,

Cambium Inc.



Jeremy Prah, B.Sc., EP, Can-CISEC
Project Manager / Senior Ecologist



Danielle Langlois, B.Sc.
Ecological Technician

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Glossary of Terms

ANSI: Area of Natural and Scientific Interest

ARA: Aquatic Resources Area

ARA: Aggregate Resources Act

AS: Agricultural System

ATK: Aboriginal Traditional Knowledge

BMA: Bear Management Area

BMP: Best Management Practice

CA: Conservation Authority

CEAA: Canadian Environmental Assessment Act/Agency

CFA: Canadian Forestry Association

CFIP: Community Fisheries Involvement Program

CFS: Canadian Forestry Service

CHU: Critical Habitat Unit

CH: Cultural Heritage

CLI: Canada Land Inventory

CLU: Crown Land Use

COSSARO: Committee on the Status of Species at Risk in Ontario

CR: Conservation Reserve

CWIP: Community Wildlife Involvement Program

CWS: Canadian Wildlife Service

DFO: Fisheries and Oceans Canada

EA: Environmental Assessment

EAA: Environmental Assessment Act

EAB: Emerald Ash Borer

EBR: Environmental Bill of Rights

EIA: Environmental Impact Assessment

EIS: Environmental Impact Study/Statement

ELC: Ecological Land Classification System

ELUP: Ecological Land Use Plan

END: Endangered species

EPA: Environmental Protection Act

ER: Environmental Registry

ESA: Endangered Species Act (2007)

ESA: Environmentally Sensitive Area

ESC: Erosion and Sediment Control

F&W: Fish and Wildlife

FA: Fisheries Act (Federal)

FEC: Forest Ecosystem Classification

FMP: Forest Management Plan

FRI: Forest Resources Inventory

FWCA: Fish and Wildlife Conservation Act

GGH: Greater Golden Horseshoe

GHP: General Habitat Protection

GIS: Geographic Information System

GLSL: Great Lakes – St. Lawrence



GPGGH: Growth Plan for the Greater Golden Horseshoe

GPS: Global Positioning System

HSA: Habitat Suitability Analysis

HIS: Habitat Suitability Index

KHA: Key Hydrologic Areas

KHF: Key Hydrologic Features

KNHF: Key Natural Heritage Features

LCFSP: Licence to Collect Fish for Scientific Purposes

LIO: Land Information Ontario

LRIA: Lake and Rivers Improvement Act

LUP: Land Use Permit or Plan

MA: Management Area

MAFA: Moose Aquatic Feeding Area

MCEA: Municipal Class Environmental Assessment

MECP: Ontario Ministry of Environment, Conservation and Parks

MNRF: Ontario Ministry of Natural Resources and Forestry

NER: Natural Environment Report

NHIC: Natural Heritage Information Centre

NHIS: Natural Heritage Information System

NHS: Natural Heritage System

OBM: Ontario Base Map

OFIS: Ontario Fisheries Information System

OLI: Ontario Land Inventory

OMAFRA: Ontario Ministry of Agriculture, Food and Rural Affairs

OWES: Ontario Wetland Evaluation System

PPS: Provincial Policy Statement (2014)

PSW: Provincially Significant Wetland

RLUP: Regional Land Use Plan

RMP: Regional Management Plan

R.P.F.: Registered Professional Forester

SAR: Species at Risk

SARO: Species at Risk in Ontario

SC: Special Concern species

SWH: Significant Wildlife Habitat

SWM: Stormwater Management

THR: Threatened species

TOR: Terms of Reference

TPP: Tree Preservation Plan

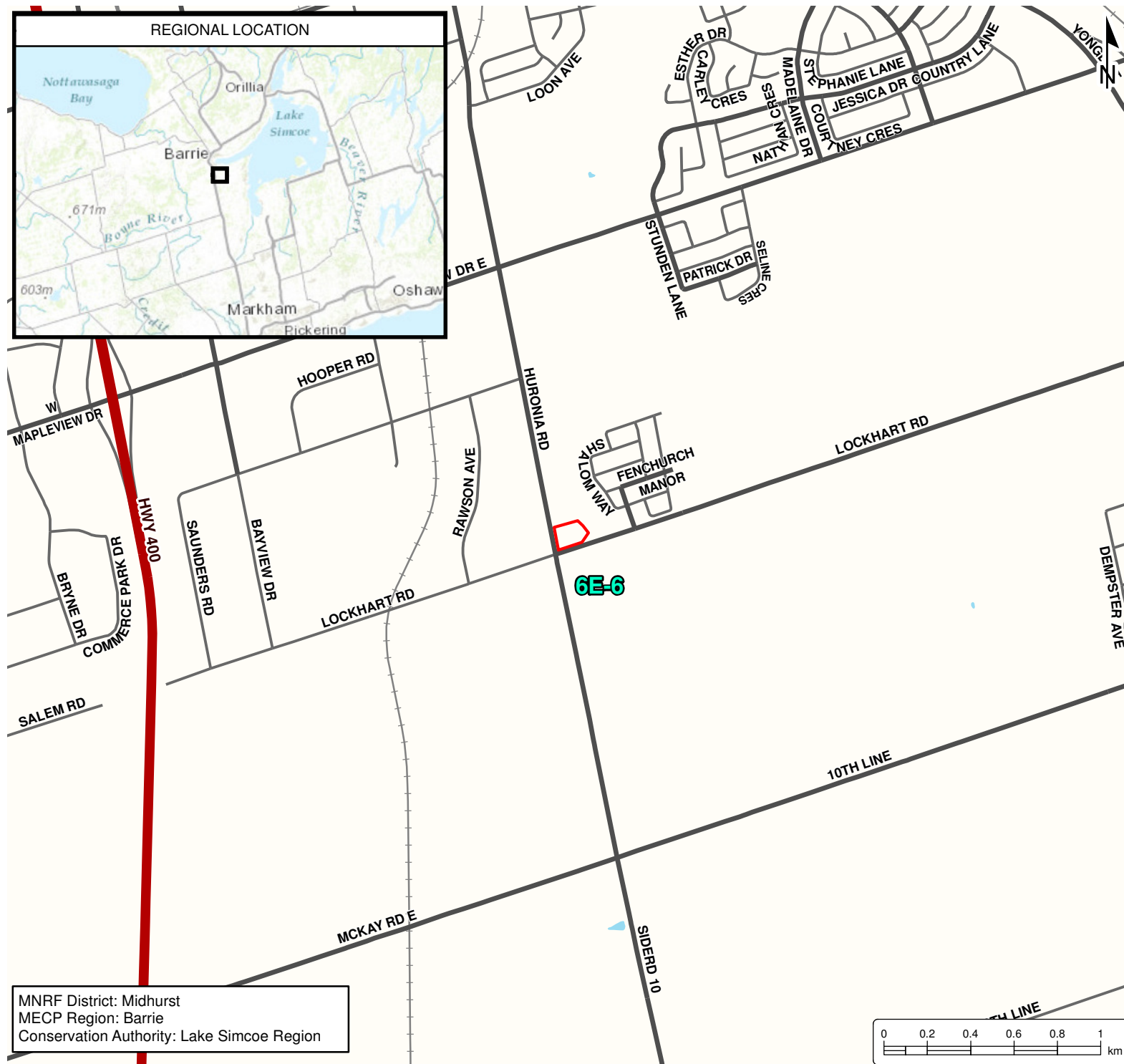
WIA: Woodlands Improvement Act

WMU: Wildlife Management Unit



Appended Figures

REGIONAL LOCATION



ENVIRONMENTAL IMPACT STUDY

KINGSLEA DEVELOPMENTS
380 Lockhart Road,
Barrie, Ontario

LEGEND

- Highway
- Major Road
- Minor Road
- + + Railroad
- Waterbody
- Ecodistrict
- Subject Property (1.38 ha.)

Notes:
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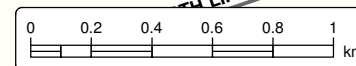


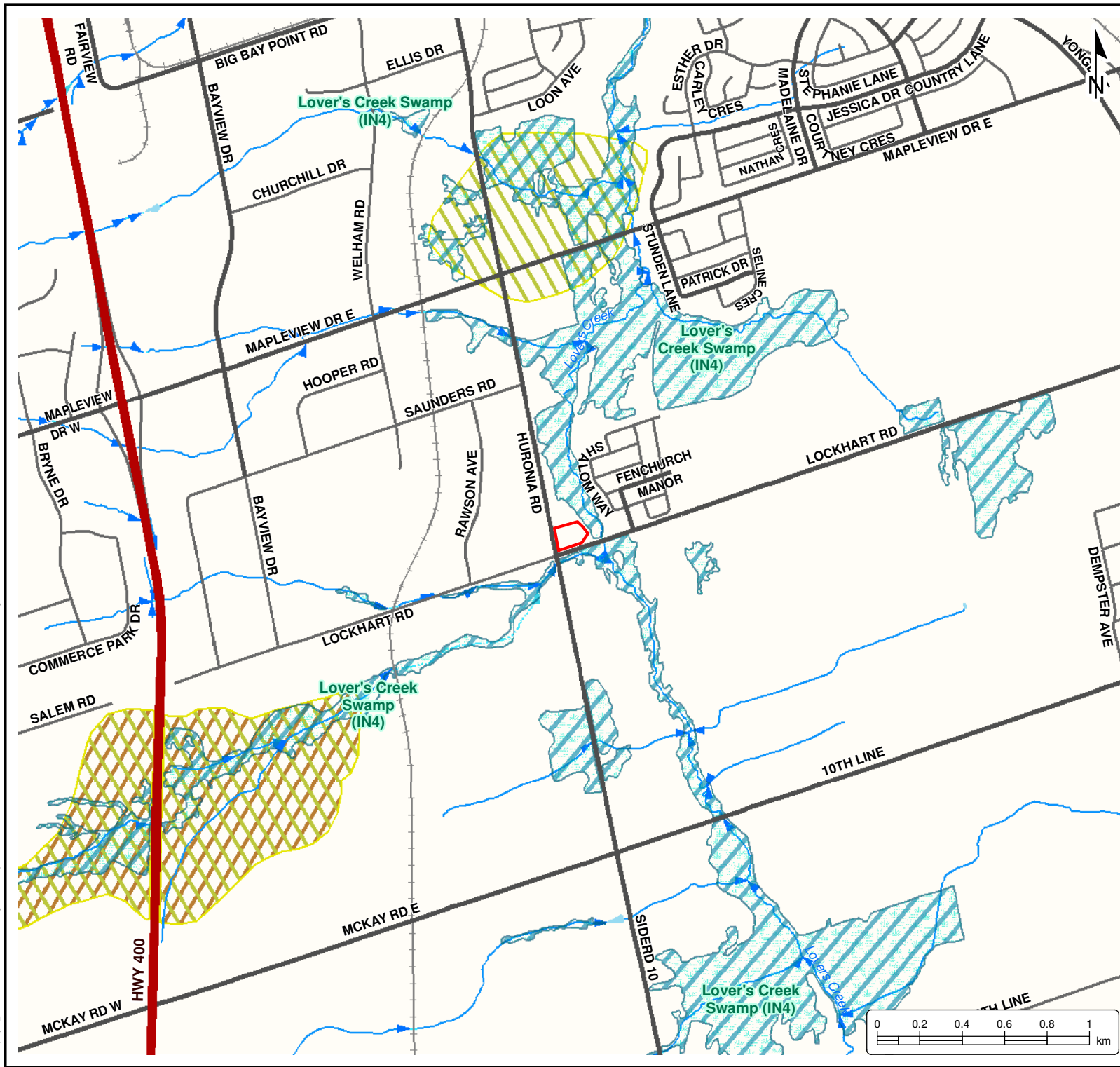
P.O. Box 325, 52 Hunter Street East
 Peterborough, Ontario, K9H 1G5
 Tel: (705) 742.7900 Fax: (705) 742.7907
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SITE LOCATION AND SPECIAL PLANNING AREAS

Project No.: 9121-001	Date: August 2019
Scale: 1:25,000	Projection: NAD 1983 UTM Zone 17N
Created by: TLC	Checked by: JPP
Figure: 1	

MNRF District: Midhurst
 MECP Region: Barrie
 Conservation Authority: Lake Simcoe Region





ENVIRONMENTAL IMPACT STUDY KINGSLEA DEVELOPMENTS 380 Lockhart Road, Barrie, Ontario

LEGEND

- Highway
- Major Road
- Minor Road
- Watercourse, Permanent
- - - Watercourse, Intermittent
- + + Railroad
- ▨ Wetland Area
- ▨ Provincially Significant Wetland
- ▨ Waterbody
- ▨ Deer Wintering Area (Stratum 2)
- ▨ Deer Yard (Stratum 1)
- ▭ Subject Property (1.38 ha.)

Notes:
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LOCAL NATURAL HERITAGE FEATURES

Project No.: 9121-001	Date: August 2019
Scale: 1:25,000	Rev.: NAD 1983 UTM Zone 17N
Created by: TLC	Checked by: JPP
Figure: 2	

O:\GIS\project_MXD\9100-91\9100-91 Kingslea Developments - EIS - 380 Lockhart Rd, Barrie\2019-08-01 FIG 9 - Site Natural Heritage Features.mxd



ENVIRONMENTAL IMPACT STUDY

KINGSLEA DEVELOPMENTS
380 Lockhart Road,
Barrie, Ontario

LEGEND

- Amphibian Survey Station
- Breeding Bird Survey Station
- Field Verified Wetland Boundary
- ▨ Provincially Significant Wetland
- ▭ Subject Property (1.38 ha.)
- ▭ Vegetation Communities:
 - FOM4-2** Dry-Fresh White Cedar-Poplar Mixed Forest
 - CUP3-1** Red Pine Coniferous Plantation

Notes:
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SITE NATURAL HERITAGE FEATURES AND SURVEY LOCATIONS

Project No.:	9121-001	Date:	August 2019
Scale:	1:1,200	Rev.:	
Created by:	TLC	Checked by:	JPP
Figure:	3		



ENVIRONMENTAL IMPACT STUDY KINGSLEA DEVELOPMENTS 380 Lockhart Road, Barrie, Ontario

LEGEND

- 30 m PSW Setback
- 30 m Field Verified Wetland Setback
- Field Verified Wetland Boundary
- Subject Property (1.38 ha.)
- Provincially Significant Wetland
- Evaluated Wetland - Other Significance

Notes:
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NATURAL HERITAGE CONSTRAINTS

Project No.: 9121-001	Date: August 2019
Scale: 1:1,200	Rev.: NAD 1983 UTM Zone 17N
Created by: TLC	Checked by: JPP
Figure: 4	



Appendix A

Correspondence

Paige Spurgeon

From: Kate Lillie <K.Lillie@lsrca.on.ca>
Sent: Thursday, May 30, 2019 12:08 PM
To: Jeremy Prah
Cc: Cambium File; Melinda Bessey; Jessica Chan
Subject: RE: Terms of Reference for EIS at 380 Lockhart Road, Barrie (9121-001)
Attachments: DRAFT-Proponents Guide to Preliminary Screening-May 2019.pdf

Hi Jeremy,

Thanks for your follow-up on this - it was helpful to discuss with you over the phone as well. I appreciate you sharing MECP's email response and "Guide To Screening for SAR".

In the interest of avoiding delays and adhering to this new Guide, the SAR component of the EIS can be completed without MECP input (unless impacts to SAR are anticipated). Please screen for SAR based on species occurrence records as well as based on the habitat present on and adjacent to the subject property. Additional surveys may be required if habitat to support certain species is present, e.g. bats, whip-or-will, etc.

If you need anything further, please let me know.

Thanks,

Kate Lillie, HBSc, EP, ISA

Natural Heritage Ecologist

Lake Simcoe Region Conservation Authority

120 Bayview Parkway,

Newmarket, Ontario L3Y 3W3

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From: Jeremy Prah [mailto:Jeremy.Prah@cambium-inc.com]
Sent: May 30, 2019 10:01 AM
To: Kate Lillie
Cc: Cambium File; Melinda Bessey
Subject: RE: Terms of Reference for EIS at 380 Lockhart Road, Barrie (9121-001)

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Good morning Kate,

Thanks very much for taking some time to review our proposed ToR for this study.

The only concern I have with your revisions relates to the SAR screening. As you're likely aware, responsibility for administering the Endangered Species Act, 2007 was recently transferred to the Ministry of Environment, Conservation and Parks. MNRF staff will no longer address SAR-related inquiries. I've included below a copy of correspondence we received from MECP SAR Branch staff yesterday in response to a typical SAR information request. The draft guide referenced is also attached. Given this guidance, we are not expecting MECP to be involved in routine information gathering exercises at the "preliminary screening" phase. We're being directed to seek MECP input if a potential contravention/permitting issue arises. As such, we don't expect to be liaising with MECP staff on projects that are deemed to be low risk to SAR (i.e., by default).

I would be interested in hearing your views on these changes and our position.

Thanks,
Jeremy

Good Day Tyler,

Thank-you for your emails and my sincerest apologies for our delay in responding to your inquiries.

As you may know, the Ministry of the Environment, Conservation and Parks (MECP) has accepted responsibility for the administration of the Endangered Species Act (ESA). Work associated with ESA authorizations has been centralized from 25 Ministry of Natural Resources and Forestry district offices into one, newly formed Permissions and Compliance team within the new Species at Risk Branch in MECP. This branch is staffed by former MNRF employees with experience in the ESA.

To facilitate communications with our clients, the MECP has established a one-window e-mail account, SAROntario@ontario.ca, for applications, report submissions and other communications relating to applications and authorizations under the ESA. SAROntario@ontario.ca will also be the primary contact for clients who wish to determine whether their proposed activity is likely to contravene the ESA. Staff in this new branch will continue to be available to provide advice to you.

To support our new centralized model, we have been working on the attached guide to help clients work through the preliminary screening process, including providing advice to clients on how they can gather the information you have requested from publicly available information sources. Please feel free to contact us at SAROntario@ontario.ca if you think your activity is likely to contravene the ESA and if you would like further advice on authorization options.

Please see the attached guide for your use.

Kind Regards,
Nikki

Nikki Boucher

A/Species at Risk Specialist

Permissions & Compliance, Species at Risk Branch
Ministry of Environment, Conservation & Parks



Jeremy Prah, B.Sc., EP
Project Manager / Senior Biologist

Cambium Inc. - Barrie
p: 705.719.0700 x 412 | c: 249.359.0689 | toll: 866.217.7900 |
W: cambium-inc.com

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From: Kate Lillie [mailto:K.Lillie@lsrca.on.ca]
Sent: May 30, 2019 9:08 AM
To: Jeremy Prah
Cc: Cambium File ; Melinda Bessey
Subject: RE: Terms of Reference for EIS at 380 Lockhart Road, Barrie (9121-001)

Hi Jeremy,

Thanks for providing this proposed terms of reference. I've made a few additions and revisions in red below. Please let me know if you have any questions/concerns with what I've added.

Kind regards,

Kate Lillie, HBSc, EP, ISA
Natural Heritage Ecologist
Lake Simcoe Region Conservation Authority
120 Bayview Parkway,
Newmarket, Ontario L3Y 3W3
905-895-1281, ext. 286 | 1-800-465-0437
k.lillie@LSRCA.on.ca | www.LSRCA.on.ca

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From: Jeremy Prah [mailto:Jeremy.Prah@cambium-inc.com]
Sent: May 22, 2019 1:30 PM
To: Kate Lillie
Cc: Cambium File; Melinda Bessey
Subject: RE: Terms of Reference for EIS at 380 Lockhart Road, Barrie (9121-001)

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Hi Kate,

Thanks for your response and for confirming the information below. In anticipation of study requirements and based on our preliminary review of habitat on and adjacent to the subject property, we've initiated a fieldwork program on the Site (amphibian and bat maternity roost habitat surveys, specifically).

If you could kindly review and comment on the suitability of the following proposed Terms of Reference for the EIS, that would be greatly appreciated.

- Consult with City of Barrie and LSRCA staff, as required, to determine their interest/concerns regarding the proposed works and scope of work requirements.
- Compile and review applicable background information and environmental mapping pertaining to the Site.
- Conduct a survey for SAR bat maternity roost trees, according to the current MNRF Midhurst District Protocol (2015), to assess the Site for SAR bat habitat in treed areas.
- Conducted three (3) amphibian breeding surveys on the Site, following the Marsh Monitoring Program Participant's Handbook for Surveying Amphibians (Bird Studies Canada, 2008), to document frog and toad breeding activity on and adjacent to the Site.
- Conduct three (3) breeding bird surveys on the Site, using Components of the Ontario Breeding Bird Atlas Guide for Participants (OBBA, 2001) and the Forest Bird Monitoring Program (Canadian Wildlife Service, 2005) as appropriate, based on site conditions. (we will only require 2 breeding bird surveys unless there is grassland habitat present on or adjacent to the property)
- Conduct an aquatic habitat survey, to assess the adjacent watercourse and determine whether there are other hydrologic features of significance (e.g., wetlands, seeps, springs, etc.) on the Site.
- Conduct a survey of vascular plants on the Site in early summer, to provide a single season inventory.
- Classify existing vegetation communities on the Site, according to the Ecological Land Classification System for Southern Ontario (Lee et. al., 1998), and evaluate them for sensitivity, rarity, and botanical quality.
- Delineate wetland boundaries following the Ontario Wetland Evaluation System (OWES) for Southern Ontario (Ministry of Natural Resources, 2013). This includes a site meeting with Ministry of Natural Resources and Forestry (MNRF) staff for field verification of the adjacent PSW boundary. (please include LSRCA staff in this site visit)
- Undertake a Species at Risk (SAR) screening to assess for potential SAR habitat and evaluate compliance with the provincial Endangered Species Act, 2007 (ESA). (please contact the local MNRF district office for records in the area and further direction).

- Record observations of wildlife occurrences and assess wildlife habitat function, including significant wildlife habitat on the Site. Any evidence of breeding, forage, shelter or nesting sites, and/or travel corridors will be noted.
- Identify, assess, and include detailed descriptions of the natural features and functions identified on the Site and adjacent lands.
- Map key natural heritage and hydrologic features, vegetation communities and other environmental features (watercourses, wetlands, areas of groundwater discharge, wildlife habitat, etc.) and proposed development on current, high quality aerial imagery.
- Provide an assessment of the potential impacts of the proposed development on natural features and their related ecological and hydrologic functions. **A feature-based water balance should be completed to determine and address any hydrologic impacts.**
- Demonstrate conformity with the applicable policies and plans within the Lake Simcoe watershed, including: Provincial Policy Statement, 2014; Conservation Authorities Act and O.Reg. 179/06; LSRCA Ecological Offsetting Plan; and, City of Barrie Official Plan.
- Develop and provide an appropriate avoidance, mitigation, restoration, and/or offsetting strategy, to address the potential impacts identified.
- Complete one (1) final report for circulation for approval to the City and LSRCA, which includes a CV of all qualified practitioners.

Feel free to give me a call if you would like to discuss the details.

Thanks,
Jeremy



Jeremy Prah, B.Sc., EP
Project Manager / Senior Biologist

Cambium Inc. - Barrie
p: 705.719.0700 x 412 | **c:** 249.359.0689 | **toll:** 866.217.7900 |
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From: Kate Lillie [<mailto:K.Lillie@lsrca.on.ca>]
Sent: May 15, 2019 12:32 PM
To: Jeremy Prah <Jeremy.Prah@cambium-inc.com>

Cc: Cambium File <file@cambium-inc.com>; Melinda Bessey <M.Bessey@lsrca.on.ca>

Subject: RE: Terms of Reference for EIS at 380 Lockhart Road, Barrie (9152-001)

Hi Jeremy,

Areas within 120m of PSW are regulated under the *Conservation Authorities Act*, which is why the majority of the property is mapped as regulated. As you mentioned, the property is designated as a Level 1 NH resource with existing development designation, which means that it will be subject to the policies of Level 2 designation. As per these policies, “the features and function of these areas should be retained, however, there is potential for development if no negative impact can be demonstrated or mitigated”.

The EIS will need to assess natural heritage features on and adjacent to the property and demonstrate conformity with all applicable policy. Generally, we ask consultants to provide a proposed terms of reference for our review and approval. This is more appropriate as you likely have additional information about the features/conditions on the property which can help determine what studies/data collection should be completed.

Based on what I see from our mapping, the EIS should include breeding bird surveys, breeding amphibian surveys and vegetation inventories. If your client is hoping to submit an application this year, I’d recommend starting this work asap so you don’t miss the season. But please still provide us with a proposed terms of reference for our review and approval.

If you have any questions or would like to discuss the terms or reference further, feel free to call or email.

Thanks,

Kate Lillie, HBSc, EP, ISA

Natural Heritage Ecologist

Lake Simcoe Region Conservation Authority

120 Bayview Parkway,

Newmarket, Ontario L3Y 3W3

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From: Jeremy Prah [mailto:Jeremy.Prah@cambium-inc.com]

Sent: May 9, 2019 3:15 PM

To: Kate Lillie; Melinda Bessey

Cc: Cambium File

Subject: Terms of Reference for EIS at 380 Lockhart Road, Barrie (9152-001)

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Good afternoon Kate and Melinda,

Cambium has been retained to complete an Environmental Impact Study (EIS) at 380 Lockhart Road in the City of Barrie (see attached figure for location). Our client has an agreement in place to purchase the subject property and is proposing a development that is consistent with the current land use designation and zoning (General Industrial and Light Industrial, respectively). Schedule H of the City OP also designates the property as a Level 1 Natural Heritage Resource with Existing Development Designation Subject to 3.5.2.4 d.

The site is adjacent to a PSW and is almost entirely regulated under O. Reg. 179/06 according to LSRCA mapping. A site plan application will likely be required, but to the best of my knowledge, no pre-consultation has occurred with the City Planning department as of yet. At this point, we would like to confirm the basis for the regulated area and confirm the terms of reference for the EIS.

Let me know if you require any further information. Feel free to call if you'd like to discuss.

Thanks,
Jeremy



Jeremy Prah, B.Sc., EP
Project Manager / Senior Biologist

Cambium Inc. - Barrie
Environmental | Building Sciences | Geotechnical |
Construction Monitoring

p: 705.719.0700 x 412 | **c:** 249.359.0689 | **toll:** 866.217.7900 |
w: cambium-inc.com

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Appendix B

Photographic Log



Photo 1 Red Pine Coniferous Plantation (ELC code: CUP3-1), June 2019.



Photo 2 Dry – Fresh White Cedar – Poplar Mixed Forest (ELC code: FOM4-2), June 2019.



Photo 3 View of property boundary along Huronia Road, May 2019.



Photo 4 Evidence of cutting in Red Pine Plantation, May 2019.



Appendix C

Vegetation Species List



Appendix C - Vegetation Species List

Family	Common name	Scientific name	COSEWIC	SARO	S-Rank	CoC	CUP3-1	FOM4-2
Aceraceae	Sugar Maple	<i>Acer saccharum</i>	-	-	S5	4		X
Anacardiaceae	Poison Ivy	<i>Toxicodendron radicans</i>	-	-	S5	2		X
Asteraceae	Bull Thistle	<i>Cirsium vulgare</i>	-	-	SNA	-	X	
Asteraceae	Common Burdock	<i>Arctium minus</i>	-	-	SNA	-	X	
Asteraceae	Common Dandelion	<i>Taraxacum officinale</i>	-	-	SNA	-	X	
Asteraceae	King Devil Hawkweed	<i>Pilosella piloselloides ssp. praealta</i>	-	-	SNA	-	X	
Asteraceae	Tall Goldenrod	<i>Solidago altissima</i>	-	-	S5	1		X
Balsaminaceae	Spotted Jewelweed	<i>Impatiens capensis</i>	-	-	S5	4	X	
Caprifoliaceae	Downy Arrowwood	<i>Viburnum rafinesqueanum</i>	-	-	S5	7		X
Caprifoliaceae	Red Elderberry	<i>Sambucus racemosa ssp. pubens var. pubens</i>	-	-	S5	5	X	
Cupressaceae	Eastern White Cedar	<i>Thuja occidentalis</i>	-	-	S5	4		X
Cyperaceae	Pennsylvania Sedge	<i>Carex pensylvanica</i>	-	-	S5	5		X
Dryopteridaceae	Spinulose Wood Fern	<i>Dryopteris carthusiana</i>	-	-	S5	5	X	
Equisetaceae	Field Horsetail	<i>Equisetum arvense</i>	-	-	S5	-	X	
Equisetaceae	Meadow Horsetail	<i>Equisetum pratense</i>	-	-	S5	8		X
Geraniaceae	Herb-Robert	<i>Geranium robertianum</i>	-	-	S5	2	X	
Oleaceae	White Ash	<i>Fraxinus americana</i>	-	-	S4	4	X	X
Onagraceae	Canada Enchanter's Nightshade	<i>Circaea canadensis ssp. canadensis</i>	-	-	S5	2		X
Oxalidaceae	Upright Yellow Wood-sorrel	<i>Oxalis stricta</i>	-	-	S5	-		X
Pinaceae	Balsam Fir	<i>Abies balsamea</i>	-	-	S5	5	X	
Pinaceae	Eastern White Pine	<i>Pinus strobus</i>	-	-	S5	4	X	X
Pinaceae	Red Pine	<i>Pinus resinosa</i>	-	-	S5	8	X	
Pinaceae	Scots Pine	<i>Pinus sylvestris var. sylvestris</i>	-	-	SNA	-	X	X
Pinaceae	White Spruce	<i>Picea glauca</i>	-	-	S5	6		X
Pyrolaceae	Shinleaf	<i>Pyrola elliptica</i>	-	-	S5	5		X
Ranunculaceae	Tall Buttercup	<i>Ranunculus acris</i>	-	-	SNA	-	X	
Rosaceae	Black Cherry	<i>Prunus serotina var. serotina</i>	-	-	S5	3	X	X
Rosaceae	Choke Cherry	<i>Prunus virginiana var. virginiana</i>	-	-	S5	2	X	
Rosaceae	Northern Dewberry	<i>Rubus flagellaris</i>	-	-	S4	4	X	
Rosaceae	Wild Red Raspberry	<i>Rubus idaeus ssp. strigosus</i>	-	-	S5	2	X	
Salicaceae	Balsam Poplar	<i>Populus balsamifera</i>	-	-	S5	4	X	
Salicaceae	Trembling Aspen	<i>Populus tremuloides</i>	-	-	S5	2		X
Solanaceae	Bittersweet Nightshade	<i>Solanum dulcamara</i>	-	-	SNA	-	X	
Vitaceae	Riverbank Grape	<i>Vitis riparia</i>	-	-	S5	-	X	
Vitaceae	Virginia Creeper	<i>Parthenocissus quinquefolia</i>	-	-	S4?	6		X

Notes:

COSEWIC - Committee on the Status of Endangered Wildlife in Canada

SARO - Species at Risk in Ontario

S-Rank - Provincial rank used by the Natural Heritage Information Centre to prioritize protection efforts

CoC - Coefficient of Conservatism

SC - Special Concern

THR - Threatened

END - Endangered

NAR - Not at risk

S1 - Extremely rare in Ontario



Appendix D

Bird Species List

Appendix D - Ontario Breeding Bird Atlas: 17PK00

Common name	Scientific name	COSEWIC	SARO	S-Rank
Alder Flycatcher	<i>Empidonax alnorum</i>	-	-	S5B
American Bittern	<i>Botaurus lentiginosus</i>	-	-	S4B
American Black Duck	<i>Anas rubripes</i>	-	-	S4
American Crow	<i>Corvus brachyrhynchos</i>	-	-	S5B
American Goldfinch	<i>Spinus tristis</i>	-	-	S5B
American Kestrel	<i>Falco sparverius</i>	-	-	S4
American Redstart	<i>Setophaga ruticilla</i>	-	-	S5B
American Robin	<i>Turdus migratorius</i>	-	-	S5B
American Woodcock	<i>Scolopax minor</i>	-	-	S4B
Baltimore Oriole	<i>Icterus galbula</i>	-	-	S4B
Bank Swallow	<i>Riparia riparia</i>	THR	THR	S4B
Barn Swallow	<i>Hirundo rustica</i>	THR	THR	S4B
Belted Kingfisher	<i>Megaceryle alcyon</i>	-	-	S4B
Black-and-white Warbler	<i>Mniotilta varia</i>	-	-	S5B
Black-billed Cuckoo	<i>Coccyzus erythrophthalmus</i>	-	-	S5B
Black-capped Chickadee	<i>Poecile atricapillus</i>	-	-	S5
Black-throated Blue Warbler	<i>Setophaga caerulescens</i>	-	-	S5B
Black-throated Green Warbler	<i>Setophaga virens</i>	-	-	S5B
Blue Jay	<i>Cyanocitta cristata</i>	-	-	S5
Blue-winged Teal	<i>Anas discors</i>	-	-	S4
Bobolink	<i>Dolichonyx oryzivorus</i>	THR	THR	S4B
Broad-winged Hawk	<i>Buteo platypterus</i>	-	-	S5B
Brown Creeper	<i>Certhia americana</i>	-	-	S5B
Brown Thrasher	<i>Toxostoma rufum</i>	-	-	S4B
Brown-headed Cowbird	<i>Molothrus ater</i>	-	-	S4B
Canada Goose	<i>Branta canadensis</i>	-	-	S5
Cedar Waxwing	<i>Bombycilla cedrorum</i>	-	-	S5B
Chestnut-sided Warbler	<i>Setophaga pensylvanica</i>	-	-	S5B
Chimney Swift	<i>Chaetura pelagica</i>	THR	THR	S4B,S4N
Chipping Sparrow	<i>Spizella passerina</i>	-	-	S5B
Cliff Swallow	<i>Petrochelidon pyrrhonota</i>	-	-	S4B
Common Grackle	<i>Quiscalus quiscula</i>	-	-	S5B
Common Nighthawk	<i>Chordeiles minor</i>	SC	SC	S4B
Common Yellowthroat	<i>Geothlypis trichas</i>	-	-	S5B
Cooper's Hawk	<i>Accipiter cooperii</i>	NAR	NAR	S4
Downy Woodpecker	<i>Picoides pubescens</i>	-	-	S5
Eastern Bluebird	<i>Sialia sialis</i>	NAR	NAR	S5B
Eastern Kingbird	<i>Tyrannus tyrannus</i>	-	-	S4B
Eastern Meadowlark	<i>Sturnella magna</i>	THR	THR	S4B
Eastern Phoebe	<i>Sayornis phoebe</i>	-	-	S5B
Eastern Screech-Owl	<i>Megascops asio</i>	NAR	NAR	S4
Eastern Wood-Pewee	<i>Contopus virens</i>	SC	SC	S4B
European Starling	<i>Sturnus vulgaris</i>	-	-	SNA



Evening Grosbeak	<i>Coccothraustes vespertinus</i>	SC	SC	S4B
Field Sparrow	<i>Spizella pusilla</i>	-	-	S4B
Golden-crowned Kinglet	<i>Regulus satrapa</i>	-	-	S5B
Grasshopper Sparrow	<i>Ammodramus savannarum</i>	SC	SC	S4B
Gray Catbird	<i>Dumetella carolinensis</i>	-	-	S4B
Great Crested Flycatcher	<i>Myiarchus crinitus</i>	-	-	S4B
Great Horned Owl	<i>Bubo virginianus</i>	-	-	S4
Green Heron	<i>Butorides virescens</i>	-	-	S4B
Hairy Woodpecker	<i>Picoides villosus</i>	-	-	S5
Hermit Thrush	<i>Catharus guttatus</i>	-	-	S5B
Hooded Merganser	<i>Lophodytes cucullatus</i>	-	-	S5B,S5N
Horned Lark	<i>Eremophila alpestris</i>	-	-	S5B
House Finch	<i>Haemorhous mexicanus</i>	-	-	SNA
House Sparrow	<i>Passer domesticus</i>	-	-	SNA
House Wren	<i>Troglodytes aedon</i>	-	-	S5B
Indigo Bunting	<i>Passerina cyanea</i>	-	-	S4B
Killdeer	<i>Charadrius vociferus</i>	-	-	S5B,S5N
Least Flycatcher	<i>Empidonax minimus</i>	-	-	S4B
Magnolia Warbler	<i>Setophaga magnolia</i>	-	-	S5B
Mallard	<i>Anas platyrhynchos</i>	-	-	S5
Mourning Dove	<i>Zenaida macroura</i>	-	-	S5
Mourning Warbler	<i>Geothlypis philadelphia</i>	-	-	S4B
Nashville Warbler	<i>Oreothlypis ruficapilla</i>	-	-	S5B
Northern Cardinal	<i>Cardinalis cardinalis</i>	-	-	S5
Northern Flicker	<i>Colaptes auratus</i>	-	-	S4B
Northern Harrier	<i>Circus hudsonius</i>	NAR	NAR	S4B
Northern Rough-winged Swallow	<i>Stelgidopteryx serripennis</i>	-	-	S4B
Northern Waterthrush	<i>Parkesia noveboracensis</i>	-	-	S5B
Olive-sided Flycatcher	<i>Contopus cooperi</i>	SC	SC	S4B
Ovenbird	<i>Seiurus aurocapilla</i>	-	-	S4B
Pileated Woodpecker	<i>Dryocopus pileatus</i>	-	-	S5
Pine Warbler	<i>Setophaga pinus</i>	-	-	S5B
Purple Finch	<i>Haemorhous purpureus</i>	-	-	S4B
Red-breasted Nuthatch	<i>Sitta canadensis</i>	-	-	S5
Red-eyed Vireo	<i>Vireo olivaceus</i>	-	-	S5B
Red-headed Woodpecker	<i>Melanerpes erythrocephalus</i>	END	SC	S4B
Red-shouldered Hawk	<i>Buteo lineatus</i>	NAR	NAR	S4B
Red-tailed Hawk	<i>Buteo jamaicensis</i>	NAR	NAR	S5
Red-winged Blackbird	<i>Agelaius phoeniceus</i>	-	-	S4
Rock Pigeon	<i>Columba livia</i>	-	-	SNA
Rose-breasted Grosbeak	<i>Pheucticus ludovicianus</i>	-	-	S4B
Ruby-throated Hummingbird	<i>Archilochus colubris</i>	-	-	S5B
Ruffed Grouse	<i>Bonasa umbellus</i>	-	-	S4
Savannah Sparrow	<i>Passerculus sandwichensis</i>	-	-	S4B
Scarlet Tanager	<i>Piranga olivacea</i>	-	-	S4B
Sharp-shinned Hawk	<i>Accipiter striatus</i>	NAR	NAR	S5
Song Sparrow	<i>Melospiza melodia</i>	-	-	S5B
Sora	<i>Porzana carolina</i>	-	-	S4B
Spotted Sandpiper	<i>Actitis macularius</i>	-	-	S5

Swamp Sparrow	<i>Melospiza georgiana</i>	-	-	S5B
Tree Swallow	<i>Tachycineta bicolor</i>	-	-	S4B
Turkey Vulture	<i>Cathartes aura</i>	-	-	S5B
Veery	<i>Catharus fuscescens</i>	-	-	S4B
Vesper Sparrow	<i>Poocetes gramineus</i>	-	-	S4B
Virginia Rail	<i>Rallus limicola</i>	-	-	S5B
Warbling Vireo	<i>Vireo gilvus</i>	-	-	S5B
White-breasted Nuthatch	<i>Sitta carolinensis</i>	-	-	S5
White-throated Sparrow	<i>Zonotrichia albicollis</i>	-	-	S5B
Wild Turkey	<i>Meleagris gallopavo</i>	-	-	S5
Willow Flycatcher	<i>Empidonax traillii</i>	-	-	S5B
Winter Wren	<i>Troglodytes hiemalis</i>	-	-	S5B
Wood Duck	<i>Aix sponsa</i>	-	-	S5
Wood Thrush	<i>Hylocichla mustelina</i>	THR	SC	S4B
Yellow Warbler	<i>Setophaga petechia</i>	-	-	S5B
Yellow-bellied Sapsucker	<i>Sphyrapicus varius</i>	-	-	S5B
Yellow-billed Cuckoo	<i>Coccyzus americanus</i>	-	-	S4B
Yellow-rumped Warbler	<i>Setophaga coronata</i>	-	-	S5B

Notes:

COSEWIC - Committee on the Status of Endangered Wildlife in Canada

SARO - Species at Risk in Ontario

S-Rank - Provincial rank used by the Natural Heritage Information Centre to prioritize protection efforts

SC - Special Concern

THR - Threatened

END - Endangered

NAR - Not at risk

S1 - Extremely rare in Ontario

S2 - Very rare in Ontario

S3 - Rare to uncommon in Ontario

S4 - Considered to be common in Ontario

S5 - Species is widespread in Ontario

SNA - Not Applicable (typically introduced species)

SU - Status is uncertain due to insufficient information

"?" - Indicates uncertainty in classification due to lack of information

Appendix D - Avifauna Survey List

Common name	Scientific name	COSEWIC	SARO	S-Rank
American Crow	<i>Corvus brachyrhynchos</i>	-	-	S5B
American Goldfinch	<i>Spinus tristis</i>	-	-	S5B
American Robin	<i>Turdus migratorius</i>	-	-	S5B
Eastern Phoebe	<i>Sayornis phoebe</i>	-	-	S5B
Eastern Wood-pewee	<i>Contopus virens</i>	SC	SC	S4B
Great Crested Flycatcher	<i>Myiarchus crinitus</i>	-	-	S4B
House Wren	<i>Troglodytes aedon</i>	-	-	S5B
Northern Flicker	<i>Colaptes auratus</i>	-	-	S4B
Pine Warbler	<i>Setophaga pinus</i>	-	-	S5B
Red-breasted Nuthatch	<i>Sitta canadensis</i>	-	-	S5
Ring-billed Gull	<i>Larus delawarensis</i>	-	-	S5B,S4N
Song Sparrow	<i>Melospiza melodia</i>	-	-	S5B

Notes:

COSEWIC - Committee on the Status of Endangered Wildlife in Canada

SARO - Species at Risk in Ontario

S-Rank - Provincial rank used by the Natural Heritage Information Centre to prioritize protection efforts

SC - Special Concern

THR - Threatened

END - Endangered

NAR - Not at risk

S1 - Extremely rare in Ontario

S2 - Very rare in Ontario

S3 - Rare to uncommon in Ontario

S4 - Considered to be common in Ontario

S5 - Species is widespread in Ontario

SNA - Not Applicable (typically introduced species)

SU - Status is uncertain due to insufficient information

"?" - Indicates uncertainty in classification due to lack of information

Appendix D - Avifauna Observations

	5/29/2019	6/12/2019
Common name	BBS1	BBS1
American Crow	H	H
American Goldfinch	H	S
American Robin		H
Eastern Phoebe	H	H
Eastern Wood-pewee		H
Great Crested Flycatcher		H
House Wren		S
Northern Flicker		H
Pine Warbler		S
Red-breasted Nuthatch		H
Ring-billed Gull	flyover	
Song Sparrow	S	

Note:

Shaded cells indicate probable or confirmed breeding by the species within the vegetation community.

Observed

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

Possible Breeding

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

S= Singing male present, or breeding calls heard, in its breeding season in suitable nesting habitat

Probable Breeding

P= Pair observed in their breeding season in suitable nesting habitat

T= Permanent territory presumed through registration of territorial song on at least 2 days, a week apart, at the same place

D= Courtship or display between a male and a female or 2 males, including courtship feeding or copulation

V= Visiting probable nest site

A = Agitated behaviour or anxiety calls of an adult

B= Brood patch on adult female or cloacal protuberance on adult male

N= Nest-building or excavation of nest hole

Confirmed Breeding

DD= Distraction display or injury feigning

NU= Used nest or egg shell found (occupied or laid within the period of study)

FY= Recently fledged young or downy young, including young incapable to sustain flight

AE= Adults leaving or entering nest site in circumstances indicating occupied nest

FS= Adult carrying faecal sac

CF= Adult carrying food for young

NE= Nest containing eggs

NY= Nest with young seen or heard



Appendix E

Species at Risk Screening



Appendix E: Species at Risk Habitat Suitability Analysis

FEDERAL STATUS				PROVINCIAL STATUS			HABITAT REQUIREMENTS	SOURCE	POTENTIAL HABITAT PRESENT (High/Moderate/Low)	RATIONALE	FIELD SURVEY RESULTS	IMPLICATIONS AND IMPACTS
COMMON NAME	SCIENTIFIC NAME	SARA	SCHEDULE	COSEWIC	SARO	S-RANK						
AVIFAUNA												
Bank Swallow	<i>Riparia riparia</i>	THR	1	THR	THR	S4B	The Bank Swallow is listed as a threatened species both federally and provincially (COSEWIC, 2018; COSSARO, 2018). This species nest in burrows in natural and human-made settings where there are vertical faces in silt and sand deposits, including banks of rivers and lakes, bluffs, active sand and gravel pits, road cuts and stockpiles of soils. The birds breed in colonies ranging from several to a few thousand pairs (Ministry of Natural Resources and Forestry, 2018).	OBBA	Low	Suitable habitat is not present on Site, no vertical faces for burrowing.	This species was not observed during the 2019 breeding bird surveys.	Any potential impacts to this species resulting from the development should be sufficiently mitigated provided the EIS recommendations are adhered to.
Barn Swallow	<i>Hirundo rustica</i>	THR	1	THR	THR	S4B	The Barn Swallow is listed both federally and provincially as threatened (COSEWIC, 2018; COSSARO, 2018). This species prefer to nest within human made structures such as barns, bridges, and culverts. Barn Swallow nests are cup-shaped and made of mud; they are typically attached to horizontal beams or vertical walls underneath an overhang. (Ministry of Natural Resources and Forestry, 2018).	OBBA	Low	Suitable habitat is not present on Site, vacant Site with no existing structures for nesting.	This species was not observed during the 2019 breeding bird surveys.	Any potential impacts to this species resulting from the development should be sufficiently mitigated provided the EIS recommendations are adhered to.
Bobolink	<i>Dolichonyx oryzivorus</i>	THR	1	THR	THR	S4B	The Bobolink is listed as threatened both federally and provincially (COSEWIC, 2018; COSSARO, 2018). This species prefers tall, grassy meadows, hayfields and some croplands, and feeds and nests on the ground (Ministry of Natural Resources and Forestry, 2018).	OBBA	Low	No suitable grassland habitat on Site.	This species was not observed during the 2019 breeding bird surveys.	Any potential impacts to this species resulting from the development should be sufficiently mitigated provided the EIS recommendations are adhered to.
Chimney Swift	<i>Chaetura pelagica</i>	THR	1	THR	THR	S4B,S4N	The Chimney Swift is listed both federally and provincially as threatened (COSEWIC, 2018; COSSARO, 2018). It is found mostly near urban and suburban areas where the presence of chimneys or other manmade structures provide nesting and roosting habitat. Prior to settlement, the Chimney Swift would mainly nest in cave walls and hollow tress (Ministry of Natural Resources and Forestry, 2018).	OBBA	Low	Suitable habitat is not present on Site, vacant Site with no existing structures for nesting.	This species was not observed during the 2019 breeding bird surveys.	Any potential impacts to this species resulting from the development should be sufficiently mitigated provided the EIS recommendations are adhered to.
Common Nighthawk	<i>Chordeiles minor</i>	THR	1	SC	SC	S4B	The Common Nighthawk is listed as threatened nationally (COSEWIC, 2018) and is of special concern provincially (COSSARO, 2018). This species is typically found in open areas such as gravel beaches, rock outcrops and burned woodlands, that have little to no ground vegetation. This species can also be found in highly disturbed locations such as clear cuts, mine tailing areas, cultivated fields, urban parks, gravel roads, and orchards (Ministry of Natural Resources and Forestry, 2018).	OBBA	Low	Limited habitat available on Site. Site is entirely forested and surrounded by commercial and industrial properties.	This species was not observed during the 2019 breeding bird surveys.	Any potential impacts to this species resulting from the development should be sufficiently mitigated provided the EIS recommendations are adhered to.
Eastern Meadowlark	<i>Sturnella magna</i>	THR	1	THR	THR	S4B	The Eastern Meadowlark is listed as threatened both federally and provincially (COSEWIC, 2018; COSSARO, 2018). This species prefers pastures and hayfields, but is also found to breed in orchards, shrubby fields and human use areas such as airports and roadsides. Eastern Meadowlark can nest from early May to mid-August, in nests that are built on the ground and well-camouflaged with a roof woven from grasses (Ministry of Natural Resources and Forestry, 2018).	OBBA	Low	Limited habitat available on Site. Site is entirely forested and surrounded by commercial and industrial properties.	This species was not observed during the 2019 breeding bird surveys.	Any potential impacts to this species resulting from the development should be sufficiently mitigated provided the EIS recommendations are adhered to.
Eastern Wood-Pewee	<i>Contopus virens</i>	SC	1	SC	SC	S4B	The Eastern Wood-pewee is designated as a species of special concern both federally and provincially (COSEWIC, 2018; COSSARO, 2018). This species of “flycatcher”, a bird that eats flying insects, lives in the mid-canopy layer of forest clearings and edges of deciduous and mixed forests. It prefers intermediate-age forest stands with little understory vegetation (Ministry of Natural Resources and Forestry, 2018).	OBBA	High	Suitable woodland habitat present on site.	This species was observed during one of the 2019 breeding bird surveys. No nesting activity documented.	Any potential impacts to this species resulting from the development should be sufficiently mitigated provided the EIS recommendations are adhered to.
Evening Grosbeak	<i>Coccothraustes vespertinus</i>	No Status	No Schedule	SC	SC	S4B	The evening grosbeak has recently been listed both federally and provincially as special concern (COSEWIC, 2018; COSSARO, 2018). They are social birds, often found in flocks, particularly during the winter months. They forage in treetops for insect larvae during the summer; in winter they eat seeds, buds, berries, and small fruits. Their preferred habitat is thick coniferous forest (Ministry of Natural Resources and Forestry, 2018).	OBBA	High	Dense coniferous forest habitat available on Site.	This species was not observed during the 2019 breeding bird surveys.	Any potential impacts to this species resulting from the development should be sufficiently mitigated provided the EIS recommendations are adhered to.
Grasshopper Sparrow	<i>Ammodramus savannarum</i>	SC	No Schedule	SC	SC	S4B	The grasshopper sparrow has recently been listed as a special concern species both federally and provincially (COSEWIC, 2018, COSSARO, 2018). This species inhabits open grasslands and prairies. It will also nest in hayfields and pastures, as well as alvars and occasionally grain crops such as barley (Ministry of Natural Resources and Forestry, 2018)	OBBA	Low	No suitable grassland or agricultural habitat on Site.	This species was not observed during the 2019 breeding bird surveys.	Any potential impacts to this species resulting from the development should be sufficiently mitigated provided the EIS recommendations are adhered to.
Olive-sided Flycatcher	<i>Contopus cooperi</i>	THR	1	THR	SC	S4B	The Olive-sided Flycatcher is listed as a species of special concern provincially (COSSARO, 2018) and threatened nationally (COSEWIC, 2018). This species is often found along natural mature forest edges and openings with dead trees, used for foraging perches. Breeding habitat usually consists of coniferous or mixed forests adjacent to rivers or wetlands (Ministry of Natural Resources and Forestry, 2018).	OBBA	Moderate	Mid-succession forest habitat found on Site, in proximimity to wetland habitat.	This species was not observed during the 2019 breeding bird surveys.	Any potential impacts to this species resulting from the development should be sufficiently mitigated provided the EIS recommendations are adhered to.
Red-headed Woodpecker	<i>Melanerpes erythrocephalus</i>	THR	1	END	SC	S4B	The Red-headed Woodpecker is listed provincially as a special concern species (COSSARO, 2018) and federally as threatened (COSEWIC, 2018). This species can be found in open woodland and woodland edges, often near man-made landscapes such as parks, golf courses and cemeteries. These areas must contain a large number of dead trees for perching and nesting (Ministry of Natural Resource and Forestry, 2018).	OBBA	Low	Limited habitat available on Site due to forest density and lack of standing snags. Edge habitat front roads.	This species was not observed during the 2019 breeding bird surveys.	Any potential impacts to this species resulting from the development should be sufficiently mitigated provided the EIS recommendations are adhered to.
Wood Thrush	<i>Hylocichla mustelina</i>	THR	1	THR	SC	S4B	The Wood Thrush is a species of special concern provincially (COSSARO, 2018) and threatened nationally (COSEWIC, 2018). It breeds in deciduous and mixed forests with a moderate understory, shade and abundant leaf litter where it forages for food, including larval and adult insects as well as plant material (Ministry of Natural Resources and Forestry, 2018).	OBBA	High	Suitable woodland habitat present on site.	This species was not observed during the 2019 breeding bird surveys.	Any potential impacts to this species resulting from the development should be sufficiently mitigated provided the EIS recommendations are adhered to.



Appendix E: Species at Risk Habitat Suitability Analysis

		FEDERAL STATUS			PROVINCIAL STATUS								
COMMON NAME	SCIENTIFIC NAME	SARA	SCHEDULE	COSEWIC	SARO	S-RANK	HABITAT REQUIREMENTS	SOURCE	POTENTIAL HABITAT PRESENT (High/Moderate/Low)	RATIONALE	FIELD SURVEY RESULTS	IMPLICATIONS AND IMPACTS	
HERPTILES													
Eastern Milksnake	<i>Lampropeltis triangulum</i>	SC	1	SC	NAR	S4	The Eastern Milksnake is listed as a special concern species federally (COSEWIC, 2018) and has recently been recently delisted from being a species at risk in Ontario (Ministry of Natural Resources and Forestry, 2018).	ORAA	Low	Limited habitat available on Site. No rocky outcrops, fields or large open areas on Site.	No specific survey undertaken.	Any potential impacts to this species resulting from the development should be sufficiently mitigated provided the EIS recommendations are adhered to.	
Snapping Turtle	<i>Chelydra serpentina</i>	SC	1	SC	SC	S3	The Snapping Turtle is considered a species of special concern provincially and federally (COSSARO, 2018; COSEWIC, 2018). This species spends the majority of their lives in water and will travel upland to gravel or sandy embankments, roadsides, along railway lines or beaches to lay their eggs (Ontario Ministry of Natural Resources and Forestry, 2018).	ORAA / NHIC	Low	Limited habitat available on Site. Limited suitable nesting habitat present and no areas of open water on Site.	No specific survey undertaken. No incidental turtle or turtle nesting signs during 2019 field investigations.	Any potential impacts to this species resulting from the development should be sufficiently mitigated provided the EIS recommendations are adhered to.	
Western Chorus Frog	<i>Pseudacris triseriata</i>	THR	1	THR	-	S3	The Great Lakes/St. Lawrence – Canadian Shield population of the Western Chorus Frog is federally listed as threatened by COSEWIC. This small frog is primarily a lowland terrestrial species that requires access to terrestrial and aquatic habitats in close proximity to one another. Relying on marshes and wooded wetlands adjacent to forested habitats, this species also requires isolated, predator free pools for breeding. Temporary pools, such as vernal pools in wooded areas, are preferred. This species hibernates terrestrially in a variety of environments, including leaf litter, wood debris, and vacant animal burrows (Government of Canada, 2016)	ORAA	Low	Limited habitat available on Site. No suitable breeding habitat present and no areas of open water on Site.	This species was not recorded during the 2019 amphibian surveys or as an incidental during 2019 field investigations.	Any potential impacts to this species resulting from the development should be sufficiently mitigated provided the EIS recommendations are adhered to.	

SC - Special Concern
THR - Threatened
END - Endangered
S1 - Extremely rare in Ontario
S2 - Very rare in Ontario
S3 - Rare to uncommon in Ontario
S4 - Considered to be common in Ontario
S5 - Species is widespread in Ontario
SH - Possibly extirpated
S#S# - Indicates insufficient information exists to assign a single rank.
S#? - Indicates some uncertainty with the classification due to insufficient data.
S#N - Nonbreeding
S#B - Breeding