



# Scoped Environmental Impact Study for Bellisle Heights Subdivision Phase 4, Town of Penetanguishene

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Prepared for: Bellisle (Penetang) Developments Inc.



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## 1.0 Introduction

Cambium Inc. (Cambium) was retained by Bellisle (Penetang) Developments Inc. (the Client) to conduct a Scoped Environmental Impact Study (EIS) for the proposed Phase 4 of the Bellisle Heights subdivision in the Town of Penetanguishene, Ontario (Figure 1). The property is legally described as Part of the East Half of Lot 114, Concession 1, West of Penetanguishene Road. This EIS will determine any potential adverse impacts to the natural heritage features identified on and/or adjacent to the property including the woodlands located on the southern limit of the proposed development (Figure 2). This report will also provide appropriate avoidance and mitigation measures to reduce the potential impacts to these features as well as any potential compensation measures that may be required.

In order to address the EIS requirements of the regulatory agencies, Cambium conducted a scoped study to provide an evaluation of reasonably anticipated ecological impacts, positive or negative, that may arise as a result of the proposed development, to guide the planning decision making process. Specifically, Cambium assessed the potential for negative impacts to the woodlands and potential habitat for Species at Risk (SAR), as directed by the Provincial Policy Statement, 2014 (PPS).

### 1.1 Scope of Work

A Terms of Reference (ToR) for the EIS was developed in consultation with the Town of Penetanguishene, the Severn Sound Environmental Association (SSEA) and the Ontario Ministry of Natural Resources and Forestry (MNRF). Email correspondence (dated April 24, 2018) indicated acceptance of this document.

The EIS was conducted through the following three (3) tasks:

- Task 1 consisted of a detailed document review of existing and readily available information related to the subject property.



- Task 2 included site visits to the property on May 1<sup>st</sup> and 29<sup>th</sup>, June 6<sup>th</sup>, 26<sup>th</sup>, and 28<sup>th</sup>, and July 9<sup>th</sup>, 2018, to validate or revise any assumptions made in the previous task, and to add detailed site-specific information as observations were made.
- Task 3 was the evaluation of the potential impacts of the proposed development on the woodlands based on the information gathered through Tasks 1 and 2.

The EIS includes a species at Risk (SAR) screening to determine if the Site is used as habitat by any provincially or federally listed at-risk species.



## **2.0 Applicable Natural Heritage Policies and Regulations**

### **2.1.1 Provincial Policy Statement**

Section 2.0 of the Provincial Policy Statement (PPS) (Ministry of Municipal Affairs and Housing, 2014) speaks to the protection of natural heritage, water, agricultural, mineral and cultural heritage and archaeological resources for their economic, environmental and social benefits. Section 2.1 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, significant areas of natural and scientific interest, 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 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 or, in the case of fish habitat and the habitat of endangered and threatened species, only in accordance with provincial and federal requirements. 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.

Research and field investigations confirm that the site does not contain and is not adjacent to significant wetlands, significant coastal wetlands, significant valleylands, significant wildlife habitat, or significant areas of natural and scientific interest. This report, therefore, focuses on the potential impact of the proposed development on significant woodlands and habitat of endangered species and threatened species.

### **2.1.2 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). Policies that reference the provincial NHS apply once the municipal Official Plan has incorporated the provincial NHS into their schedules; until that time, the policies that reference the NHS will apply outside settlement areas to the natural heritage systems identified in Official Plans that were approved and in effect as of July 1, 2017. The subject Site is located within the Town's settlement area; as such, the natural heritage policies of the GPGGH do not apply to the subject development.

### **2.1.3 County of Simcoe Official Plan**

According to the County of Simcoe Official Plan (County of Simcoe, 2016), the Site is identified within Schedule 5.1 Land Use Designations as 'Settlement'. Surrounding land use designations include Greenlands and Rural designations; however, the primary land use designation of the immediate surrounding area is also 'Settlement'.

The Greenlands policies of the County of Simcoe Official Plan seek to protect the natural heritage system outside of settlement areas. It is noted that the development proposal is within the settlement area; therefore, these specific Greenlands policies would not apply. Sections 3.1.3 and 3.8.17 of the County Official Plan speak to the protection and enhancement of local natural heritage systems, including within settlement areas, through local official plans and sets out requirements for an EIS when considering development applications. Furthermore, Section 3.8.12 provides that lower-tier municipal Official Plans have policies and mapping that implements the County Greenlands designation.

### **2.1.4 Town of Penetanguishene Official Plan (November 2018)**

A new Official Plan was recently adopted by the Town of Penetanguishene and has been approved by the County of Simcoe. This new Official Plan is, as of January 2020, in substantial





effect, save for one site-specific appeal which does not impact the Bellisle Heights Phase 4 lands. Within this document, the Site is identified in Schedule A (Land Use Structure) as 'Neighbourhood Area' in the northern portion and 'Rural Area' in the southern portion. Schedule B1 (Policies Overlay) designates a portion of the Site as "Environmental Protection".

The policies of Section 3.10 of the existing Town of Penetanguishene Official Plan restrict development on lands adjacent to environmentally protected lands. These policies require that any development proposal must demonstrate that it does not adversely affect the critical natural features and ecological functions of significant woodlots, significant wildlife habitat and habitats of vulnerable, threatened or endangered plant or animal species.

With respect to the habitat of endangered and threatened species, Section 3.10.2 of the new Official Plan states:

*"Development and site alteration shall not be permitted in the Habitat of Endangered Species and Threatened Species except in accordance with Provincial and Federal requirements", and*

*"Development and site alteration shall not be permitted on land adjacent to the Habitat of Endangered Species and Threatened Species, unless the ecological function of the adjacent land has been evaluated and it has been demonstrated that there will be no negative impacts on the natural features or on their ecological functions that cannot be adequately mitigated."*

The Environmental Protection policies in the new Official Plan reflect the natural heritage policies of the Growth Plan and seek to protect significant woodlands. Significant Woodlands are identified as Environmental Protection on Schedule B1 of the new Official Plan. Policies of the new Official Plan require that any proposed development within an Environmental Protection area must demonstrate that there will be no negative impacts on the natural heritage feature or its ecological functions.

Finally, the new Official Plan also encourages the planting and preservation of native tree species including provisions for the planting of replacement trees within new developments.



## **2.1.5 Town of Penetanguishene Zoning By-law (Office Consolidation, January 9, 2012)**

Schedule A of the Township of Penetanguishene Zoning By-law (No. 2000-02) designates the property as Rural and Environmental Protection. The development proposal will require an amendment to the zoning by-law to rezone the rural area to residential. The woodlands appear to form part of the Environmental Protection Zone. Section 12 of the By-law outlines the provisions and permitted uses.

## **2.1.6 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). 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. Protection of Special Concern species is achieved through designation of their habitat as significant wildlife habitat (SWH) under the PPS.



## **3.0 Technical Approach and Methodologies**

### **3.1 Background Information Review**

All available relevant documents and the most recent background information of the Site and the surrounding study area were collected. This included recent aerial photography, natural areas mapping, wetland mapping, and Official Plans and Schedules of the County of Simcoe and the Town of Penetanguishene. In addition, the following resources were reviewed:

- Land Information Ontario and Ministry of Natural Resources & Forestry (MNR) Data via the Natural Heritage Areas: Make-a-map Online Mapping Tool; Accessed March 21, 2018.
- MNR Natural Heritage Information Centre (NHIC) database (1km UTM grid Square 17NK8356 (western portion) and 17NK8456 (eastern portion); Accessed March 21, 2018.
- Ontario Breeding Bird Atlas data (BSC, 2001 – 2005 field data).

The local MNR District office (Midhurst District) was contacted directly to obtain any additional relevant SAR, wetland and/or natural area data associated with the Site or the adjacent lands. A record of Cambium's correspondence with MNR (Jodi Benvenuti, Management Biologist) is included in Appendix A.

### **3.2 Field Investigations**

The Site was visited by Cambium staff on multiple occasions throughout the spring and summer of 2018. The purpose of the site visits was to verify information acquired through existing documentation and to gather additional site-specific information. Specifically, Cambium investigated the physical and ecological relationships between the subject Site and the adjacent woodlot, made observations of flora and fauna, and assessed the Site for the presence of SAR and their habitats.

The field investigations included the following, part of which was at the direction of MNR:



- Characterization and classification of the vegetation communities at the Site based on MNR's Ecological Land Classification for Southern Ontario (ELC) (Lee et al, 1998);
- Incidental observations of fauna including direct sightings and actively searching for evidence, both direct and indirect, such as calls, tracks, scat, burrows, dens and browse.
- Breeding Bird Surveys.
- Actively searching the Site for the presence of SAR (i.e. Whip-poor-wills, turtles) and their habitats.

Further details of the site visits are provided in Table 1, below. Representative Site photos are included in Appendix B.

**Table 1 Summary of Field Investigations**

Date	Time On Site	Weather Conditions	Field Staff	Protocol
May 1, 2018	1520 – 1455 hrs	27°C, 10% cloud	Jeremy Prahli; Danielle Langlois	Bat Maternity Roost Survey Protocol (MNRF – Midhurst, 2015)
May 29, 2018	2056 – 2130 hrs	24°C; 20% cloud; Wind – 2; no precipitation; Moon illumination – 98%	Danielle Langlois	MNRF WPWI protocol (August 2013) Turtle visual encounter nesting survey (MNRF Blanding's Turtle Survey Protocol, 2015)
June 6, 2018	0700 – 0715 hrs	10°C, overcast; wind – 2; Noise – 2	Luke Berg	Bird Studies Canada (BSC) point count methodologies (2001) Turtle visual encounter nesting survey (MNRF Blanding's Turtle Survey Protocol, 2015)
June 26, 2018	2145 – 2220 hrs	19°C; clear skies; Wind 1-2; Moon illumination – 98 %	Jeremy Prahli	MNRF WPWI protocol (August 2013) Turtle visual encounter nesting survey (MNRF Blanding's Turtle Survey Protocol, 2015)
June 28, 2018	0640 – 0655 hrs	19°C, overcast; wind – 1, Noise - 0	Luke Berg	Bird Studies Canada (BSC) point count methodologies (2001) Turtle visual encounter nesting survey (MNRF Blanding's Turtle Survey Protocol, 2015)
July 9, 2018	1430 – 1530 hrs	33°C, sunny, hot	Tyler Jamieson	ELC (Lee et al, 1998) Turtle visual encounter nesting survey (MNRF Blanding's Turtle Survey Protocol, 2015)

### 3.2.1 Breeding Bird Surveys

Two (2) breeding bird surveys were carried out during the peak breeding season, in June, 2018 (Table 1). Point counts were carried out 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 done between dawn and 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.

For the purpose of this study, two (2) point count sites were established to document bird activity at the Site. The location of the point count sites can be found on Figure 3.

### 3.2.2 Targeted Species at Risk Surveys

#### 3.2.2.1 Whip-poor-will Surveys

Surveys for Whip-poor-will (*Caprimulgus vociferous*) presence were conducted following the Survey Protocol for Eastern Whip-poor-will in Ontario (Ministry of Natural Resources and Forestry, 2013). Briefly, the protocol recommends the use of a point count method. Surveys are to be conducted between May 18 and June 30, on nights with ideal field conditions (i.e., no precipitation, low noise levels, little or no wind (less than 12 kph), clear skies, and good visibility). Since moon phase is known to affect calling rates, the moon should be greater than 50% illuminated, and above the horizon (generally one week prior to and following the full moon). The sky should have little or no cloud cover, and temperatures should be above 10°C. Points should be established 500 m apart, and visited at least three (3) times during the recommended survey window. During each survey, each point should be visited for 5 minutes and all calling whip-poor-wills should be recorded within 300 m, including the direction and approximate distance from the survey point.

For the purpose of this study, one (1) Whip-poor-will survey point was established and two (2) surveys were completed, per MNR direction (Figure 3). The dates and times of each survey, and the environmental conditions are provided in Table 1.

#### 3.2.2.2 Turtle Surveys

The presence of turtle nesting on or adjacent to the Site was assessed using the nesting protocols contained in the MNR guidance document *Survey Protocol for Blanding's Turtle*



(*Emydoidea blandingii*) in Ontario (Ontario Ministry of Natural Resources and Forestry, 2015). According to the protocol, nesting surveys should be conducted by first observing suitable nesting habitat from a distance and then searching the nesting habitat for evidence of digging/trial nests and depredated nests. If conducted during nesting season (late May to early July), these surveys should be done in the evening or morning.

For the purpose of this study, a total of five (5) visual encounter nesting surveys were conducted at the Site (see Table 1). Turtle surveys focused on areas which presented ideal nesting habitat (i.e., sandy or gravelly soils). Any observed signs of nesting such as disturbed soils, tracks, predated nests, etc., were recorded.

### 3.2.2.3 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 17, 2018, using the methods detailed in the *Bat and Bat Habitats: Guidelines for Wind Power Projects* (the Guideline) (Ministry of Natural Resources, 2011). Although this MNR 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  $\leq 10$  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  $\geq 25$  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  $\geq 25$  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 treed area within the Site boundaries was anticipated to be relatively small, the entire woodlot south of the Site 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 Location and Land Use**

The subject lands are located in the southwest portion of the Town of Penetanguishene, also known as Part of Lot 114, Concession 1, West of Penetanguishene Road. The Site is situated approximately 900 m southwest of the main intersection of Robert Street and Main Street. The proposed development is situated at the western edge of an existing new residential development with access being proposed off Hatton Drive.

The subject property is located within the jurisdiction of the MNRF (Midhurst District), within the Georgian Bay watershed. The Site is approximately 800 m south of the shoreline of Georgian Bay's South Basin. Woodlands are located along the southern and western edges of the proposed development. An existing sand and gravel pit was noted further to the southeast.

### **4.2 Topography and Overland Drainage**

The Site is predominantly comprised of a large excavated borrow pit feature, with steep embankments located along the northern and southern boundaries. This appears to have been created as a result of historical earthworks and the majority of the Site has been disturbed as a result.

### **4.3 Surface Water Features**

There are no watercourses, waterbodies, headwater drainage features, springs or seeps on or within 120 m of the Site. A deep erosion scar from easterly surface flow was observed on May 1, 2018 (see Appendix B).

### **4.4 Vegetation Communities**

In total, two (2) distinct vegetation communities exist within the assessment area. The vegetation communities on the property were initially classified through aerial photograph interpretation and were confirmed through the vegetation inventory conducted on June 9,



2018. The Ecological Land Classification (ELC) System for Southern Ontario (Ministry of Natural Resources, 2013) was used to classify the vegetation communities on the property, which are described in detail in the following sections. Definitions of vegetation types are derived from the ELC for Southern Ontario First Approximation Field Guide (Lee, et al., 1998) and the revised 2008 tables. A vegetation species list is included as Appendix C.

#### **4.4.1 Terrestrial Vegetation Communities**

##### **Community 1: Disturbed Area (No applicable ELC Code)**

The majority of the Site was considered disturbed with large areas of parental soil material (sand and gravel) exposed. A number of young sapling tree species were noted scattered throughout this area and generally on the perimeter of the community including Manitoba Maple (*Acer negundo*), Sugar Maple (*Acer saccharum*), Northern Red Oak (*Quercus rubra*), Eastern White Pine (*Pinus strobus*) and White Spruce (*Picea glauca*). Shrubs found consisted of Staghorn Sumac (*Rhus typhina*) and Hawthorn species (*Crataegus spp.*). The ground cover, although sparse, contained Common Mullein (*Verbascum thapsus*), Curly Dock (*Rumex crispus*), White Sweet Clover (*Melilotus albus*), Field Horsetail (*Equisetum arvense*), Bird's-foot Trefoil (*Lotus corniculatus*), Common Milkweed (*Asclepias syriaca*) and Wild Carrot (*Daucus carota*).

##### **Community 2: Dry – Fresh Oak - Hardwood Deciduous Forest (ELC Code: FOD2-4)**

This deciduous forest community was located along the southern edge of the Site and was dominated by Northern Red Oak with associates of Sugar Maple, American Beech (*Fagus grandifolia*), Ironwood (*Ostrya virginiana*), White Birch (*Betula papyrifera*), and Trembling Aspen (*Populus tremuloides*) and Eastern White Pine. The shrub layer consisted of Allegheny Blackberry (*Rubus allegheniensis*) and the vine Virginia Creeper (*Parthenocissus quinquefolia*). The herbaceous layer included Wild Lily-of-the-valley (*Maianthemum canadense*), and poison ivy (*Toxicodendron radicans*).



## 4.5 Birds

The Ontario Breeding Bird Atlas (OBBA) was reviewed to identify significant bird species that may be found in the 10 km grid square 17NK85 that contains the subject Site. Species of conservation concern included Least Bittern (*Ixobrychus exilis*), Black Tern (*Chlidonias niger*), Common Nighthawk (*Chordeiles minor*), Whip-poor-will (*Antrostomus vociferous*), Chimney Swift (*Chaetura pelagica*), Red-headed Woodpecker (*Melanerpes erythrocephalus*), Olive-sided Flycatcher (*Contopus cooperi*), Eastern Wood-pewee (*Contopus virens*), Loggerhead Shrike (*Lanius ludovicianus*), Bank Swallow (*Riparia riparia*), Barn Swallow (*Hirundo rustica*), Wood Thrush (*Hylocichla muystelina*), Golden-winged Warbler (*Vermivora chrysoptera*), Canada Warbler (*Cardellina canadensis*), Bobolink (*Dolichonyx oryzivorus*) and Eastern Meadowlark (*Sturnella magna*).

Nineteen (19) species were documented during the point count surveys and twenty four (24) bird species were documented in total, including incidental observations made on previous and subsequent site visits. A bird species list is included as Appendix D.

Species observed within the Site area proposed for development included: American Goldfinch (*Spinus tristis*), Common Grackle (*Quiscalus quiscula*), Song Sparrow (*Melospiza melodia*), American Robin (*Turdus migratorius*), American Crow (*Corvus brachyrhynchos*), Blue Jay (*Cyanocitta cristata*) and Morning Dove (*Zenaida macroura*). Some of the birds observed in the adjacent woodlands included Cedar Waxwing (*Bombycilla cedrorum*), Indigo Bunting (*Passerina cyanea*), Baltimore Oriole (*Icterus galbula*) and Chestnut-sided Warbler (*Setophaga pensylvanica*). None of these species are considered rare or at risk in this region of Ontario.

## 4.6 Amphibians and Reptiles

The subject Site is highly disturbed and no wetlands suitable for amphibian breeding were identified on or adjacent to the Site. As such, there was no requirement for targeted amphibian surveys. Regardless, Cambium staff did actively search for any evidence of amphibians and reptiles during all site visits. Particular effort was placed on searching the disturbed areas for evidence of nesting or attempted nesting by Blanding's Turtles or other turtle species (see



Section 3.2.2.2). Although the Site contained suitable substrate for turtles (sand and gravel), no evidence of nesting, nesting attempts or predated nests were observed.

#### 4.7 Mammals

The results of the bat maternity roost surveys (see Section 3.2.2.3) revealed a total of two (2) candidate snag/cavity trees (Figure 4). Therefore, using the equation provided in the applicable protocol, it was determined that exit surveys were not required as the total number of snags did not meet the criteria requiring additional surveys for bat maternity colonies.

#### 4.8 Species at Risk

The MNRF's Make-a-Map: Natural Heritage Areas online mapping tool was consulted to identify occurrences of species at risk (SAR) on, or in the vicinity of the Site. The online tool and the general habitat on site identified ten (10) species.

- Butternut (*Juglans cinerea*) – Endangered
- Wood Thrush (*Hylocichla mustelina*) – Special Concern
- Eastern Wood-Pewee (*Contopus virens*) – Special Concern
- Bank swallow (*Riparia riparia*) – Threatened
- Massasauga Rattlesnake (*Sistrurus catenatus*) – Threatened
- Snapping Turtle (*Chelydra serpentina*) – Special Concern
- Eastern Small-footed Myotis (*Myotis leibii*) – Endangered
- Little Brown Myotis (*Myotis lucifugus*) – Endangered
- Northern Myotis (*Myotis septentrionalis*) – Endangered
- Tri-colored Bat (*Perimyotis subflavus*) – Endangered

The MNRF was contacted directly to obtain any further records of SAR or their habitats that may be present at, or in the vicinity of the Site. Direct correspondence with the MNRF



(Appendix A) revealed that there are three (3) records of SAR species reported within 5 km of the Site, as outlined below:

- Eastern whip-poor-will (*Antrostomus vociferous*) – Threatened
- Eastern Hog-nosed Snake (*Heterodon platirhinos*) – Threatened
- Blanding's Turtle (*Emydoidea blandingii*) – Special Concern

### **Butternut - Endangered**

The butternut is designated as endangered by COSSARO and is tracked by the NHIC as a species at risk. The tree is federally regulated by the Species at Risk Act (2002). Butternut belongs to the walnut family and produces edible nuts which are a preferred food source for wildlife. The range of butternut trees is south of the Canadian Shield on soils derived from calcium rich limestone bedrock. Butternut trees, which at one time were much more common to the south extending to the northern aspect of zone 6E, have been declining due to factors including forest loss and disease. Butternut trees suffer from a highly transmissible fungal disease called butternut canker. Butternut canker is causing very rapid decline in this tree species across its native range. The fungal disease is easily transmitted by wind and is very difficult to prevent. Trees often die within a few years of infection by butternut canker (Ministry of Natural Resource and Forestry, 2014).

Butternut was searched for while conducting vegetation community inventories; however, no butternut were located during those surveys.

### **Wood Thrush - Special Concern**

The Wood Thrush is a species of Special Concern because of habitat degradation or destruction by anthropogenic development. The Wood Thrush is a medium-sized songbird, generally rusty-brown on the upper parts with white under parts and large blackish spots on the breast and sides, and about 20 cm long. The Wood Thrush forages for food in leaf litter or on semi-bare ground, including larval and adult insects as well as plant material. They seek moist stands of trees with well-developed undergrowth in large mature deciduous and mixed (conifer-deciduous) forests (Ministry of Natural Resources and Forestry, 2014). There may be



suitable habitat for this species within the woodlands; however, this species was not observed on the Site during field investigations.

### **Eastern Whip-poor-will – Threatened**

Once widespread throughout the central Great Lakes region, distribution of the Eastern Whip-poor-will in this area is now fragmented. Although there is uncertainty about the causes of the population decline, the main threat is likely habitat loss and fragmentation. Additional threats may include car mortality and food supply changes related to pesticides and climate change. The eastern whip-poor-will is usually found in areas with a mix of open and forested areas, such as patchy forests with clearings, forests that are regenerating after major disturbances, savannahs, open woodlands or openings in more mature forests. Breeding habitat is dependent on forest structure rather than composition, although common tree associations are pine and oak, and it nests directly on the forest floor. Its distinctive call can be heard at dusk or dawn during the breeding season, and whip-poor-wills heard singing between mid-May and mid-July are likely local breeders (Committee on the Status of Endangered Wildlife in Canada, 2009). There may be suitable nesting habitat within the surrounding woodlands; however, no birds were heard on or adjacent to the Site while conducting the targeted Whip-poor-will evening surveys.

### **Bank Swallow – Threatened**

The Bank Swallow is threatened by loss of breeding and foraging habitat, destruction of nesting habitat and widespread pesticide use. Bank Swallows are small songbirds with brown upperparts, white underparts and a distinctive dark breast band. It averages 12 cm long and weighs between 10 and 18 grams. The swallow can be distinguished in flight from other swallows by its quick, erratic wing beats and its almost constant buzzy, chattering vocalizations. They nest in burrows in natural and human-made settings where there are vertical faces in silt and sand deposit, including banks of rivers and lakes, active sand and gravel pits or former pits where the banks remain suitable. The birds breed in colonies ranging from several to a few thousand pairs (Ministry of Natural Resources and Forestry, 2014). This species was noted flying over the area on June 6<sup>th</sup>, however they were not present during the



breeding bird surveys on June 28<sup>th</sup>, 2018. This species may just have been foraging over the area as they migrated through. Steep banks were located along the southern edge of the open disturbed area; however, no nesting burrows were observed during field investigations.

### **Eastern Wood-Pewee - Special Concern**

The Eastern Wood-pewee is classified as a species of special concern by COSSARO. Their population has been gradually declining since the mid-1960's (The Cornell Lab of Ornithology, 2015). The Eastern Wood-pewee is a "flycatcher", a bird that eats flying insects. It 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. Threats to the population are largely unknown; however, causes may include loss of habitat due to urban development and decreases in the availability of flying insect prey (Ministry of Natural Resources and Forestry, 2014). There may be suitable habitat for this species within the surrounding woodlands; however, this species was not heard or observed during field investigations.

### **Eastern Hog-Nosed Snake – Threatened**

The Eastern Hog-nosed snake is classified as a threatened species by COSSARO, and is one of Ontario's most interesting reptiles, with a very unique defence system. The eastern hog-nosed, if challenged by a predator, rises to strike in a way that is reminiscent of a cobra, and then proceeds to roll onto its back and play dead. Despite its somewhat threatening appearance, the eastern hog-nosed snake is a harmless predator of many amphibians. Eastern Hog-nosed snakes prefer sandy well drained habitats such as beaches and dry forests because they lay their eggs and hibernate in these areas. The main diet of this snake is toads and frogs, so they usually stay close to water including marshes and swamps, where they have an increased chance of finding their preferred prey (Ministry of Natural Resource and Forestry, 2014). No evidence of snake activity was noted during the field investigations.

### **Massasauga Rattlesnake – Threatened**

The Massasauga is a stout-bodied rattlesnake, about 50-70 centimetres long, and is Ontario's only venomous snake. Massasaugas live in a range of different habitats throughout Ontario, including tall grass prairies, marshes, bogs, shorelines, forests, and alvars. Within these



habitats they require open areas to warm themselves in the sun. In Ontario, the Massasauga is found primarily along the eastern side of Georgian Bay, and on the Bruce Peninsula (Ministry of Natural Resources and Forestry, 2017). Two (2) small populations are also found in the Wainfleet Bog, on the northeast shore of Lake Erie, and near Windsor. The most significant threat to the Massasauga is persecution by humans, mortality on road, and loss of habitats. This species was last observed in 1969 (NHIC record) and due to increased development surrounding the Site, it is unlikely to be seen in this area.

### **Blanding's Turtle – Threatened**

Blanding's turtles are threatened in Ontario primarily as a result of habitat loss and fragmentation. Blanding's turtles spend the majority of their life cycle in the aquatic environment, using terrestrial sites for travel between habitat patches and to lay clutches of eggs. These turtles prefer shallow nutrient rich water with organic sediment and dense vegetation. Blanding's turtles nest in dry coniferous and mixed forest habitats, as well as fields and roadsides (Government of Canada, 2015). There is no suitable wetland habitat for this species on the Site and no evidence of nesting was observed during the targeted surveys.

### **Snapping Turtle – Special Concern**

The Snapping Turtle is a species of Special Concern in Ontario due to the potential for the species to become threatened or endangered as a result of biological factors or other identified threats. Snapping Turtles spend the majority of their lives in water and travel overland in search of suitable nesting sites such as gravelly or sandy stream side embankments or man-made sites including the gravel shoulders of roads and aggregate pits to lay their eggs (Ontario Ministry of Natural Resources and Forestry, 2014). Although the area was actively searched, no turtles or evidence of turtles, including nesting attempts or predated nests was observed while conducting field investigations.

### **Eastern Small-footed Myotis – Endangered**

The Eastern Small-footed Myotis, a bat, are an endangered species threatened by a disease known as white nose syndrome, caused by a fungus from Europe. Eastern Small-footed bat's fur has black roots and shiny light brown tips, giving it a yellowish-brown appearance. Its face



mask, ears and wings are black, and its underside is grayish-brown, about 8 cm long in size and weighs 4-5 grams. In the spring and summer, Eastern Small-footed bats will roost in a variety of habitats, including in or under rocks, in rock outcrops, in buildings, under bridges, or in caves, mines, or hollow trees. They change their roosting locations daily and hunt at night for insects to eat, including beetles, mosquitos, moths, and flies. They hibernate in winter, often in caves and abandoned mines. They can be found from south of Georgian Bay to Lake Erie and east to the Pembroke area, and choose colder and drier sites (Ministry of Natural Resources and Forestry, 2014).

### **Little Brown Myotis – Endangered**

Little Brown Myotis, a bat, are an endangered species threatened by a disease known as white nose syndrome, caused by a fungus from Europe. Little Brown Myotis have glossy brown fur and usually weigh between four and 11 grams. Bats are nocturnal. During the day they roost in trees and buildings. They often select attics, abandoned buildings and barns for summer colonies where they can raise their young. Little Brown Myotis hibernate from October or November to March or April, most often in caves or abandoned mines that are humid and remain above freezing – an ideal environment for the fungus to grow and flourish. The syndrome affects bats by disrupting their hibernation cycle, so that they use up body fat supplies before the spring when they can once again find food (Ministry of Natural Resources and Forestry, 2014).

### **Northern Myotis – Endangered**

The Northern Myotis, a bat, is an endangered species threatened by a disease known as white nose syndrome, caused by a fungus from Europe. Northern Myotis have dull yellow-brown fur with pale grey bellies. They are approximately 8 cm long, with a wingspan of about 25 cm, and usually weigh 6 to 9 grams. Northern Myotis can be found in boreal forests, roosting under loose bark and in the cavities of trees. These bats hibernate from October or November to March or April, most often in caves or abandoned mines (Ministry of Natural Resources and Forestry, 2014).





### **Tri-colored Bat – Endangered**

The Tri-colored Bat is a small bat that is widely distributed in eastern North America and whose range extends north to southern Ontario. The species is relatively rare in this region of Ontario, which is at the northernmost limit of its natural range. These bats prefer to nest in foliage, tree cavities and woodpecker holes, and are occasionally found in buildings; though this is not their preferred habitat. Winter hibernation takes place in caves, mines and deep crevices. The Tri-colored Bat feeds primarily on small insects and prefers an open forest habitat type in proximity to water (University of Michigan Museum of Zoology, 2004).

It is noted that the woodlands found south and west of the Site could be utilized by bats. Bat Maternity Roost surveys were completed within these adjacent woodlands and found two (2) candidate maternity roost trees which is below the criteria for Significant Wildlife Habitat designation.



## **5.0 Assessment of Natural Heritage Significance**

### **5.1 Natural Heritage Feature Protected by the PPS**

PPS sections 2.1.5 b) and 2.1.8 are intended to prevent development and site alteration in significant woodlands or on adjacent lands unless it has been demonstrated that there will be no negative impacts on the natural features or their ecological functions. Section 2.1.7 of the PPS prevents development in the habitat of endangered and threatened species.

Based on the background review and field investigations, one (1) natural heritage feature type that receives protection under the PPS was identified on or within 120 m of the Site (refer to Section 2.1.1).

#### **5.1.1 Significant Woodlands**

Significant Woodlands are natural heritage features that are afforded protection under the PPS (see Section 2.1.1). Significant Woodlands offer wildlife habitat for small mammals including raccoons, skunk, snowshoe hare and squirrels. The woodlands found in the southern portion of the Site and on adjacent lands provide edge habitat and are part of a larger expanse of connected woodlands located south and west of the Town of Penetanguishene.

The wooded areas on and adjacent to the Site are considered Significant Woodlands under the PPS, based on provincial criteria. This is mainly due its contiguity with an expansive woodland to the west. The footprint of the proposed development is located adjacent to and partially within the Significant Woodland. The subject deciduous forest community (FOD2-4) is relatively common in the local landscape and contains no species of conservation concern. Based on the current site plan, removal of approximately 0.69 ha of this woodland would be required to accommodate the proposed development. Provided that compensation is carried out for any loss of tree cover, and an Edge Management Plan is implemented for the newly created forest edge, the proposed development will not negatively impact this feature or its ecological functions. As a result, the proposed development would be consistent with policies of the PPS, GPGGH, County OP and Town OP, applicable to Significant Woodlands.



### **5.1.2 Habitat of Threatened and Endangered Species**

Information provided by MNRF indicates that two provincially listed bird species are likely to occur in the general area (Whip-poor-will and Blanding's Turtle; both Threatened). Neither of these species were observed on or adjacent to the Site during the field investigations.

SAR bats and bat habitat were also considered and investigated by Cambium. As previously noted, the woodlands did not meet the criteria for Significant Wildlife Habitat; however, suitable habitat for these species was documented on adjacent lands. Based on our SAR assessment, the proposed development will not occur within the habitat of endangered or threatened species, nor will it have negative impacts on potential SAR habitat identified on adjacent lands. As a result, the proposed development would be consistent with policies of the PPS, GPGGH, County OP and Town OP, applicable to the habitat of endangered and threatened species. Furthermore, based on our assessment, the proposed development complies with SAR regulations under the ESA.



## **6.0 Proposed Development and Site Alteration**

The proposed development is Phase 4 of an existing residential subdivision in the area. It consists of 33 residential lots and a dead-end road located immediately west of Phase 3. Access to the development will be from Hatton Drive. The current Draft Plan of Subdivision for Phase 4 (Dated January 16, 2020; refer to Figure 4) illustrates the location and configuration of the lots and roadway.



## **7.0 Impact Assessment and Recommendations**

The following sections provide appropriate mitigation measures and recommendations to ensure that the integrity of the current existing natural areas is protected and/or enhanced and that previously disturbed areas outside the development envelope are rehabilitated and/or stabilized (i.e., revegetated).

### **7.1 Surface Water Features**

Based on observation while conducting field investigations, no surficial water features (watercourses, ponds, drainage ditches) were noted. A small erosion scar was however observed which was likely caused by heavy rainfall events that have occurred in the region.

#### **7.1.1 Stormwater Management**

Runoff from the Site is expected to increase with the addition of impermeable surface (i.e. building roofs, roadways) and compacted surfaces with reduced infiltration capacity (i.e. laneways and parking areas). Measures to increase infiltration of run-off from these surfaces should be encouraged and, where possible, included in the Site Plan for the subdivision. Measures may include the use of grassed swales and rain gardens along roadways and laneways to capture and store run-off and facilitate infiltration. Eaves trough downspouts should be directed to grassed or vegetated areas (such as flower beds) and not onto laneways or roadways, to allow for infiltration of the run-off into the ground.

Where feasible, the Client should consider the use of permeable material options (i.e., interlocking brick, permeable pavements) for hardened surfaces within the subdivision, such as sidewalks, parking areas, or roadways.

#### **7.1.2 Water Quality**

The proposed development is within the municipally serviced area so wastewater generated within the development will likely be received by the municipality's wastewater treatment system.



## **7.2 Mitigation of Anthropogenic Influences**

Increases in development and human use of natural areas increase the likelihood of impacts to local ecology in a number of ways. Certain natural areas are more sensitive than others to anthropogenic pressures associated with development; dependant on area size, fragmentation and existing environmental stressors.

### **7.2.1 Erosion and Sediment Control**

The proposed development (Phase 4) is located between two steep embankments, on the north and south sides of the development envelope. To prevent further erosion and sediment from leaving the development limits, sediment and erosion control measures should be implemented around the perimeter of the Site. Measures include the installation of sediment fence (per Ontario Provincial Standard Drawing OPSD 219.110), stabilization of disturbed soils, minimizing the duration of exposure of disturbed soils, and avoiding work during precipitation events.

It is essential that all sediment fencing to be implemented at the Site be maintained in good working order until the area has been successfully revegetated. Any observed overland drainage channels originating from the development area, that may or may not have arisen as a result of erosion, should pass through a check dam structure (e.g., rock check dam) prior to discharge into any nearby drainage ditch or area beyond the development envelope. All sediment control measures should be removed and properly disposed of following site stabilization.

### **7.2.2 Noise and Artificial Lighting**

Noise will inherently increase in the area as development of the neighbouring properties continues. Construction activities have the potential to affect wildlife through the production of excessive noise. The use of heavy machinery, blasting equipment, or chainsaws and power tools produces loud noises that may interfere with foraging, hunting, breeding, resting or travel for species located with the area. It is important that any proposed works include planning



components to minimize noise and the resulting effects on local wildlife, particularly during the construction phase.

Artificial lighting can have an impact on nocturnal movement of wildlife. To minimize impacts to wildlife it is recommended that outdoor lights be operated on timers, rather than by motion detection, to limit impacts on the nocturnal movement of animals. Outdoor lighting should be directed at the ground rather than into the adjacent natural areas. Bulb wattage should be as low as practical while meeting the needs of the tenant and intent of the lighting.

### 7.2.3 Invasive Species

Invasive species are becoming problematic throughout Ontario and have the ability to adversely impact our natural landscapes. Invasive species tend to spread rapidly and out compete indigenous species, resulting in the displacement of indigenous species from their ecological niche. Typically, invasive species do not have a natural predator, parasite or disease in their new environment, so populations are able to increase without significant limitation.

The species that are the most common to the area that could potentially impact this property include; dog-strangling vine (*Cynanchum rossicum*), garlic mustard (*Alliaria petiolata*), and European buckthorn (*Rhamnus cathartica*). The following actions are recommended to ensure that the property does not become adversely impacted by invasive species:

1. Revegetate with species native to the local area.
2. Request fill and compost from reputable sources that are conscious of the potential for the spread of invasive species via these media.
3. Get to know the most common invasive species in the area. Brush off or clean any shoes, boots and equipment that have come into contact with invasive species before returning to the property.
4. Immediately eradicate invasive species if they are observed on the property. Do not compost invasive species.



5. Do not dispose of lawn or garden clippings in the forest to avoid species introductions.
6. Use existing access routes. This practice will reduce human contact with invasive species thereby reducing the potential for seeds and vegetative matter to be transported to other locations where invasive species may then become established.

Roads and trails act as conduits for the spread of invasive species and as such the spread of these species is difficult to control.

### **7.3 Potential Encounters with Wildlife**

Wildlife populations are not anticipated to be significantly impacted by the proposed development, since the natural travel corridors provided by the woodland feature located to the south and west will be maintained. The majority of the Site is currently highly disturbed although Cambium acknowledges that a portion of the woodlands (0.58 ha) located to the south will require removal to accommodate the development.

Common small mammals are assumed to reside and travel through the woodlands and surrounding upland areas. Raccoons, squirrels and skunks likely use portions of the property and adjacent forest for food, breeding and shelter. None of these species are reasonably expected to be impacted by the proposed development on the subject property. Household waste should be kept contained when outdoors and should be transferred regularly to a designated waste management facility, to discourage interactions with and habituation of wildlife.

#### **7.3.1 Birds**

Due to the disturbed nature of the Site, the subject property provides limited habitat for birds. The majority of the species noted were found in the adjacent woodlands or flying over the Site. The proposed future development of the property for residential use will not significantly impact species reliant on these habitats for several reasons. The proposed development will for the most part occur in the existing disturbed area. Only a small portion of the woodlands may require removal which may be dependant on slope stability studies in that location. As there





were no grasslands on the property, no area sensitive grassland species were observed on the Site.

Secondly, use of forest edge and forest interior will not be significantly altered as a result of the proposed development. Forest edge species are generalists, and will not be impacted by slight changes to their surroundings. Forest interior species, which are more sensitive to development, prefer nesting habitat of greater than 100 metres inside of the forest edge, and some sensitive species require nesting habitat greater than 200 metres within the forest edge. Existing conditions in respect to the availability of interior forest habitat will not change as a result of the development.

Based on the assessment of the property, the proposed development of the property is not expected to have a significant impact on local bird populations.

Nesting birds are protected under the Migratory Birds Convention Act (1994). Vegetation clearing on the Site should occur outside the 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. Nests discovered should be left undisturbed until young have fledged or the nest is determined to be unsuccessful.

### **7.3.2 Other Wildlife**

During any future construction activities at the Site, the area should be checked for turtles and snakes. 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 MNRF immediately. While the Site does not provide ideal habitat for turtles, workers should be aware of the nesting season for turtles which is May 15 to August 15.



## 7.4 Restoration Plantings

As cover from the deciduous forest community (FOD2-4; Significant Woodland) will be removed as a result of the proposed development, compensation will be required for the loss of vegetation. Discussions with the Town of Penetanguishene and/or SSEA will determine the nature of the plantings and the ratio of replacement that are required.

Cambium recommends that a Landscape Plan be prepared by a certified Arborist to ensure species planting densities, planting locations, and species selection are carried out in an acceptable manner and in compliance with Town of Penetanguishene standards. Note that the Landscape Plan should include plantings in the Edge Management Plan area.



## 8.0 Summary of Recommendations

The following recommendations are applicable to the proposed Phase 4 development of the Bellisle Heights subdivision in the Town of Penetanguishene, ON:

1. The development envelope and grading areas should be clearly defined and delineated by clearly marked stakes prior to any activities on the site.
2. Prior to the commencement of Site preparation activities (grading, placement of fill) perimeter heavy duty silt fencing and check dam structures should be installed to prevent sedimentation off Site. These measures should be maintained in good working condition throughout the construction phase and until the Site has been successfully revegetated and/or soils have been stabilized. All sediment control measures should be removed and properly disposed of, following site stabilization.
4. Vegetation clearing and grubbing of the Site should occur outside the main breeding bird season (April 15th – August 15th) as per Environment and Climate Change Canada guidelines.
5. Machinery and building materials should be stored within the work area throughout the construction period.
8. During construction, the Site should be regularly inspected for wildlife (turtles and snakes, in particular). If any individuals are encountered, they should be photographed and allowed time to move out of harm's way.
9. Though not identified in the field inventories, any species at risk discovered on the property must be left undisturbed as dictated 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 MNRF Midhurst District immediately.
10. A Landscape Plan should be prepared by a certified Arborist to compensate for the loss of tree cover in the deciduous woodland.



- 
11. An Edge Management Plan should be developed to enhance the diversity of vegetation in adjacent forested areas, and limit and/or prevent homeowners from encroaching into the adjacent Significant Woodland.



## 9.0 Conclusion

We note that, although the Site is largely cleared and highly disturbed, a Significant Woodland feature was identified in the southern portion of the Site. Provided that an Edge Management Plan is implemented for the newly created forest edge, the proposed development will not negatively impact this feature or its ecological functions. Furthermore, based on our Species at Risk assessment, the proposed development will not occur within habitat of endangered and threatened species, nor will it have negative impacts on potential Species at Risk habitat identified on adjacent lands.

As detailed in this report, based on the findings of our investigations and subject to the implementation of recommendations summarized in Section 8.0, it is our opinion that the proposed development:

- Conforms with the policies of the Growth Plan;
- Is consistent with the Natural Heritage policies of the Provincial Policy Statement;
- Conforms to the Greenlands policies of the Simcoe County Official Plan; and
- Conforms to the Natural Heritage policies of the existing and newly adopted Town of Penetanguishene Official Plans.

Respectfully submitted by:

### Cambium Inc.

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Project Manager / Senior Ecologist

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JPP/es



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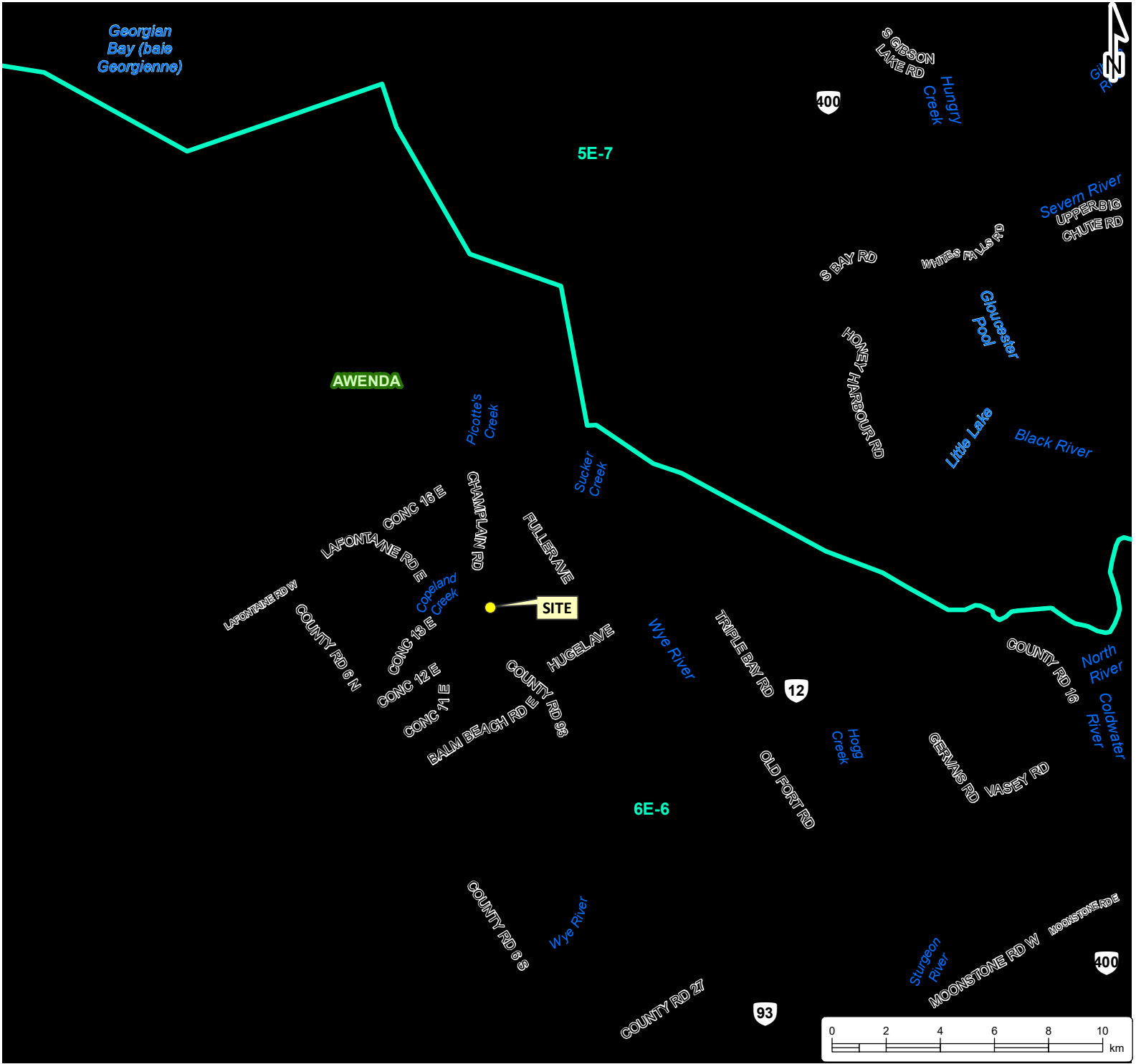
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## Appended Figures

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**ENVIRONMENTAL  
IMPACT STUDY  
BELLISLE (PENETANG)  
DEVELOPMENTS LTD.**  
Lot 114, Concession 1,  
Penetanguishene, Ontario

- LEGEND**
- Highway
  - Major Road
  - Watercourse
  - Water
  - Provincial Park
  - Federal Protected
  - Built-Up
  - Wooded
  - Ecodistrict

MNRF DISTRICT: Midhurst  
CONSERVATION AUTHORITY: N/A

**Notes:**  
 - Base mapping features are © Queen's Printer of Ontario, 2017 (this does not constitute an endorsement by the Ministry of Natural Resources or the Ontario Government).  
 - Distances on this plan are in metres and can be converted to feet by dividing by 0.3048.  
 - Cambium Inc. makes every effort to ensure this map is free from errors but cannot be held responsible for any damages due to error or omissions. This map should not be used for navigation or legal purposes. It is intended for general reference use only.

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**REGIONAL LOCATION PLAN**

Project No.: 7273-001		Date: August 2018	
Scale: 1:200,000		Rev.: N/A	
Created by: CPM		Checked by: JP/ES	
Projection: NAD 1983 UTM Zone 17N		Figure: <b>1</b>	





**ENVIRONMENTAL  
IMPACT STUDY  
BELLISLE (PENETANG)  
DEVELOPMENTS LTD.**  
Lot 114, Concession 1,  
Penetanguishene, Ontario

**LEGEND**

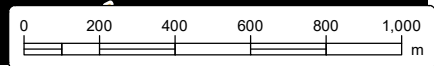
- Major Road
- Minor Road
- Watercourse (Unknown Thermal Regime)
- Watercourse (Cold)
- Contour 5m Interval (Major)
- Contour 5m Interval (Minor)
- Unevaluated Wetland
- Evaluated Wetland - Provincially Significant
- Wooded Area
- Wooded Area
- ANSI, Earth Science
- Waterbody (Unknown Thermal Regime)
- Subject Property (approx.)

**Notes:**  
 - Subject property is approximate and was obtained from De Fritas Engineering Inc. Draft Plan of Subdivision.  
 - Base mapping features are © Queen's Printer of Ontario, 2017 (this does not constitute an endorsement by the Ministry of Natural Resources or the Ontario Government).  
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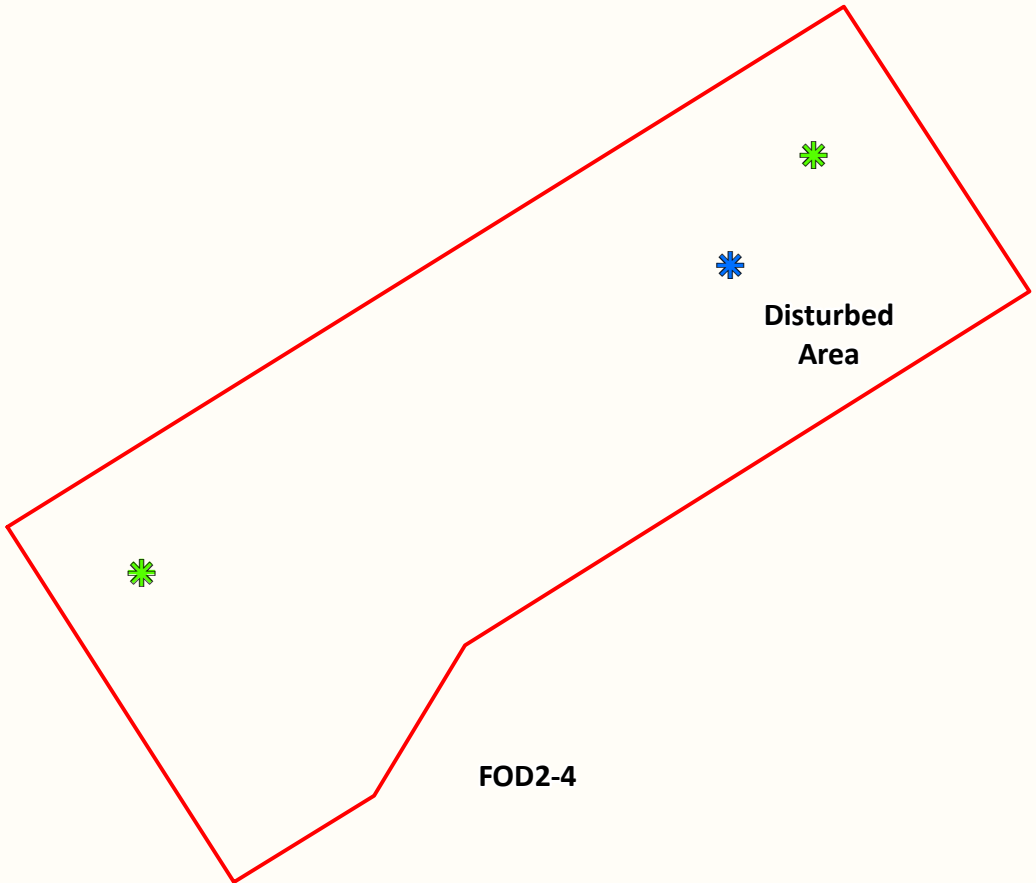
P.O. Box 325, 52 Hunter Street East  
 Peterborough, Ontario, K9H 1G5  
 Tel: (705) 742.7900 Fax: (705) 742.7907  
 www.cambium-inc.com

**LOCAL NATURAL  
HERITAGE FEATURES**

Project No.: 7273-001	Date: August 2018
Scale: 1:20,000	Rev.: JP/ES
Created by: CPM	Checked by: JP/ES
Projection: NAD 1983 UTM Zone 17N	Figure: <b>2</b>



O:\GIS\project\_MXD\Bellisle\200729\7273-001 Bellisle (Penetang) Developments - EIS - Bellisle Heights Phase 4 - Town of Penetanguishene\2018-07-31 Fig 3 - Site Natural Heritage Features.mxd



**ENVIRONMENTAL  
IMPACT STUDY**  
**BELLISLE (PENETANG)**  
**DEVELOPMENTS LTD.**  
 Lot 114, Concession 1,  
 Penetanguishene, Ontario

**LEGEND**

- Breeding Bird Survey Station
  - Whip-poor-will Survey Station
  - Candidate Bat Maternity Roost Tree
  - Subject Property (approx.)
- Vegetation Communities:**
- Disturbed
  - FOD2-4

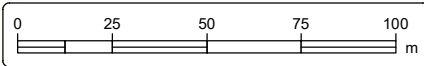
**Notes:**  
 - Subject property is approximate and was obtained from De Fritas Engineering Inc. Draft Plan of Subdivision.  
 - Aerial imagery was obtained from the Simcoe County online GIS.  
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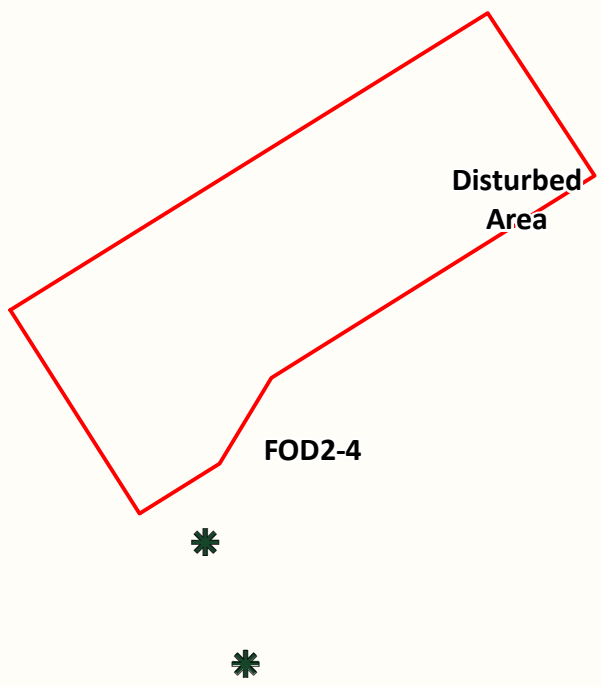
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 Peterborough, Ontario, K9H 1G5  
 Tel: (705) 742.7900 Fax: (705) 742.7907  
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**SITE NATURAL  
HERITAGE FEATURES**

Project No.: 7273-001	Date: August 2018
Scale: 1:2,000	Projection: NAD 1983 UTM Zone 17N
Created by: CPM	Checked by: JP/ES
Figure: <b>3</b>	







C:\Users\jeremy\_jrnh\Desktop\7273-001 Bellisle (Penetang) Developments - EIS - Bellisle Heights Phase 4 - Town of Penetanguishene\2020-01-29 Fig 4 - Environmental Constraints.mxd



**ENVIRONMENTAL  
IMPACT STUDY  
BELLISLE (PENETANG)  
DEVELOPMENTS LTD.**  
Lot 114, Concession 1,  
Penetanguishene, Ontario

**LEGEND**

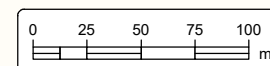
-  Candidate Bat Maternity Roost Tree
  -  Subject Property (approx.)
- Vegetation Communities:**
-  Disturbed Area
  -  FOD2-4

**Notes:**  
 - Subject property is approximate and was obtained from De Fritas Engineering Inc. Draft Plan of Subdivision.  
 - Aerial imagery was obtained from the Simcoe County online GIS.  
 - Base mapping features are © Queen's Printer of Ontario, 2017 (this does not constitute an endorsement by the Ministry of Natural Resources or the Ontario Government).  
 - Distances on this plan are in metres and can be converted to feet by dividing by 0.3048.  
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**ENVIRONMENTAL CONSTRAINTS  
Bellisle Heights Phase 4**

Project No.: 7273-001	Date: January 2020
Scale: 1:3,500	Rev.: NAD 1983 UTM Zone 17N
Projection: NAD 1983 UTM Zone 17N	Created by: CPM
Checked by: JP/ES	Figure: <b>4</b>





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## **Appendix A**

## **Correspondence**

---

## Jade McGann

---

**From:** Andrea Betty <[abetty@penetanguishene.ca](mailto:abetty@penetanguishene.ca)>  
**Sent:** Monday, April 23, 2018 5:04 PM  
**To:** Jeremy Prah  
**Cc:** [mhudolin@midland.ca](mailto:mhudolin@midland.ca); Bryan Murray  
**Subject:** Fwd: EIS for Bellisle Heights Phase 4 - Proposed Terms of Reference  
**Attachments:** image001.jpg; image002.png; image003.png; image004.png

Hi Jeremy,

Please see SSEAs comments I the terms of reference below.

He town has no other comments on the proposed EIS.

Andrea

Sent from my iPhone

Begin forwarded message:

**From:** Michelle Hudolin <[mhudolin@midland.ca](mailto:mhudolin@midland.ca)>  
**Date:** April 23, 2018 at 11:29:56 AM EDT  
**To:** Andrea Betty <[abetty@penetanguishene.ca](mailto:abetty@penetanguishene.ca)>  
**Subject:** RE: EIS for Bellisle Heights Phase 4 - Proposed Terms of Reference

Hi Andrea,

I have reviewed the proposed Terms of Reference (TOR) provided by Jeremy Prah of Cambium for Bellisle Heights Phase 4.

In general, the TOR are satisfactory, and SSEA was pleased to note that the consultant has conferred with MNR as part of the process of drafting the TOR. I offer the following comments/clarification.

The EIS must appropriately address natural heritage features and areas, and any applicable adjacent lands that are subject to policies of the current Provincial Policy Statement, Growth Plan for the Greater Golden Horseshoe, County and/or Town of Penetanguishene Official Plan. This includes documenting the presence and location of any previously unknown natural heritage features [e.g., wetlands, watercourses, Species At Risk (SAR) critical habitat features, Significant Wildlife Habitat (SWH)], taking into consideration provincial policies/legislation and guidance documents.

The EIS and the biophysical surveys undertaken in support of the EIS must be completed by appropriately qualified professional(s) with any applicable training or certification(s) relevant to the required work. Field work will be conducted during appropriate season(s), weather conditions and using suitable protocols to identify and evaluate the natural feature(s) and their ecological functions.

All field work will be described to the following standards:



- a. Date, time, and duration of field work/survey (including start time, end time of site investigations)
- b. Sampling locations and/or area searched (i.e., identified on a map)
- c. Purpose of field work and survey protocol(s) used/ summary of investigation methods
- d. Relevant temperature and weather conditions during site investigations (cloud cover, wind speed [Beaufort scale or km/h], precipitation [type and amount])
- e. Personnel involved (name and qualifications)

The EIS should include copies of correspondence with relevant agencies (e.g. MNR). Note that information on the location of many federal and provincial Species At Risk (SAR) should be treated as sensitive data, and in these cases, information must be disclosed to the municipality and applicable agencies in a manner that does not make it part of public record (e.g., mapping/ information provided separate from the main report, subject to restricted access).

The EIS should map vegetation communities and other natural heritage features or functions on an air photo base at an appropriate scale. The EIS report should be provided in both hard-copy and electronic formats, with all text, figures and tables legible; digital reports should allow text to be copied, to facilitate review/commenting.

With the clarification/additions noted above in this email, the proposed scope of work for the EIS is acceptable to SSEA.

Please contact me with any questions.  
Michelle

**Michelle Hudolin**

Wetlands & Habitat Biologist  
Severn Sound Environmental Association  
67 Fourth Street  
Midland ON L4R 3S9  
Tel: 705-527-5166 ext. 202  
Fax: 705-527-5167  
Email: [mhudolin@midland.ca](mailto:mhudolin@midland.ca)  
Web-site: [www.severnsound.ca](http://www.severnsound.ca)  
Twitter: @SSEA\_SSRAP

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---

**From:** Jeremy Prah [mailto:[Jeremy.Prah@cambium-inc.com](mailto:Jeremy.Prah@cambium-inc.com)]  
**Sent:** April-12-18 10:34 AM  
**To:** [abetty@penetanguishene.ca](mailto:abetty@penetanguishene.ca)

**Cc:** Michelle Hudolin; Cambium File

**Subject:** EIS for Bellisle Heights Phase 4 - Proposed Terms of Reference

Good morning Andrea,

Further to our discussion last week, Cambium has been retained by Bellisle (Penetang) Developments Ltd. to complete an Environmental Impact Study (EIS) for their proposed Phase 4 lands (see attached draft plan). The site is currently occupied by a borrow pit (excavated area) and part of a deciduous woodlot. I have attached a site location figure illustrating the approximate site boundary. The proposed development would require tree removals along the northern edge of the existing woodlot.

It is our understanding that that the Site is partially designated "Environmental Protection One" in the Schedule A1 of the Town OP and zoned "Environmental Protection" in Schedule A to the Town Zoning By-law (2000-02, as amended) due to the presence of Category 1 woodlands. Could you please confirm this designation/zoning and associated planning policy.

We have developed a field program in consultation with MNRF to document existing natural heritage features, including potential SAR and SAR habitat, on the Site (see attached correspondence). Based on our preliminary screening and experience carrying out similar studies, the proposed terms of reference (TOR) for the EIS are as follows:

**Task 1: Background Review & Consultation**

- Consultation with MNRF and SSEA for species and natural area records associated with the Site.
- Review of readily available documents and information from private, municipal, provincial and federal sources. Information obtained will include, but will not be limited to: land use of the subject property; geological and soils records; natural hazards; watercourses, waterbodies and surface drainage, and, the location of any provincially significant features such as wetlands, woodlands, valleylands and Areas of Natural and Scientific Interest.

**Task 2: Field Studies**

- A preliminary site visit will be completed during the "leaf off" period in **April 2018** to determine whether candidate Species at Risk (SAR) bat maternal roost habitat is present in the subject woodlot. The results of the winter bat habitat survey work will be presented to Midhurst District MNRF, to determine whether further field studies are required.
- Breeding bird surveys (2) will be carried out in **May-June 2018**, following Bird Studies Canada protocol. These field studies will also serve to determine whether Bank Swallow (a provincially listed SAR) are nesting in the existing embankments.
- Two (2) surveys for nocturnal SAR avifauna (Whip-poor-will and Common Nighthawk) will be completed during the full moon periods in **May and June 2018**.
- Three (3) daytime and two (2) evening turtle nesting surveys in **May-June 2018**. Surveys will be conducted by visual inspection of suitable nesting areas from a distance and visual search for turtle tracks and depredated nests.
- A final site visit will take place during the "leaf on" period in **June 2018**, to classify the vegetation communities on site and complete a basic inventory of trees to be removed. Vegetation communities occupying the Site will be identified, classified according to the Ecological Land Classification System for Southern Ontario (Lee, 1998), and evaluated for sensitivity, rarity, and botanical quality. Other SAR flora observations will also be documented as part of our field studies during the "leaf-on" period.
- If any Butternut (a provincially listed SAR) are identified/confirmed, Butternut Health Assessments (BHA) will be completed at that time. According to the MNRF Protocol for Butternut, a BHA must be completed by a certified Butternut Health Assessor. Cambium staff hold this designation and we propose to conduct a BHA for all butternut found within

the Site. The locations and health of each tree will be determined and assessed using the *Butternut Assessment Guidelines* established by the MNRF. BHAs must be completed during the “leaf-on” period; therefore, Cambium proposes to complete any necessary assessments in June 2018.

- Incidental wildlife observations will be recorded during all site visits. Any evidence of breeding, forage, shelter or nesting sites, or travel corridors will be noted. Should any endangered or threatened species at risk (SAR) be identified, environmental constraint areas would be developed to protect the habitat of these species, as required under the *Endangered Species Act, 2007*.
- Information gathered through the field studies component will assist in assessing the connectivity of this property with the surrounding landscape to determine the environmental and ecological significance of the area.

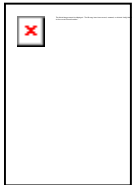
**Task 3: Reporting**

- An EIS report that meets the requirements of the Town, based on information gathered and collected through Tasks 1 and 2. The report will include detailed mapping of the natural heritage features present on the Site. Recommendations included in the report will illustrate how the proposed development and site alteration are likely to affect the natural heritage of the local area and will identify mitigation measures to be implemented during planning and construction, in order to minimize potential impacts to the natural environment.

Could you please review the above and let us know whether the proposed TOR meet the Town’s requirements.

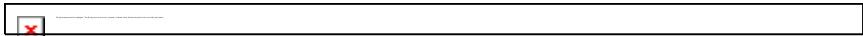
If you have any questions, please don’t hesitate to contact me.

Thanks,  
Jeremy



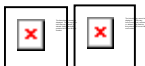
**Jeremy Prah, B.Sc., EP**  
Project Manager / Senior Biologist

**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](http://cambium-inc.com)



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We're Hiring - [Explore](#) the Possibilities.

**From:** Danielle Langlois  
**Sent:** Monday, August 13, 2018 10:10 AM  
**To:** Danielle Langlois  
**Subject:** RE: SAR Work Plan - Bellisle Heights Phase 4 EIS (7273-001)



**Danielle Langlois**  
Junior Biologist / Technician

**Cambium Inc. - Barrie**

**p:** 705.719.0700 | **c:** 249.359.6112 | **toll:** 866.217.7900 | **w:** [cambium-inc.com](http://cambium-inc.com)

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We're Hiring - [Explore](#) the Possibilities

**From:** Jeremy Prah  
**Sent:** April 4, 2018 1:31 PM  
**To:** 'Benvenuti, Jodi (MNRF)' <[jodi.benvenuti@ontario.ca](mailto:jodi.benvenuti@ontario.ca)>  
**Subject:** RE: SAR Work Plan - Bellisle Heights Phase 4 EIS (7273-001)

Hi Jodi,

Thanks very much for your input. I will speak with our client about adding nocturnal surveys for EWPW and CONI to the work plan.

Please confirm that the attached BMPs for herp exclusion fencing (MNR 2013), Blanding's survey protocols (MNRF 2015) and Eastern Whip-poor-will survey protocols (BSC 2014) are the most current/applicable.

The 2015 Blanding's protocol recommends a high level of search effort, with evening nesting surveys throughout the entire nesting season (late May to early July). Given the site conditions, would it be sufficient to combine five (5) turtle nesting surveys with the previously proposed site visits, as follows:

Three (3) daytime and two (2) evening site visits in May & June, by visual inspection of suitable nesting areas from a distance and visual search for turtle tracks and depredated nests.

Efforts would be made to schedule these site visits following periods of rain, while also adhering to weather guidelines in applicable avifauna survey protocols.

Thanks,  
Jeremy



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

**Cambium Inc. - Barrie**

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---

**From:** Benvenuti, Jodi (MNR) [<mailto:jodi.benvenuti@ontario.ca>]  
**Sent:** April 3, 2018 2:58 PM  
**To:** Jeremy Prah <[Jeremy.Prah@cambium-inc.com](mailto:Jeremy.Prah@cambium-inc.com)>  
**Subject:** RE: SAR Work Plan - Bellisle Heights Phase 4 EIS (7273-001)

Hi Jeremy,

Thanks for sending.

I have screened the site using our aerial imagery for potential species at risk habitats and provide a few brief comments on your proposed work plan below:

- Given the open habitats immediately adjacent to forest cover, it is likely there could be strong potential for Whip-poor-will (Threatened). As a result, it's recommended two nocturnal surveys around the full moons in May and June be added to the work plan (which potentially could also pick up Common Nighthawk if present).
- It appears the site contains abundant soft, sandy substrate. Nesting season site visits (nest surveys) for turtles could help inform whether the site provides habitat for these species.
- Above and beyond the proposed work plan, it would be a best management practise to install exclusion fencing around the active construction zone to eliminate any potential access for reptiles that might want to utilize the substrate for nesting.

Feel free to call with any questions. I have some protocols/guidelines for Blandings Turtle surveys and exclusion fencing that I can send along which you might find helpful.

Jodi Benvenuti  
Management Biologist  
Ministry of Natural Resources and Forestry  
Midhurst District  
Phone: (705) 725-7513

---

From: Jeremy Prah [<mailto:Jeremy.Prah@cambium-inc.com>]  
Sent: March-21-18 12:41 PM  
To: Benvenuti, Jodi (MNR)  
Cc: Cambium File  
Subject: SAR Work Plan - Bellisle Heights Phase 4 EIS (7273-001)

Good afternoon Jodi,

Further to our recent discussion, Cambium has been retained by Bellisle (Penetang) Developments Ltd. to complete an EIS for their proposed Phase 4 lands in Penetanguishene (see attached draft plan). Bellisle Heights Phase 4 is located immediately behind École Secondaire Le Caron. The site is currently occupied by a borrow pit (excavated area) and part of a deciduous woodlot, and is adjacent to a Simcoe County Forest tract. I have attached a figure illustrating the approximate site boundary and a photo from a preliminary site visit showing the edge of the woodlot and borrow pit (looking east).

We have developed a draft work plan to document existing natural heritage features, including potential SAR and SAR habitat on the site. Based on our preliminary screening, the following SAR could potentially be found on or adjacent to the site:

- Massasauga (*Sistrurus catenatus*; THR) – NHIC Record; Last Obs. 1969
- Snapping Turtle (*Chelydra serpentina*; SC) – NHIC Record; Last Obs. 2009
- Blanding's Turtle (*Emydoidea blandingii*; THR) – per our discussion related to a nearby historical observation
- Eastern Hog-nosed Snake (*Heterodon platirhinos*; THR) – per our discussion related to a nearby historical observation
- Eastern Wood-Pewee (*Contopus virens*; SC) – suitable habitat in forested areas
- Wood Thrush (*Hylocichla mustelina*; SC) – suitable habitat in forested areas
- Bank swallow (*Riparia riparia*; THR) – potential suitable nesting habitat on steep embankments of borrow pit
- Butternut (*Juglans cinerea*; END) – potentially present in woodlot
- Eastern Small-footed Myotis (*Myotis leibii*; END) – potential maternity roost habitat in woodlot
- Little Brown Myotis (*Myotis lucifugus*; END) – potential maternity roost habitat in woodlot
- Northern Myotis (*Myotis septentrionalis*; END) – potential maternity roost habitat in woodlot
- Tri-colored Bat (*Perimyotis subflavus*; END) – potential maternity roost habitat in woodlot

Our proposed work plan is as follows:

- A preliminary site visit will be completed during the “leaf off” period in March 2018 to determine whether candidate SAR bat maternity roost habitat is present in the subject woodlot.
- Breeding bird surveys (2) for avifauna SAR will be carried out in May-June 2018. These field studies will serve to determine whether Bank Swallow are nesting in the existing embankments. Visual encounter surveys for SAR reptiles will also be completed during these site visits.
- A final site visit will take place during the “leaf on” period in June 2018, to classify the vegetation communities on site and complete a basic inventory of trees to be removed. Other SAR flora observations will also be documented as part of our field studies during the “leaf-on” period.
- Incidental wildlife observations will be recorded during all site visits. Any evidence of breeding, forage, shelter or nesting sites, or travel corridors will be noted.

Your comments on the above potential SAR list and work plan would be greatly appreciated. We will be forwarding the draft Terms of Reference for the EIS to the Town of Penetanguishene for review once we receive your input.

Please don't hesitate to contact me if you have any questions.

Thanks,  
Jeremy



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

**Cambium Inc. - Barrie**

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## Appendix B

### Site Photographs

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**Photo 1 Southwest view showing steep embankments due to historical earthwork, May 2018.**



**Photo 2 View of woodlot on southern limit of property, July 2018.**



**Photo 3** North view of the disturbed area of the property, July 2018.



**Photo 4** Candidate snag/cavity tree in woodlot on southern limit of property, May 2018.



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## Appendix C

# Vegetation Species List

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Appendix C - Vegetation Species List

Family	Common name	Scientific name	S Rank	COSEWIC Status	SARO Status	Vegetation Community Disturbed Area	Vegetation Community Classification FOD2-4
Aceraceae	Manitoba Maple	<i>Acer negundo</i>	S5	-	-	X	
Aceraceae	Sugar Maple	<i>Acer saccharum</i>	S5	-	-	X	X
Anacardiaceae	Eastern Poison Ivy	<i>Toxicodendron radicans var. radicans</i>	S5	-	-		X
Anacardiaceae	Staghorn Sumac	<i>Rhus typhina</i>	S5	-	-	X	
Apiaceae	Wild Carrot	<i>Daucus carota</i>	SNA	-	-	X	
Asclepiadaceae	Common Milkweed	<i>Asclepias syriaca</i>	S5	-	-	X	
Asteraceae	Annual Fleabane	<i>Erigeron annuus</i>	S5	-	-	X	
Asteraceae	Aster Species	<i>Symphotrichum spp.</i>	S5	-	-	X	
Asteraceae	Black-eyed Susan	<i>Rudbeckia hirta var. pulcherrima</i>	S5	-	-	X	
Asteraceae	Goldenrod Species	<i>Solidago spp.</i>	S5	-	-	X	
Asteraceae	Spotted Knapweed	<i>Centaurea stoebe</i>	SNA	-	-	X	
Betulaceae	Eastern Hop-hornbeam	<i>Ostrya virginiana</i>	S5	-	-		X
Betulaceae	Paper Birch	<i>Betula papyrifera</i>	S5	-	-		X
Boraginaceae	Common Viper's Bugloss	<i>Echium vulgare</i>	SNA	-	-	X	
Equisetaceae	Field Horsetail	<i>Equisetum arvense</i>	S5	-	-	X	
Fabaceae	Garden Bird's-foot Trefoil	<i>Lotus corniculatus</i>	SNA	-	-	X	
Fabaceae	Red Clover	<i>Trifolium pratense</i>	SNA	-	-	X	
Fabaceae	Tufted Vetch	<i>Vicia cracca</i>	SNA	-	-	X	
Fabaceae	White Sweet-clover	<i>Melilotus albus</i>	SNA	-	-	X	
Fagaceae	American Beech	<i>Fagus grandifolia</i>	S4	-	-		X
Fagaceae	Northern Red Oak	<i>Quercus rubra</i>	S5	-	-	X	X
Liliaceae	Wild Lily-of-the-valley	<i>Maianthemum canadense ssp. canadense</i>	S5	-	-		X
Onagraceae	Common Evening Primrose	<i>Oenothera biennis</i>	S5	-	-	X	
Phytolaccaceae	Common Pokeweed	<i>Phytolacca americana var. americana</i>	S4	-	-	X	
Pinaceae	Eastern White Pine	<i>Pinus strobus</i>	S5	-	-	X	X
Pinaceae	White Spruce	<i>Picea glauca</i>	S5	-	-	X	
Poaceae	Grass Species	<i>Poa spp.</i>	SNA	-	-	X	X
Polygonaceae	Curly Dock	<i>Rumex crispus</i>	SNA	-	-	X	
Rosaceae	Allegheny Blackberry	<i>Rubus allegheniensis</i>	S5	-	-	X	X
Rosaceae	Black Cherry	<i>Prunus serotina var. serotina</i>	S5	-	-		X
Rosaceae	Common Apple	<i>Malus pumila</i>	SNA	-	-	X	
Rosaceae	Hawthorn Species	<i>Crataegus spp.</i>	SNA	-	-	X	
Salicaceae	Balsam Poplar	<i>Populus balsamifera</i>	S5	-	-	X	
Salicaceae	Large-toothed Aspen	<i>Populus grandidentata</i>	S5	-	-		X
Salicaceae	Trembling Aspen	<i>Populus tremuloides</i>	S5	-	-		X
Salicaceae	Willow Species	<i>Salix spp.</i>	S4	-	-	X	
Scrophulariaceae	Common Mullein	<i>Verbascum thapsus ssp. thapsus</i>	SNA	-	-	X	
Vitaceae	Virginia Creeper	<i>Parthenocissus quinquefolia</i>	S4?	-	-	X	X

Note:  
 COSEWIC = Committee on the Status of Endangered Wildlife in Canada  
 SARO = Species at Risk in Ontario  
 NAR = Not at risk  
 S5 = Secure  
 S4 = Apparently Secure  
 SNA = Not Applicable (typically introduced species)  
 "? = Indicates uncertainty in classification due to lack of information



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## Appendix D

### Bird Species List

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**Table 1. Avifauna List**

Family	Common name	Scientific name	S Rank	COSEWIC	SARO
Laridae	Ring-billed Gull	<i>Larus delawarensis</i>	S5B,S4N	-	-
Laridae	Herring Gull	<i>Larus argentatus</i>	S5B,S5N	-	-
Columbidae	Rock Pigeon	<i>Columba livia</i>	SNA	-	-
Columbidae	Mourning Dove	<i>Zenaida macroura</i>	S5	-	-
Alcedinidae	Belted Kingfisher	<i>Megasceryle alcyon</i>	S4B	-	-
Picidae	Northern Flicker	<i>Colaptes auratus</i>	S4B	-	-
Vireonidae	Red-eyed Vireo	<i>Vireo olivaceus</i>	S5B	-	-
Corvidae	Blue Jay	<i>Cyanocitta cristata</i>	S5	-	-
Corvidae	American Crow	<i>Corvus brachyrhynchos</i>	S5B	-	-
Hirundinidae	Bank Swallow	<i>Riparia riparia</i>	S4B	THR	THR
Turdidae	American Robin	<i>Turdus migratorius</i>	S5B	-	-
Sturnidae	European Starling	<i>Sturnus vulgaris</i>	SNA	-	-
Bombycillidae	Cedar Waxwing	<i>Bombycilla cedrorum</i>	S5B	-	-
Parulidae	Yellow Warbler	<i>Setophaga petechia</i>	S5B	-	-
Parulidae	Chestnut-sided Warbler	<i>Setophaga pensylvanica</i>	S5B	-	-
Parulidae	Pine Warbler	<i>Setophaga pinus</i>	S5B	-	-
Emberizidae	Chipping Sparrow	<i>Spizella passerina</i>	S5B	-	-
Emberizidae	Song Sparrow	<i>Melospiza melodia</i>	S5B	-	-
Cardinalidae	Indigo Bunting	<i>Passerina cyanea</i>	S4B	-	-
Icteridae	Baltimore Oriole	<i>Icterus galbula</i>	S4B	-	-
Icteridae	Red-winged Blackbird	<i>Agelaius phoeniceus</i>	S4B	-	-
Icteridae	Brown-headed Cowbird	<i>Molothrus ater</i>	S4B	-	-
Icteridae	Common Grackle	<i>Quiscalus quiscula</i>	S5B	-	-
Fringillidae	American Goldfinch	<i>Spinus tristis</i>	S5B	-	-

*Note:*SARO = *Species at Risk in Ontario*NAR = *Not at risk*S5 = *Secure*S4 = *Apparently Secure*SNA = *Not Applicable (typically introduced species)*THR = *Threatened*S#B = *Breeding status*S#N = *Non-breeding status*



**Table 2. Avifauna Observations**

Common name	6-Jun-18				28-Jun-18			
	PC 1	PC 2	PC 3	PC 4	PC 1	PC 2	PC 3	PC 4
American Goldfinch	P	H			P			
Song Sparrow	S	P			P	T		
Bank Swallow	H	H						
Cedar Waxwing	H							
American Crow	H							
Chestnut-sided Warbler	S				T			
Brown-headed Cowbird	H							
Rock Pigeon	X							
Common Grackle	H							
Red-eyed Vireo	S	S			T			
Ring-billed Gull	X				X	X		
Herring Gull	X	X						
European Starling	H							
Northern Flicker		H						
Pine Warbler					S			
Mourning Dove					H	P		
Indigo Bunting					T			
Belted Kingfisher					H			
Blue Jay						P		

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