

Environmental Impact Study – 1255 Fuller Avenue, Penetanguishene, Ontario



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Prepared for:
1000239074 Ontario Inc.

Cambium Reference: 16599-002

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1.0 Introduction

Cambium Inc. (Cambium) was retained by 1000239074 Ontario Inc. to conduct an Environmental Impact Assessment (EIS) for the property located at 1255 Fuller Avenue, in the Town of Penetanguishene, County of Simcoe, Ontario (Figure 1). The proposed development includes the construction of a residential subdivision requiring a Draft Plan of Subdivision and Zoning By-law Amendment applications. Based on the geographic extent of proposed development, the entire property will be considered the Site for the purpose of this report.

The following Environmental Impact Study (EIS; the Study) serves to address potential impacts to natural heritage features identified during the preliminary development review process, as required by the Provincial Policy Statement, 2020 (PPS). The Site contains or is adjacent to (within 120 m of) the following mapped natural heritage and/or hydrologic features: woodlands (located on Site and adjacent lands) and unevaluated wetlands (located entirely on adjacent lands). The Site is located within Ecoregion 6E-6 of Ontario (Crins, Gray, Uhlig, & Wester, 2009) and within the Town of Penetanguishene's designated Settlement Area.

The Endangered Species Act, 2007 (ESA) protects endangered and threatened species and their habitats from harm or destruction. Habitat for endangered and threatened species is also afforded protection under provincial natural heritage policy; however, it is ultimately the proponent's responsibility to ensure that no harm to these species or their habitats occurs during their planned activities. This Study includes a habitat-based screening for species of conservation concern to determine if the Site has suitable habitat for any provincially or federally listed species at risk (SAR).

This Study has been prepared to meet application submission standards for the proposed development of the Site, and includes: the results of the background review, a description of methods used to collect site specific natural heritage information, and a summary of field investigations conducted on the Site. Information has been compiled to characterize the existing form and function of natural heritage features on and adjacent to the Site and provide an evaluation of the significance and sensitivity of those features. Furthermore, an assessment of potential for impacts to these features in relation to the proposed development is provided. Data was interpreted in accordance with provincial and municipal policies and regulations to



determine potential constraints to development, to guide the decision-making process and address approval authority requirements.

1.1 Terms of Reference

The proposed Terms of Reference were circulated to the Town of Penetanguishene for review and comment. The Terms of Reference (TOR) were circulated to the Town of Penetanguishene's consultant, and a response was received dated January 27, 2023. Relevant correspondence and documentation are included in Appendix A.

1.2 Summary of Proposed Development

The Site is irregularly shaped, occupying approximately 3.8 ha, and with frontage on both Fuller Avenue and Sandy Bay Road. The Site consists primarily of forested lands with a residential dwelling in the southeast corner.

The proposed development includes the construction of a residential subdivision, consisting of single detached residential lots, townhouses, employment blocks, and associated stormwater management facilities and internal roads. The current Conceptual Draft Plan, prepared by Innovative Planning Solutions (August 1, 2023), is provided in Appendix B.

2.0 Natural Heritage Policy Context

The evaluation of the form and function of natural heritage features present on, and adjacent to, the Site was undertaken to meet the requirements of the following legislation, plans and policies:

- Provincial Policy Statement (PPS), 2020
- Township of Penetanguishene Official Plan, 2020 and Zoning By-law, 2022
- *Endangered Species Act*, 2007 (ESA)
- *Fisheries Act*, 2019
- *Species at Risk Act* (SARA)
- *Migratory Birds Convention Act*, 1994 (MBCA)

This Study includes an assessment of conformity of the proposed development with relevant natural heritage policies. A summary of policy conformity is included in Section 6.0.

2.1 Provincial Policy Statement, 2020

The PPS provides direction on matters of provincial interest related to land use planning and development. Section 2.1 of the PPS (Ministry of Municipal Affairs and Housing, 2020) protects the form and function of eight types of significant natural heritage features, which include:

- significant wetlands
- significant coastal wetlands
- significant woodlands (limited to Ecoregions 6E and 7E)
- significant valleylands
- significant wildlife habitat (SWH)
- significant areas of natural and scientific interest (ANSI)
- fish habitat
- habitat of endangered and threatened species

Given their significance, development and site alteration are prohibited within provincially significant wetlands (PSW) in Ecoregions 5E, 6E, and 7E and within significant coastal wetlands. Development and site alteration in fish habitat and the habitat of endangered and



threatened species shall only be permitted in accordance with provincial and federal requirements. Development and site alteration within other natural heritage features and on lands adjacent to all natural heritage features may be permitted if it is demonstrated that there will be no negative impacts on the feature or its ecological function. The PPS defines “development” as the creation of a new lot, a change in land use, or the construction of buildings and structures requiring approval under the Planning Act. “Site alteration” means activities, such as grading, excavation and the placement of fill that would change the landform and natural vegetative characteristics of a site.

Section 2.2 of the PPS protects the quality and quantity of water, including the form and hydrologic function of sensitive surface water features and sensitive ground water features. Focus is given to maintaining hydrologic linkages and functions at the watershed scale to minimize potential negative impacts, including cross-jurisdictional and cross-watershed impacts of development. Mitigative measures and/or alternative development approaches should be considered for development near water features.

2.2 Official Plan and Zoning By-Law

The land use designations and zoning of the Site are summarized in Table 1:

Table 1 Summary of Municipal Official Plan and Zoning By-law Designations

Source	Designation / Zoning
Official Plan – County of Simcoe	Settlement Area (Town of Penetanguishene)
Official Plan – Township of Penetanguishene	Neighbourhood Area
Zoning By-law – Township of Penetanguishene	Rural

A summary of conformity with the relevant policies is included in Section 6.0.

2.2.1 Municipal Policy Pertaining to Significant Woodlands

Section 3.8.14 of the Simcoe County Official Plan states:

Local municipal official plans may contain policies and mapping that detail the criteria for determining significant woodlands in accordance with the definition of significant woodlands as



defined by this Plan. Significant woodlands can also be determined through an Environmental Impact Statement.

Local municipalities shall determine whether a woodlot is a significant woodland within a settlement area based on criteria established within the local official plan.

Outside of a settlement area where a woodlot is determined not to be ecologically or economically important, its potential importance shall be determined by a minimum patch established in the local municipal official plan. In determining the minimum patch size in local municipal Official Plans, the following size criteria established by the Ontario Ministry of Natural Resources and Forestry will be used unless appropriate justification is provided to use different criteria:

- where woodland cover is less than 5% of the land cover in the local municipality, woodlands 2 ha in size or larger should be considered significant.*
- where woodland cover is 5-15% of the land cover in the local municipality, woodlands 4 ha in size or larger should be considered significant.*
- where woodland cover is 16-30% of the land cover in the local municipality, woodlands 20 ha in size or larger should be considered significant.*
- where woodland cover is 31-60% of the land cover in the local municipality, woodlands 50 ha in size or larger should be considered significant.*

Section 3.10.6 of the Town of Penetanguishene Official Plan (Significant Woodlands) states:

Significant Woodlands are areas which are ecologically important in terms of species composition, age of trees and stand history. Significant Woodlands are functionally important due to their contribution to the broader landscape because of their location, size or extent of forest cover; and/or are economically important due to their site quality, species composition, or management history. Wildlife habitat is one of the primary ecological functions provided by Significant Woodlands. Wildlife habitat is an area where plants, animals and other organisms live, and find adequate amounts of food, shelter, water and space needed to sustain their populations. All plants and animals have individual habitat requirements, which vary for different periods in their life cycles.



- 1. Significant Woodlands are identified as an Environmental Protection Overlay on Schedule B1 of this Plan.*
- 2. Development or site alteration proposed in a Significant Woodland feature shall be subject to the completion of an EIS prior to development or site alteration. Development or site alteration in a Significant Woodland feature shall not be permitted unless it has been demonstrated that there will be no negative impacts on the natural features or on their ecological functions.*
- 3. Development and site alteration shall not be permitted on land adjacent to a Significant Woodland feature unless it has been demonstrated that there will be no negative impacts on the Significant Woodland feature or on their ecological functions that cannot be adequately mitigated. For the purposes of this policy, the extent of adjacent land shall be 120 m from the edge of the Significant Woodland. Subject to the policies of Section 3.10.8, an EIS shall be required for all development proposals on lands adjacent to an identified Significant Woodland.*
- 4. Prior to considering development and/or site alteration on or within adjacent lands of a Significant Woodland, the Town, in consultation with the Province, will be satisfied that the EIS demonstrates that there will be no negative impacts on the habitat values upon which the species depend directly and indirectly, and any related ecological functions.*

Note that the woodland on the subject property is not covered by the Environmental Protection Overlay, per Schedule B1 of the Town's Official Plan; however, the woodland on the opposite side of Sandy Bay Road is covered by this Overlay.

2.3 Endangered Species Act, 2007

Species listed as endangered or threatened on the Species at Risk in Ontario (SARO) list, and their habitats, are protected under the provincial *Endangered Species Act* (ESA) (Government of Ontario, 2007). 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 significant wildlife habitat (SWH), a provincially protected natural heritage feature. Species at risk (SAR) are discussed throughout this report, as applicable.



2.4 Species at Risk Act

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.

2.5 Migratory Birds Convention Act, 1994

The federal *Migratory Birds Convention Act* (MBCA) prohibits killing, capturing, injuring, taking or disturbing of the listed migratory birds. Including damaging, destroying, removing, or disturbing of nests of all migratory bird species that contain a live birds or viable eggs. In 2022, new *Migratory Birds Regulations* (MBR) were adopted that offer year-round protection for the nests of 18 migratory species, until the nest is deemed to be abandoned. Nest abandonment must be reported through the Abandoned Nest Registry, administered by Environment and Climate Change Canada (ECCC), if there is a need to damage, disturb, destroy or remove a nest of a species listed in Schedule 1 of the MBR. The time period to confirm nest abandonment varies by species, and ranges from 12-36 months.

To ensure compliance with the MBCA during development, best management practices should be implemented to detect and avoid disturbances to active nests of listed species. Active nests are protected and should be left undisturbed until all young have fledged, the nest is determined by a professional to be inactive or abandoned.

3.0 Technical Approach and Data Collection Methods

3.1 Background Information Review

Supporting 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. Data was obtained from provincial, municipal, and other online resources to provide context to the development proposal, and to guide development of the site-specific work program. Field studies were subsequently conducted to verify and/or add detail to the high-level contextual information derived from these publicly available resources.

The comprehensive desktop review for this Site included the following resources:

- Land Information Ontario (LIO) database via the online Natural Heritage Areas: Make-a-Map tool (Ministry of Natural Resources and Forestry, 2022)
- Natural Heritage Information Center (NHIC) database: species at risk (SAR) occurrence records
- Online Atlas Data:
 - Ontario Reptile and Amphibian Atlas (ORAA) (Ontario Nature, 2018)
 - Ontario Breeding Birds Atlas (OBBA) (2001-2005) (Bird Studies Canada, 2005)
- Simcoe County Official Plan (Simcoe County, 2016)
- Town of Penetanguishene Official Plan (Town of Penetanguishene, 2020)
- Town of Penetanguishene Zoning By-law, No. 2000-02
- Penetanguishene Urban Woodland Assessment (Severn Sound Environmental Association, 2008)
- Penetanguishene Natural Heritage Study Update (Severn Sound Environmental Association, 2017)
- Existing Conditions Report – 1255 Fuller Avenue, Penetanguishene, Ontario (Cambium Inc., 2022)

Mapped natural heritage features present in the general area of the Site are shown on Figure 1. A summary of background review results is provided in Table 2.

Table 2 Background Review Summary

Source	Location Reference	Relevant Records
LIO Geographic Database	Site and 120 m adjacent lands	Woodlands Unevaluated wetlands
NHIC Database	17NK8560	Bobolink - THR Eastern Meadowlark – THR Massasauga (Great Lakes/St. Lawrence pop.) – THR Snapping Turtle - SC
Ontario Breeding Bird Atlas (OBBA)	17TNK86	Incorporated into list of species within Appendix C and Appendix E
Ontario Reptile and Amphibian Atlas (ORAA)	17NK86	Incorporated into list of species within Appendix C

Note: THR = Threatened species on SARO list; END = Endangered species on SARO list; SC = Special concern species on SARO list. The species of conservation concern screening provided in Appendix C includes a list of all species within the overlapping OBBA and ORAA squares with potential policy implications.

3.2 Consultation and Agency Correspondence

Regulatory agency consultation may involve input from Fisheries and Oceans Canada (DFO), the Ministry of Natural Resources and Forestry (MNR), the Ministry of Environment, Conservation, and Parks (MECP), and/or the local Conservation Authority, as applicable. The MECP is responsible for administering the ESA and providing direction on potential compliance issues. MECP has prepared a guidance document titled *Client’s Guide to Preliminary Screening for Species at Risk* (Ministry of the Environment, Conservation and Parks, 2019). This document aims to “help clients better understand their obligation to gather information and complete a preliminary screening for SAR before contacting the Ministry”. This document was used to guide the SAR habitat-based screening for the Study.

No direct consultation with regulatory authorities was undertaken for this project due to the availability of site-specific data via publicly accessible resources.



Cambium does not typically consult with MECP/MNRF for information gathering purposes unless restricted records are identified on the Site through the NHIC database query. This approach is consistent with the MECP's Guide to Preliminary Screening for Species at Risk (dated May 2019) and, in our experience, SAR Branch staff expectations. No restricted records were listed for the UTM grid square encompassing the subject property.

3.3 Field Investigations

Ecological investigations were completed on the Site by a team of qualified ecologists to understand potential ecological constraints to development and opportunities for restoration/enhancement. Information gathered through the background review was used to guide the development of the fieldwork program and was supplemented with additional site specific information gathered through various standard methodologies. Survey methodologies for each of the field investigations completed on the Site are described in the following sections.

All surveys were conducted by appropriately trained Cambium staff. Survey stations were GPS marked in the field. Data were documented manually, reviewed upon return to the office, and transposed to digital format for secure data management.

3.3.1 Ecological Land Classification and Vegetation Inventory

The Ecological Land Classification (ELC) System for Southern Ontario (Lee, et al., 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, et al., 1998) and the revised 2008 tables. ELC units were initially delineated and classified by orthoimagery interpretation. Field investigations served to confirm the type and extent of ELC communities on the Site through vegetation inventory, and soil assessment with a hand auger where vegetation types could not be classified based on vegetation alone. Where vegetation communities extended off the Site, classification was done through observation from property boundaries and publicly accessible lands.

Data includes the provincial status of plant species and vegetation communities, where such information exists. Sensitivity of individual vegetation species was evaluated based on the

coefficient of conservatism (CC) which is a measure of the tolerance of a species to disturbance and fidelity to a specific habitat type; species with CC of 9-10 exhibit a high degree of fidelity to a narrow range of habitat parameters. The sensitivity of vegetation communities was evaluated through an assessment of various community attributes including age, habitat quality, degree of disturbance, presence of non-native/invasive species, and presence of sensitive plant species (plants with CC of > 9). A description of CC values is provided in Table 3.

Table 3 Coefficient of Conservatism (Adapted from Oldham et al. 1995)

Coefficient of Conservatism	Rank	Description
0 to 3	Tolerant	Found in a wide variety of plant communities, including disturbed sites.
4 to 6	Moderately Conservative	Typically associated with a specific plant community but tolerate moderate disturbance.
7 to 8	Conservative	Typically associated with a plant community in an advanced successional stage that has undergone minor disturbance.
9 to 10	Highly Conservative	Typically displaying a high degree of fidelity to a specific plant community or a narrow range of synecological parameters.

3.3.2 Breeding Bird Surveys

Two breeding bird surveys were carried out during the peak breeding season between May 24 and July 10, a minimum of seven days apart. Point counts were completed using the Ontario Breeding Bird Atlas (OBBA) Guide for Participants (Ontario Breeding Bird Atlas, 2001). Point count stations were established in various habitat types and were combined with incidental observations to determine the presence, variety, abundance, and breeding evidence of species. As outlined in the OBBA protocol, point counts are to be done between dawn and five hours after dawn, when wind speed is low (<19 km/h) and in the absence of rain or thick fog. Surveys conducted outside of this five-hour window remain valid, provided that the protocol adjustment is documented and justifiable. All species observations (visual and auditory) were recorded at predetermined point count stations during a five-minute period. Observations were also documented between point count stations and were tabulated with the nearest station.



Each species observed was classified and assigned a code based on the highest level of breeding evidence, as defined by the protocol: Confirmed, Probable, Possible or Observed. A description of breeding evidence classes is included in Table 4.

Table 4 OBBA Breeding Evidence Codes and Classes

Code	Description
CONFIRMED	
NB	Nest-building or excavation of nest hole by a species other than a wren or a woodpecker
DD	Distraction display or injury feigning
NU	Used nest or egg shells found (occupied or laid within the period of the survey)
FY	Recently fledged young (nidicolous species) or downy young (nidifugous species) incapable of sustained flight
AE	Adult leaving or entering nest site in circumstances indicating occupied nest
FS	Adult carrying fecal sac
CF	Adult carrying food for young
NE	Nest containing eggs
NY	Nest with young seen or heard
PROBABLE	
M	At least 7 individuals singing or producing other sounds associated with breeding (e.g., calls or drumming), heard during the same visit to a single square and in suitable nesting habitat during the species' breeding season.
P	Pair observed in suitable nesting habitat in nesting season
T	Permanent territory presumed through registration of territorial song, or the occurrence of an adult bird, at the same place, in breeding habitat, on at least two days a week or more apart, during its breeding season. Use discretion when using this code. "T" is not to be used for colonial birds, or species that might forage or loaf a long distance from their nesting site e.g., Kingfisher, Turkey Vulture, and male waterfowl
D	Courtship or display, including interaction between a male and a female or two 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, by a wren or a woodpecker
POSSIBLE	
H	Species observed in its breeding season in suitable nesting habitat



Code	Description
S	Singing male(s) present, or breeding calls heard, in suitable nesting habitat in breeding season
OBSERVED	
X	Species observed in its breeding season (no breeding evidence)

Source: Ontario Breeding Bird Atlas: Instructions for General Atlassing (Birds Canada, April 2021)

The Natural Heritage Information Center (NHIC) database and Species at Risk in Ontario (SARO) list were reviewed to determine the current provincial status for each bird species.

3.3.3 Eastern Whip-poor-will Surveys

The Eastern Whip-poor-will (*Caprimulgus vociferus*) is a SAR listed as threatened on the SARO list. It 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. In order to determine if the Site is being used as nesting habitat by Eastern Whip-poor-will, avian surveys were conducted following the approved MNDMRF protocol (Ministry of Natural Resources and Forestry, 2013). Surveys are to be conducted three times between May 18 and June 30, with two surveys being conducted during the first full moon cycle and one survey conducted in the next full moon cycle. Since moon phase is known to affect calling rates, the moon should be greater than 50% illuminated above the horizon (generally one week prior to and following the full moon). Conditions should include nights with temperatures above 10°C, no precipitation, low noise levels, wind <19 km/h (Beaufort Wind Scale of 3 or lower), and clear skies. Points should be established 500 m apart and all species observations (visual and auditory) recorded during a five-minute period. Observations should be recorded with the direction and approximate distance from the survey station.

3.3.4 Wildlife Tree Surveys

Sites that contain treed habitat require snag or cavity tree surveys. A snag or cavity tree is defined as a standing live or dead tree ≥10 cm diameter at breast height (DBH), with cracks, crevices, hollows, cavities and/or loose or naturally exfoliating bark appropriate for bat roosting. According to MNR guidance, high quality or Maternity Roost Colony SWH is defined



as woodlands with greater than 10 roost trees per hectare. Cavities may provide habitat for birds and other wildlife as well.

Given the size and composition of the forested communities on the Site, transects were walked in each forested ELC Community to document snags. Individual trees that met the criteria were documented in terms of their habitat features, and georeferenced with a hand-held GPS unit.

3.3.5 Habitat-Based Wildlife Surveys

Given the scale of the proposed development, a habitat-based approach was used to assess potential impacts to wildlife, consistent with standard practice. General habitat information gathered through the field investigations was used to assess the connectivity of the Site with the surrounding landscape and evaluate the ecological significance of the local area. Cambium staff actively searched for features that may provide specialized habitat for wildlife. These searches included inspecting tree cavities, overturning logs, rocks and debris, and scanning for scat, browse, sheds, fur, etc. Any evidence of breeding, forage, shelter, or nesting was noted. Species habitat and nesting observations were documented and photographed.



4.0 Characterization of Natural Features and Functions

Data acquired through the background information review and field investigations is summarized in the following sections. Based on the information gathered, an assessment of significance has been completed to identify protected natural heritage and hydrologic features on and/or adjacent to the Site.

A summary of the field investigations completed on the Site is presented in Table 5. Survey stations/areas are shown on Figure 2.

Table 5 Summary of Field Investigations

Date	Time On Site	Weather	Observer	Activities
2021-09-09	13:00 – 14:00	16°C Scattered Cloud; Wind = 2	J. Prah	Initial Site Reconnaissance
2021-09-23	9:00 – 11:00	15°C; Overcast, Light Rain; Wind =1; Noise = 0	K. McKitterick D. Langlois	Ecological Land Classification and Vegetation Inventory
2023-03-29	9:30 - 13:00	0-2°C; Clear; Wind = 1	B. Hnatiw	Bat Maternity Roost Habitat Survey
2023-06-02	07:00 – 07:30	17°C; Partly Cloudy; Wind = 0; Noise= 1	M. Soden	Breeding Bird Survey #1
2023-06-09	22:30 – 23:00	15.0°C; Fog/Overcast; Wind = 1; Noise = 1	M. Soden	Eastern Whip-poor-will Survey #1
2023-06-15	12:45 – 15:00	19°C; Scattered Cloud/Overcast; Wind = 1; Noise = 1	B. Hnatiw	Ecological Land Classification and Vegetation Inventory
2023-06-16	06:45 - 07:15	10°C; Overcast; Wind = 2; Noise= 2	M. Soden	Breeding Bird Survey #2
2023-07-03	21:55 - 22:25	21 - 23°C; Clear; Wind = 0; Noise= 0	M. Horn	Eastern Whip-poor-will Survey #2



Date	Time On Site	Weather	Observer	Activities
2023-07-04	22:00-22:30	24 - 26°C; Scattered Clouds; Wind = 0; Noise = 0	M. Horn	Eastern Whip-poor-will Survey #3

Notes: Wind = 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.

4.1 Landscape Position and Topography

The Site is located within the Mixedwood Plains Ecozone: Lake Simcoe Rideau Ecoregion 6E, which extends southward from a line connecting Lake Huron in the west to the Ottawa River in the east, including Ottawa, Kingston, Peterborough, Barrie, Tobermory, Kitchener, and Toronto. This Ecoregion is characterized by a mixed geology that includes both shallow soil areas such as alvar and bedrock plains, as well as deep soil areas such as the Oak Ridges Moraine. It falls within the Great-Lakes St. Lawrence Forest Region, including deciduous and mixed forests; however, over 50% of the landscape in this Ecoregion is currently in use as agricultural land (Lee, et al., 1998).

The front and rear portions of the Site (based on frontage on Fuller Avenue) are relatively flat. A gradual, west-facing slope extends north-south through the centre of the Site (i.e., the eastern portion of the Site is on higher elevation than the road frontage). No areas of erosion or instability were noted.

4.2 Surface Water and Drainage Features

No watercourses are provincially mapped on the Site or adjacent lands. No watercourses or drainage features were observed on-Site during the field investigations. Based on the topography of the Site (see Section 4.1) and recent catchment mapping (Severn Sound Environmental Association, 2017), surface drainage from the frontage of the Site along Fuller Avenue flows west towards Penetanguishene Harbour, while the portion of the Site located east of the central north-south slope Site drains southeast towards Sucker Creek.

4.3 Wetland Delineation

Provincial mapping shows unevaluated wetlands on adjacent lands approximately 25 m northeast of the Site, across Sandy Bay Road. Based on roadside observations, this feature is assumed to be present as mapped. Based on the location across an existing road, the proposed development is not anticipated to impact this feature; as such, it is not addressed further in this Study.

Provincial mapping shows a second unevaluated wetland on private property approximately 31 m southeast of the Site (see Figure 1). The presence of this feature could not be confirmed due to private property access limitations. Based on roadside observations from Pine Grove Road, it was not possible to confirm the presence or absence of this feature. Given its distance from the Site and lack of overland drainage connectivity, the proposed development is not anticipated to have adverse impacts on this feature; as such, it is not addressed further in this Study.

4.4 Vegetation Communities and Species

The vegetation communities on the Site are summarized in Table 6 and are mapped on Figure 2. A list of identified species and representative photos for each community are provided in Appendix D.

Table 6 Vegetation Communities

No.	ELC Code	Community Description	Community Type	S -Rank
1	FOD5-3	Dry-Fresh Sugar Maple - Oak Deciduous Forest	Terrestrial	S5
2	CUP3	Coniferous Plantation – Scots Pine and Red Pine	Cultural	SNA
3	CUP3	Coniferous Plantation – Balsam Fir and White Spruce	Cultural	SNA
4	FOM2	Dry – Fresh White Pine – Maple – Oak Forest	Terrestrial	S5
5	CVR	Constructed Residential	Constructed	SNA

No provincially rare vegetation communities were observed on the Site or adjacent lands. The Site is occupied by a mix of forested communities and an open residential area. The majority



of the central forested lands are cultural in nature, comprised of planted rows of Red Pine, White Pine, and White Spruce, and Balsam Fir (Communities 2 and 3). Due to the dense coniferous canopy, groundcover vegetation is extremely limited in the plantation communities. The mixed forest north of the residence is characterized primarily by young White Pine, mixed maple species, and Northern Red Oak (Community 4). This regenerating forest area contains canopy gaps and generally lacks native groundcover; several invasive species are present, including Garlic Mustard and Lesser Periwinkle. The north and east boundaries of the Site were historically occupied by a hedgerow (based on historical aerial imagery) that has since spread into a deciduous forest dominated by Sugar Maple, with occasional Red Oak, and Norway Maple (Community 1). The deciduous forest contains several common native groundcover species, such as Long-stalked Sedge, Spinulose Wood Fern, and Wild Lily-of the Valley.

Overall, the floristic quality of vegetation identified on the Site was low to moderate. No SAR were observed. In particular, a search for Butternut (*Juglans cinerea*; provincially endangered) was completed as part of the vegetation survey; no Butternut trees were identified. As such, Butternut is not discussed further in this Study.

4.5 Significant Woodlands

In the past 200 years, over 70 percent of woodland cover has been lost in Ecoregions 6E and 7E (Ministry of Natural Resources, 2010). The protection of woodland cover in southern Ontario is an important concern (Ministry of Natural Resources, 2010). Planning authorities are responsible for protecting significant woodlands within Ecoregions 6E and 7E in accordance with policies 2.1.4(b) and 2.1.6 of the PPS.

The Simcoe County Official Plan (2013) defines a significant woodland as: an area which is ecologically important in terms of features such as species composition, age of trees and stand history; functionally important due to its contribution to the broader landscape because of its location, size or due to the amount of forest cover in the planning area; or economically important due to site quality, species composition, or past management history.

However, the Simcoe County Official Plan also states that local municipalities shall determine whether a woodlot is a significant woodland within a Settlement Area based on criteria established within the local Official Plan.

The Town of Penetanguishene Official Plan (2018) defines significant woodlands in Section 3.10.6 as:

“an area which is ecologically important in terms of features such as species composition, age of trees and stand history; functionally important due to its contribution to the broader landscape because of its location, size or due to the amount of forest cover in the planning area; or economically important due to site quality, species composition, or past management history. These are to be identified using criteria established by the Ontario Ministry of Natural Resources and Forestry.”

The Town of Penetanguishene has identified significant woodlands on Schedule B1 of the Official Plan (OP) as an Environmental Protection Overlay. Based on a review of Schedule B1 of the OP, no significant woodlands or environmental protection areas have been identified on the Site by the Town; adjacent lands to the north (opposite Sandy Bay Rd.) have been mapped as ‘Environmental Protection Area’ on Schedule B1. No significant features were identified in the woodland through this Study. This is supported by Maps 2A and 2B of the local Natural Heritage Study, which do not identify interior habitat or any other significant criteria on the woodlands that overlap the Site (Severn Sound Environmental Association, 2017). As such, significant woodlands are not discussed further in this Study.

4.6 Wildlife Survey Results

Habitat on the Site is primarily comprised of disturbed forest and plantation communities, as detailed in Section 4.4. Forest and treed swamp habitats are also present on adjacent lands north, east, and south of the Site. Open areas on the Site are limited to the maintained/manicured area immediately around the existing residence. Several cavity trees were observed, as detailed in Section 4.6.2. No vernal pools, signs of seepage, bedrock outcrops, or other specialized wildlife habitat features were observed. Due to the setting of the Site within the Town of Penetanguishene and the existing surrounding developments, the Site

is expected to support a limited range of wildlife species that are somewhat tolerant of urban developments.

Incidental wildlife observations were recorded during all site visits. These included: American Crow, American Robin, Black-capped Chickadee, Blue Jay, Downy Woodpecker, Mourning Dove, Northern Cardinal, Pileated Woodpecker, Wild Turkey, Eastern Grey Squirrel, Red Squirrel, and White-tailed Deer.

4.6.1 Birds

OBBA breeding bird surveys were completed as a part of the current study, as detailed in Appendix E. Bird species observed on or adjacent to the Site, breeding evidence, federal and provincial status and s-ranks are provided in Appendix E. No species had confirmed breeding evidence. A total of four species had probable breeding evidence, and five species had possible breeding evidence. Species with breeding evidence on the Site included:

- One SAR: Eastern Wood-pewee (possible evidence; heard from Station 2)
- One area-sensitive forest bird: Ovenbird (possible evidence; heard from Station 2)

Eastern Wood-pewee and Ovenbird were each heard from Station 2, on a single date. Suitable habitat for both species is associated primarily with the deciduous forest that occurs along the east and south property boundaries and adjacent lands (Community 1). Note that while Ovenbird is considered to be ‘area-sensitive’, the woodland that overlaps the Site does not meet the criteria for Woodland Area-sensitive Bird Breeding SWH (<30 ha in size, <60 years old, excluding the historic hedgerows, minimum presence of three indicator species not met).

Wildlife tree surveys were completed as a part of the Study to determine whether nest protections outlined in the MBR apply to the Site. No cavities suitable for nesting by Pileated Woodpecker or other protected species were found on the Site during targeted surveys.

Targeted surveys for Eastern Whip-poor-will (a provincially listed bird) were completed as a part of the Study. Three survey points were established along the edge of the treed area on the Site (i.e., along the edges of Communities 1 and 2). No Eastern Whip-poor-wills were observed during the targeted surveys or incidentally during the field investigations.

Details on species of conservation concern and their protected habitats are provided in Section 4.8.

4.6.2 Mammals

A total of six trees were marked as providing potential for bat maternity roosting, all of which are located along the northern Site boundary, along the south side of Sandy Bay Road:

- Tree 1 (Sugar Maple): Partially dead branch with a large cavity, 4-6 inches in diameter. DBH = 82.8 cm, tree height approximately 20 m, feature height approximately 8-12 m and a decay code of 1. ,
- Tree 2 (White Pine): Included a leaf cluster and a grey squirrel nest. DBH = 19.1 cm, tree height approximately 20 m, feature height approximately 20 m and a decay code of 3.
- Tree 3 (Sugar Maple): Approximately (10) small woodpecker cavities. DBH = 71.0 cm, tree height approximately 20 m, feature height approximately 10-18 m, Decay code of 3.
- Tree 4 (White Birch): 3/3-inch woodpecker foraging cavities. DBH = 50.3 cm, tree height approximately 15 m, feature height approximately 8-10 m, and a decay code of 4.
- Tree 5 (Sugar Maple): Small woodpecker foraging cavities of approximately 3/3 inch in size. DBH = 82.3 cm, tree height approximately 20 m, feature height approximately 8-15 m and a decay code of 4.
- Tree 6 (White Ash): Multiple stem tree cavities on one branch. DBH = 30.8 cm, tree height approximately 20 m, feature height approximately 8-10 m, and a decay code of 4.

The number of potential bat maternity roost trees observed at the Site (6) was divided by the total area of the Site (3.8 ha) to provide a conservative density estimate. The density of candidate bat maternity roost trees was determined to be 1.60/ha. Based on these results, the Site does not provide high quality maternity roosting habitat for bat species and does not qualify as SWH on this basis. Furthermore, no features that could be used as hibernacula were observed on the Site. Overall, given the dominance of cultural plantation communities on the Site, its potential as general roosting habitat for SAR bats was determined to be low.

No other mammals of conservation concern or their habitat were observed on the Site.



4.7 Significant Wildlife Habitat

Guidance documents produced by the MNRF for the identification and evaluation of SWH were used to identify and confirm occurrences of SWH on the Site (MNR, 2000). The Significant Wildlife Habitat Criteria Schedules for Ecoregion 6E (Ministry of Natural Resources and Forestry, 2015) apply to the subject property. Information gathered during the background review and field investigations were compared to SWH criteria to evaluate the property for SWH. Based on our observations during field investigations and the ELC classifications described in Section 4.2, the Site does not meet the criteria for designation as SWH. Details on species of conservation concern and their protected habitats are provided in Section 4.8.

4.8 Species of Conservation Concern

According to the Significant Wildlife Habitat Technical Guide (Ministry of Natural Resources, 2000), Species of Conservation Concern (SCC) include species that are identified as at risk by COSEWIC or on the SARO list, known rare species (provincially, regionally, locally), and species with populations in known decline. A list of SCC, including SAR, with potential to occur in the general vicinity of the Site has been compiled based on known species' ranges, habitat requirements, and review of background information sources (as listed in Section 3.1). In addition, the list has been augmented with direct field observations from the Study, as detailed in the previous sections. Cambium has employed a habitat-based screening, supplemented with targeted field surveys when necessary, in order to identify suitable habitat for species located on or adjacent to the Site. A detailed habitat suitability analysis is provided in Appendix C and a discussion of the results is provided below.

4.8.1 Endangered and Threatened Species

The habitat of endangered and threatened species is regulated under the ESA, 2007, and associated regulations. The following (endangered/threatened) species are known to occur in the regional area of the Site, and the habitat types occurring on the Site may support these species.

The Site may provide habitat for the following bat species: Eastern Small-footed Myotis, Little Brown Myotis, Northern Myotis, and Tri-coloured Bat. Bat Maternity Roost surveys determined



that while there are suitable cavity trees for bats to roost, these trees do not occur at a density that meets the threshold for habitat protection (SWH). Open areas of the Site may be used as foraging habitat for these species; however, foraging habitat is not protected under the ESA. As such, there is no protected habitat for SAR bats on the Site. No SAR bats or evidence of bats was observed on the Site. Avoidance and mitigation measures relating to the general protection of bats are provided in Section 5.3.

The background review identified records for the following additional species within 1 km of the Site: Bobolink (threatened), Eastern Meadowlark (threatened), Massasauga (Great Lakes/St. Lawrence pop.; threatened). No suitable habitat for these species was documented on the Site. Habitat requirements for each species are presented in Appendix C.

4.8.2 Special Concern Species

Eastern wood pewee is a species of flycatcher, which is a bird that specifically eats flying insects. This species lives in the mid-canopy layer of forest clearings and edges of mixed and deciduous forests. It also prefers intermediate aged forest stands. As such, Community 1 therefore offer suitable breeding habitat for this species on the Site and adjacent lands. Eastern wood-pewee was observed during the second breeding bird survey, exhibiting 'possible' breeding evidence in Community 1.

The Yellow-banded Bumble Bee is a habitat generalist that can make use of a wide range of flowering plants. Due to limited native ground cover throughout much of the Site (see Section 4.4), native bee habitat on the Site is considered to be marginal and limited to Community 1. Similar habitat exists on adjacent lands. The Yellow-banded Bumble Bee was not observed during field visits.

The background review identified records for the following additional species within 1 km of the Site: Snapping Turtle. No suitable habitat for these species was documented on the Site. Habitat requirements for each species are presented in Appendix C.

4.8.3 Locally Important Species

The Piliated Woodpecker typically nests in mature forest but may also be found in younger forests with remnant mature trees. As a keystone species, the nesting cavities of Piliated



Woodpeckers are of importance for other migratory birds that reuse Piliated Woodpecker nest cavities in subsequent years. As a migratory bird, Piliated Woodpecker nesting cavities are protected under the MBCA, unless they have been proven to be abandoned in accordance with the MBR. To verify that a Piliated Woodpecker nesting cavity has been abandoned, the nest must be reported to the Abandoned Nest Registry, and appropriate surveys must occur to confirm nest use. The nest must remain inactive for 36 months after registration before the nest will be deemed abandoned by the ECCC. No potential pileated woodpecker nesting cavities were identified on the Site. As such, this species is not discussed further in this Study.



5.0 Impact Assessment and Mitigation Measures

The proposed development includes the construction of a residential subdivision requiring Draft Plan of Subdivision and Zoning By-law Amendment applications. A conceptual development plan is shown in Figure 3.

In summary, the following protected features were identified on and adjacent to the Site:

- Significant Wildlife Habitat for Special Concern and Rare Wildlife Species
- Potential Habitat of Endangered and Threatened Species

No other natural heritage features protected by provincial policy were confirmed on or adjacent to 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 Site alteration. Mitigation measures and best management practices have been recommended to ensure that the integrity of the existing natural features is protected and/or enhanced and that the associated functions are not negatively impacted during or following construction.

5.1 Significant Wildlife Habitat for Special Concern and Rare Wildlife Species

As detailed in Section 4.7, no SWH is present on the Site, excluding the potential to support SCC: Eastern Wood-pewee and Yellow-banded Bumble Bee. Habitats for these species extend onto adjacent lands. No direct impacts (harm) to the species are anticipated, provided that vegetation is cleared during appropriate the timing windows for wildlife (see Section 5.3: Birds, and Bats).

As suitable habitat for both species is limited to the eastern and southern edges of the Site (Community 1), and extends onto adjacent lands, habitat impacts associated with the proposed development will be limited to minor edge removals; no impact to the form or function of the overall habitat feature is anticipated in relation to the proposed development.



5.2 Habitat of Endangered and Threatened Species

As detailed in Section 4.8.1, the Site provides potential habitat for four endangered bat species: Eastern Small-footed Myotis, Little Brown Myotis, Northern Myotis, and Tri-coloured Bat.

Direct impacts to endangered bats are not anticipated in relation to the proposed development, provided that vegetation removals occur outside of the active bat roosting season of April 1 to September 30 (see Section 5.3, Wildlife: Bats).

Impacts to the potential habitat of endangered bats is anticipated to be minor in nature, limited to the removal of roadside cavity trees, located along the south side of Sandy Bay Road. In order to mitigate the potential impact of these tree removals, it is recommended that six bat boxes be installed along the new forest edge.

5.3 Mitigation Measures and Best Management Practices

To minimize potential impact to the natural environment on and surrounding the Site, Cambium recommends that the mitigation measures and best management practices outlined in Table 7 be implemented at the Site.

Table 7 Mitigation Measures and Best Management Practice Recommendations

Potential Impact	Recommended Best Practice
Erosion and Sedimentation	Prior to any construction activities taking place, it is essential that perimeter sediment fencing be installed around construction areas. Fencing should be properly keyed into the ground and securely fastened to vertical supports spaced ≤ 2 m apart. All sediment fencing should be regularly maintained and kept in good working condition, until the area has been stabilized and/or successfully revegetated. Any observed overland drainage channels originating from Site, that may or may not have arisen as a result of erosion, should be directed to a check dam structure, prior to discharging to off-site areas. Construction activities that require earthworks (e.g., grading, excavation, etc.) should be scheduled to avoid dates of heavy rainfall events and times of high runoff volumes.
Increase in Runoff - Impervious Surfaces	Runoff from the Site is expected to increase with the introduction of impermeable surfaces (i.e., building roofs, roadways, and walkways) and compacted surfaces with reduced infiltration capacity. Measures to increase infiltration of run-off from these surfaces should be encouraged and, where possible, included in the Site Plan for the



Potential Impact	Recommended Best Practice
	development. Eavestrough downspouts should be directed to vegetated areas (such as lawn, or gardens) and not onto hardened surfaces, to encourage infiltration.
Woodland Edge Impacts	<p>Edge impacts can occur to newly exposed interior trees, following tree removals. The proposed development will require the removal of most trees within the woodland on the Site. The mature stand in the woodland is limited to the subject property; trees on adjacent lands to the northeast and southeast are generally in early to mid-succession or within lawn/amenity areas of yards. As such, off-site trees will be relatively resilient to potential edge impacts associated with the proposed removals.</p> <p>Protection of boundary trees and trees on adjacent lands is addressed in the Tree Inventory and Preservation Plan, prepared by JDB Associates (submitted under separate cover). No additional mitigation specific to edge impacts is recommended.</p>
Wildlife: Birds (Disturbance and Harm)	<p>Nesting birds and their nests, eggs, and young are protected under the <i>Migratory Birds Convention Act, 1994</i>. Vegetation clearing on the Site should occur outside the breeding bird season, which extends from April 15 to August 15 in the local area (as per Environment and Climate Change Canada Guidelines).</p> <p>If vegetation clearing or construction is to occur between April 15 and August 15, the vegetation should be investigated by a qualified biologist to confirm if any active nests are present, prior to site alteration. Vegetation clearing can proceed provided there are no active nests. If active nests are confirmed, the nests should be left undisturbed until young have fledged or the nest is determined to be inactive. Note that some birds nest on the ground and in low-lying vegetation and shrubs; therefore, all habitat types should be inspected prior to ground disturbance if removals are to occur during the breeding season.</p>
Wildlife: Bats (Disturbance and Harm)	<p>Tree removal should be limited to the building envelope to the extent possible. Small scale tree removal will not result in impairing or eliminating the function of habitat to support bat life processes provided the tree removal avoids the active bat season (April 1 – September 30).</p> <p>If vegetation clearing or construction is to occur between April 1 and September 30, the vegetation should be investigated by a qualified biologist to confirm whether SAR bat habitat may be present. Presence or absence of habitat should be confirmed through acoustic monitoring following industry standard protocols prior to any tree removal during the active season for bats. Vegetation clearing can proceed provided absence is confirmed.</p>



Potential Impact	Recommended Best Practice
Species at Risk (SAR; Threatened and Endangered)	SAR observations, including most species of snakes and turtles, should be reported to the Natural Heritage Information Centre (NHIC). If any individuals are encountered, they should be photographed and allowed time to move out of harm's way. SAR should not be handled by unauthorized individuals.
Spread of Invasive Species	<p>Invasive species are becoming problematic throughout Ontario and can adversely impact our natural landscapes, including wetlands, woodlands, and watercourses. Best management practices to reduce the spread of invasive species include:</p> <ol style="list-style-type: none"> 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. 4. Brush off or clean any shoes, boots and equipment that have encountered invasive species before returning to the property. Equipment and vehicles coming into the work area should be free of soil and seeds that could introduce non-native and invasive species following the Clean Equipment Protocol for Industry: Inspecting and Cleaning Equipment for the Purposes of Invasive Species Prevention (Halloran, 2013) 5. Immediately eradicate invasive species if they are observed on the property. 6. Do not compost invasive species; put them in plastic bags and dispose of them in the garbage. 7. Do not dispose of lawn or garden clippings in the forest or wetlands to avoid species introductions. <p>An excellent resource for identifying and controlling invasive species can be found through the Ontario Invasive Plant Council: Home - Ontario Invasive Plant Council (ontarioinvasiveplants.ca) (OIPC, 2022)</p>
Anthropogenic Impacts – Noise	<p>Noise is not expected to increase significantly because of the proposed development as it is consistent with the land use on the surrounding properties.</p> <p>Temporary acute noise may occur during construction activities and should follow appropriate local noise by-laws. All equipment should be equipped with appropriate mufflers to mitigate noise levels during construction.</p>
Anthropogenic Impacts – Lighting	Artificial lighting can have an impact on nocturnal movement of wildlife within natural areas. To minimize impacts to wildlife, it is recommended that outdoor lights be operated on timers, rather than by motion detection. Outdoor lighting associated with the



Potential Impact	Recommended Best Practice
	development should be directed at the ground, rather than into the adjacent natural areas. Bulb wattage should be as low as practical while meeting the safety intent of the lighting. Lighting in common areas should be capped to direct light to the intended area of the ground to limit light pollution.
Anthropogenic Impacts – Domestic Animals	Access of domestic animals to natural areas can have a negative impact on local wildlife due to predation, harassment, and spread of illness and disease. Signage should be posted at trailheads and park areas to keep pets on a leash at all times, and to appropriately dispose of pet waste.



6.0 Policy Conformity

6.1 Provincial Policies

Based on the key natural heritage and/or hydrologic features identified on or adjacent to the Site and the findings of the field investigations detailed herein, the proposed development of the Site is in conformity with the PPS. Conformity with applicable natural heritage policy is summarized in Table 8. Note that natural heritage and hydrologic feature types not relevant to the development application have been intentionally omitted from the tables below.

Table 8 PPS Policy Conformity Summary

Natural Heritage / Hydrologic Feature	On Site	On Adjacent Lands	Meets Associated Policy
Significant Wildlife Habitat (including habitat of special concern species)	Potential	Potential	2.1.5 d); 2.1.8
	Explanation: Potential habitat for Eastern Wood-pewee and Yellow-banded Bumble Bee exists in Community 1 on and adjacent to the Site. Minimal incremental edge habitat removals associated with the proposed development are not anticipated to impact the form or function of the potential SWH.		
Habitat of Threatened and Endangered Species	Potential	N/A	2.1.7
	Explanation: Cavity trees along the north edge of the Site have potential to support four endangered bat species during the roosting season. Provided the vegetation removal timing window is adhered to and replacement habitat is created (bat boxes), no impacts to the species or their habitat is anticipated.		

7.0 Summary of Recommendations

The following recommendations are provided for the proposed development:

1. All required approvals and permits should be obtained prior to the commencement of any Site alteration / construction activities.
2. Six bat boxes be installed along the new forest edge, in order to mitigate the removal of six cavity trees (i.e., 1:1 replacement).
3. Prior to any construction activities taking place, it is essential that perimeter sediment fencing be installed around construction areas. Fencing should be properly keyed into the ground and securely fastened to vertical supports spaced ≤ 2 m apart. All sediment fencing should be regularly maintained and kept in good working condition, until the area has been stabilized and/or successfully revegetated. Any observed overland drainage channels originating from Site, that may or may not have arisen as a result of erosion, should be directed to a check dam structure, prior to discharging to off-site areas.
4. Construction activities that require earthworks (e.g., grading, excavation, etc.) should be scheduled to avoid dates of heavy rainfall events and times of high runoff volumes.
5. Measures to increase infiltration of run-off from compacted surfaces should be encouraged and included in the Site plan where possible as described in Table 7.
6. Vegetation clearing on the Site should occur outside the combined season for breeding birds and roosting bats, which extends from April 1 to September 30 in the local area.
7. If vegetation clearing or construction is to occur between April 15 and August 15 (i.e., during the bird breeding season), the vegetation should be investigated by a qualified biologist to confirm if any active nests are present, prior to site alteration. Vegetation clearing can proceed provided there are no active nests. If active nests are confirmed, the nests should be left undisturbed until young have fledged or the nest is determined to be inactive. Note that some birds nest on the ground and in low-lying vegetation and shrubs; therefore, all habitat types should be inspected prior to ground disturbance if removals are to occur during the bird breeding season.



8. If vegetation clearing or construction is to occur between April 1 and September 30 (i.e., during the bat roosting season), the vegetation should be investigated by a qualified biologist to confirm whether SAR bat habitat may be present. Presence or absence of habitat should be confirmed through acoustic monitoring following industry standard protocols prior to any tree removal during the active season for bats. Vegetation clearing can proceed provided absence is confirmed.
9. SAR observations, including most species of snakes and turtles, should be reported to the Natural Heritage Information Centre (NHIC). If any individuals are encountered, they should be photographed and allowed time to move out of harm's way. SAR should not be handled by unauthorized individuals.
10. Invasive species are becoming problematic throughout Ontario and can adversely impact our natural landscapes, including wetlands, woodlands, and watercourses. Best management practices to reduce the spread of invasive species include:
 - a) Revegetate with species native to the local area.
 - b) Request fill and compost from reputable sources that are conscious of the potential for the spread of invasive species via these media.
 - c) Get to know the most common invasive species in the area.
 - d) Brush off or clean any shoes, boots and equipment that have encountered invasive species before returning to the property. Equipment and vehicles coming into the work area should be free of soil and seeds that could introduce non-native and invasive species following the Clean Equipment Protocol for Industry: Inspecting and Cleaning Equipment for the Purposes of Invasive Species Prevention (Halloran, 2013)
 - e) Immediately eradicate invasive species if they are observed on the property.
 - f) Do not compost invasive species; put them in plastic bags and dispose of them in the garbage.
 - g) Do not dispose of lawn or garden clippings in the forest or wetlands to avoid species introductions.



11. All equipment should be equipped with appropriate mufflers to mitigate noise levels during construction.
12. Outdoor lights be operated on timers, rather than by motion detection. Outdoor lighting associated with the development should be directed at the ground, rather than into the adjacent natural areas. Bulb wattage should be as low as practical while meeting the safety intent of the lighting. Lighting in common areas should be capped to direct light to the intended area of the ground to limit light pollution.
13. Signage should be posted at trailheads and park areas to keep pets on a leash at all times, and to appropriately dispose of pet waste.



8.0 Closing

In closing, potential negative impacts associated with the proposed development and site alteration can be appropriately minimized, provided that the recommendations outlined in Section 7.0 are followed. The information presented herein demonstrates that the proposed development can be carried out in a way that will not adversely impact natural heritage and hydrologic features and function identified on or adjacent to the subject Site. Furthermore, the proposed development complies with applicable provincial policy.

Respectfully submitted,

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10.0 Glossary of Terms

ANSI: Area of Natural and Scientific Interest	GIS: Geographic Information System
ARA: Aquatic Resources Area	GLSL: Great Lakes – St. Lawrence
ARA: Aggregate Resources Act	GPGGH: Growth Plan for the Greater Golden Horseshoe
AS: Agricultural System	GPS: Global Positioning System
ATK: Aboriginal Traditional Knowledge	HSA: Habitat Suitability Analysis
BMA: Bear Management Area	HIS: Habitat Suitability Index
BMP: Best Management Practice	KHA: Key Hydrologic Areas
CA: Conservation Authority	KHF: Key Hydrologic Features
CEAA: Canadian Environmental Assessment Act/Agency	KNHF: Key Natural Heritage Features
CFA: Canadian Forestry Association	LCFSP: Licence to Collect Fish for Scientific Purposes
CFIP: Community Fisheries Involvement Program	LIO: Land Information Ontario
CFS: Canadian Forestry Service	LRIA: Lake and Rivers Improvement Act
CHU: Critical Habitat Unit	LUP: Land Use Permit or Plan
CH: Cultural Heritage	MA: Management Area
CLI: Canada Land Inventory	MAFA: Moose Aquatic Feeding Area
CLU: Crown Land Use	MCEA: Municipal Class Environmental Assessment
COSSARO: Committee on the Status of Species at Risk in Ontario	MECP: Ontario Ministry of Environment, Conservation and Parks
CR: Conservation Reserve	MNDMRF: Ontario Ministry of Natural Resources and Forestry
CWIP: Community Wildlife Involvement Program	NER: Natural Environment Report
CWS: Canadian Wildlife Service	NHIC: Natural Heritage Information Centre
DFO: Fisheries and Oceans Canada	NHIS: Natural Heritage Information System
EA: Environmental Assessment	NHS: Natural Heritage System
EAA: Environmental Assessment Act	OBM: Ontario Base Map
EAB: Emerald Ash Borer	OFIS: Ontario Fisheries Information System
EBR: Environmental Bill of Rights	OLI: Ontario Land Inventory
EIA: Environmental Impact Assessment	OMAFRA: Ontario Ministry of Agriculture, Food and Rural Affairs
EIS: Environmental Impact Study/Statement	OWES: Ontario Wetland Evaluation System
ELC: Ecological Land Classification System	PPS: Provincial Policy Statement (2014)
ELUP: Ecological Land Use Plan	PSW: Provincially Significant Wetland
END: Endangered species	RLUP: Regional Land Use Plan
EPA: Environmental Protection Act	RMP: Regional Management Plan
ER: Environmental Registry	R.P.F.: Registered Professional Forester
ESA: Endangered Species Act (2007)	SAR: Species at Risk
ESA: Environmentally Sensitive Area	SARO: Species at Risk in Ontario
ESC: Erosion and Sediment Control	SC: Special Concern species
F&W: Fish and Wildlife	SWH: Significant Wildlife Habitat
FA: Fisheries Act (Federal)	SWM: Stormwater Management



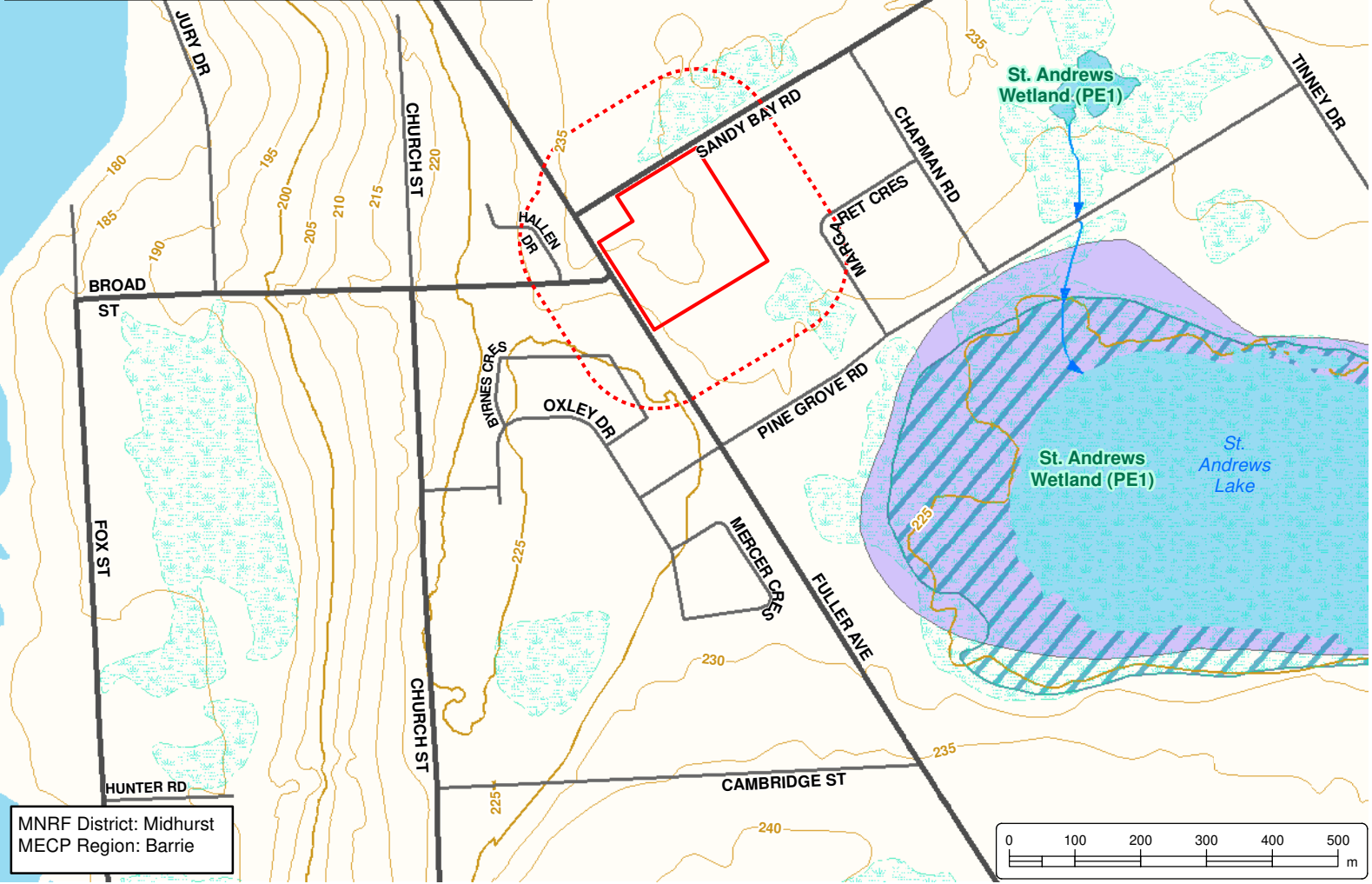
FEC: Forest Ecosystem Classification
FMP: Forest Management Plan
FRI: Forest Resources Inventory
FWCA: Fish and Wildlife Conservation Act
GGH: Greater Golden Horseshoe
GHP: General Habitat Protection

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**
ANGELO LAVINIO
1255 Fuller Avenue
Penetanguishene, Ontario

LEGEND

- Major Road
- Minor Road
- Watercourse, Permanent
- Contour 5m Interval (Major)
- Contour 5m Interval (Minor)
- Unevaluated Wetlands
- Provincially Significant Wetlands
- Water Area
- ANSI, Life Science
- Site (3.8 ha)
- 120 m Adjacent Lands

Notes:
 - Base mapping features are © Queen's Printer of Ontario, 2019 (this does not constitute an endorsement by the Ministry of Natural Resources and Forestry 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.

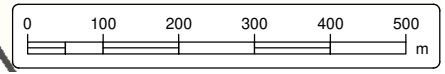


194 Sophia Street
 Peterborough, Ontario, K9H 1E5
 Tel: (705) 742.7900 Fax: (705) 742.7907
 www.cambium-inc.com

**LANDSCAPE SETTING
AND POLICY AREAS**

Project No.: 16599-002	Date: May 2023
Scale: 1:10,000	Projection: NAD 1983 UTM Zone 17N
Created by: DJL	Checked by: JPP
Figure: 1	

MNRF District: Midhurst
 MECP Region: Barrie













O:\GIS\MXD\16500-16599\16599-002_1000239074_Orl Inc - Angelo Lavinio - Scoped EIS - 1255 Fuller Ave, Penetanguishene\2023-05-30 FIG 1 - Landscape Setting and Policy Areas.mxd

O:\GIS\MXD\16500-16599\16599-002_1000239074_Ont Inc - Angelo Lavino - Scoped EIS - 1255 Fuller Ave, Penatanguishene\2023-05-30 FIG 2 - Natural Heritage Features and Ecological Survey Stations.mxd



**ENVIRONMENTAL
IMPACT STUDY**
ANGELO LAVINIO
1255 Fuller Avenue
Penatanguishene, Ontario

LEGEND

-  Potential Cavity Trees
-  Breeding Bird Survey Station (BBS)
-  Eastern Whip-poor-will Survey Station (WPW)
-  Major Road
-  Minor Road
-  Contour 5m Interval (Major)
-  Contour 5m Interval (Minor)
-  Vegetation Communities
-  Site (3.8 ha)
-  120 m Adjacent Lands

VEGETATION COMMUNITIES

- 1: FOD5-3; Dry - Fresh Sugar Maple Deciduous Forest**
- 2: CUP3; Coniferous Plantation**
- 3: CUP3-3; Scotch Pine Coniferous Plantation**
- 4: FOM2; Dry - Fresh White Pine - Maple - Oak Mixed Forest**
- 5: CVR; Constructed Residential**

Notes:
 - Base mapping features are © Queen's Printer of Ontario, 2019 (this does not constitute an endorsement by the Ministry of Natural Resources and Forestry 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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Tel: (705) 742.7900 Fax: (705) 742.7907
www.cambium-inc.com

**NATURAL HERITAGE
FEATRES AND
ECOLOGICAL SURVEY STATIONS**

Project No.:	16599-002	Date:	June 2023
Scale:	1:3,000	Rev.:	
Created by:	DJL	Checked by:	JPP
Figure:	2		

entral North Correctional Centre



**ENVIRONMENTAL
IMPACT STUDY**
ANGELO LAVINIO
1255 Fuller Avenue
Penatanguishene, Ontario

LEGEND

- Contour 5m Interval (Minor)
- Vegetation Communities
- Site (3.8 ha)
- 120 m Adjacent Lands

VEGETATION COMMUNITIES

- 1: FOD5-3; Dry - Fresh Sugar Maple Deciduous Forest**
- 2: CUP3; Coniferous Plantation**
- 3: CUP3-3; Scotch Pine Coniferous Plantation**
- 4: FOM2; Dry - Fresh White Pine - Maple - Oak Mixed Forest**
- 5: CVR; Constructed Residential**

Notes:
 - Base mapping features are © Queen's Printer of Ontario, 2019 (this does not constitute an endorsement by the Ministry of Natural Resources and Forestry 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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Peterborough, Ontario, K9H 1E5
Tel: (705) 742.7900 Fax: (705) 742.7907
www.cambium-inc.com

**NATURAL HERITAGE
CONSTRAINTS**

Project No.: 16599-002	Date: July 2023
Scale: 1:1,500	Projection: NAD 1983 UTM Zone 17N
Created by: DBB	Checked by: JPP
Figure: 3	



Appendix A

Correspondence



January 27, 2023

Andrea Betty
Director of Planning and Community Development
Town of Penetanguishene
10 Robert Street West
P.O. Box 5009
Penetanguishene, ON
L9M 2G2

**Subject: Peer Review of the Terms of Reference for a Scoped Environmental Impact Study for
1255 Fuller Avenue, Town of Penetanguishene, Ontario**

WSP Canada Inc. (WSP) was retained by the Town of Penetanguishene to complete a peer review of a Terms of Reference (TOR) for a Scoped Environmental Impact Study (EIS). The Scoped EIS would be completed in support of a plan of subdivision and zoning by-law amendment for the property located at 1255 Fuller Ave, Penetanguishene. This peer review was completed through a desktop review of the provided TOR, publicly available resources, and aerial photography (Google Earth).

The documents reviewed as part of this peer review included the following:

- Email titled "1255 Fuller Avenue Penetanguishene" outlining proposed TOR – dated January 20, 2023 – from Owen Taylor (Town of Penetanguishene) to Nathan DeCarlo (WSP).
- 1255 Fuller Ave Site Concept Plan – Morgan Planning and Development (2022) – File Name: "1187 – Concept Plan – Nov 30 22".

The following outlines the proposed TOR provided to WSP by the Town of Penetanguishene and comments or additions identified as part of the peer review are provided below in red:

- *Consult with the Town of Penetanguishene and/or their peer review consultant, to determine their interests/concerns regarding the proposed works and study requirements.*
- *Consult with the MECP and MNRF (i.e., through a request for information) for pertinent background information such as species at risk (SAR) occurrence records or other natural heritage information that may not be readily available through public sources.*
- *Compile and review applicable background information and environmental mapping pertaining to the Site. The background review should at minimum include a review of Natural Heritage Information Centre (NHIC) database (NHIC, 2022), wildlife atlases, citizen science databases, and information available through the agency requests (as outlined above).*

582 Lancaster Street West
Kitchener, ON
Canada N2K 1M3

T: +1 519 743-8778
wsp.com

- Conduct a survey for SAR bat maternity roost trees, according to the current MECP guidance, to assess the Site for SAR bat habitat in treed areas. - **Completed December 2021**
- Conduct two (2) 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.
- Conduct three (3) evening Whip-poor-will surveys, following the Survey Protocol for Eastern Whip-poor-will in Ontario.
- Conduct two vascular plant survey on the Site, under late summer and spring conditions. – **1 of 2 Completed September 2021**
- 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. *A combination of desktop and site boundary observations should be used to map vegetation communities off-site, but within 120 m, to inform existing conditions and impact assessment.*
- Undertake a Species at Risk (SAR) screening to assess for potential SAR habitat and evaluate compliance with the provincial Endangered Species Act, 2007. This includes reviewing species occurrence records and range maps, and assessing potential occupancy based on the habitat present on and adjacent to the subject property. This preliminary screening will be carried out according to MECP Guide to Preliminary Screening for Species at Risk (May 2019). We acknowledge that additional surveys may be required if habitat to support certain endangered or threatened species is identified. MECP will be contacted directly if potential compliance or permitting issues under the Endangered Species Act, 2007 arise.
- Record observations of wildlife occurrences and assess wildlife habitat function, including significant wildlife habitat on the Site. Any evidence of wildlife 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. Any environmental feature/area mapping generated through the EIS work will be made available in GIS shapefile format.
- Provide a map of potential and confirmed Significant Wildlife Habitat (SWH) - including any applicable radius/adjacent area that is included as SWH per the Provincial Ecoregion schedules for SWH. *In addition to SWH, potential and confirmed SAR habitat will also be mapped, with consideration for general habitat description for any potential SAR, where applicable.*
- Provide an assessment of the potential impacts of the proposed development on natural features and their related ecological and hydrologic functions *within the site and adjacent lands (i.e., 120 m surrounding the site).*
- *If any features are proposed for protection (e.g., wetlands, SWH), the limits of these features will be staked in the field and total station surveyed (TSS) to accurately locate them on the landscape and apply appropriate setbacks, where applicable.*
- Demonstrate compliance/conformity with the applicable regulation, policies, and plans, including: Provincial Policy Statement, 2020, County of Simcoe Official Plan, and Town of Penetanguishene Official Plan. *In addition, compliance/conformity will be demonstrated for the Endangered Species Act, Species at Risk Act, Migratory Birds Convention Act, Fisheries Act), including any potential permits or authorizations that may be required for future development plans.*

- *Develop an appropriate avoidance, mitigation, and/or restoration strategy, to address the potential impacts and opportunities identified.*
- *Complete one (1) final report with supporting figures for circulation to the Town.*

Sincerely,

WSP Canada Inc.

A handwritten signature in blue ink, appearing to read 'Nathan DeCarlo', is written over a thin horizontal line.

Nathan DeCarlo, M.E.S.

Nathan.DeCarlo@wsp.com

Ecologist, Ontario Earth and Environment

Danielle Leal

From: Owen Taylor <otaylor@penetanguishene.ca>
Sent: February 23, 2023 4:28 PM
To: Danielle Leal; V Lemieux
Cc: Michelle Cooper; ycproperties@protonmail.com; Andrea Betty; Cambium Admin
Subject: RE: FW: Proposed Terms of Reference - 1255 Fuller Avenue, Penetanguishene (16599-002)

Hi Danielle,

Thanks for letting us know. I reviewed with WSP and we are good with your approach outlined below.

Regards,
Owen

From: Danielle Leal <Danielle.Leal@cambium-inc.com>
Sent: Thursday, February 23, 2023 2:26 PM
To: Owen Taylor <otaylor@penetanguishene.ca>; V Lemieux <vlemieux@morganplanning.ca>
Cc: Michelle Cooper <mcooper@morganplanning.ca>; ycproperties@protonmail.com; Andrea Betty <abetty@penetanguishene.ca>; Cambium Admin <file@cambium-inc.com>
Subject: RE: FW: Proposed Terms of Reference - 1255 Fuller Avenue, Penetanguishene (16599-002)

Hi Owen,

Thank you for circulating the revised terms of reference for the subject EIS. We are in agreeance with the majority of the revisions.

One item we would like to highlight is the direction to consult with MECP/MNRF to gather SAR occurrence records that are not publicly available. Cambium does not consult with MECP/MNRF for information gathering purposes unless restricted records are identified on the Site through the NHIC database query. This is consistent with the MECP's Guide to Preliminary Screening for Species at Risk (dated May 2019) and, in our experience, SAR Branch staff expectations. No restricted records were listed for the UTM grid square encompassing the subject property. MECP will be contacted directly if potential compliance or permitting issues under the Endangered Species Act, 2007 arise.

Thank you,
Danielle



Danielle Leal, B.Sc., EPT
Project Coordinator/Ecologist

Cambium - Barrie

📞 249.359.6112

☎ 866.217.7900

🌐 cambium-inc.com



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From: Owen Taylor <otaylor@penetanguishene.ca>
Sent: Friday, January 27, 2023 10:15 AM
To: Danielle Leal <Danielle.Leal@cambium-inc.com>; V Lemieux <vlemieux@morganplanning.ca>
Cc: Michelle Cooper <mcooper@morganplanning.ca>; ycproperties@protonmail.com; Andrea Betty <abetty@penetanguishene.ca>
Subject: RE: FW: Proposed Terms of Reference - 1255 Fuller Avenue, Penetanguishene (16599-002)

Hi Danielle,

Please find attached the approved terms of reference for the EIS.

Regards,
Owen

From: Danielle Leal <Danielle.Leal@cambium-inc.com>
Sent: Friday, January 20, 2023 2:31 PM
To: Owen Taylor <otaylor@penetanguishene.ca>; V Lemieux <vlemieux@morganplanning.ca>
Cc: Michelle Cooper <mcooper@morganplanning.ca>; ycproperties@protonmail.com
Subject: RE: FW: Proposed Terms of Reference - 1255 Fuller Avenue, Penetanguishene (16599-002)

Thanks for this update, Owen. It is appreciated.

Have a great weekend.
Danielle



Danielle Leal, B.Sc., EPT
Project Coordinator/Ecologist

Cambium - Barrie

📞 249.359.6112

📠 866.217.7900

🌐 cambium-inc.com



Environmental | Building Sciences | Geotechnical | Construction Quality Verification

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From: Owen Taylor <otaylor@penetanguishene.ca>
Sent: Friday, January 20, 2023 2:29 PM
To: V Lemieux <vlemieux@morganplanning.ca>
Cc: Danielle Leal <Danielle.Leal@cambium-inc.com>; Michelle Cooper <mcooper@morganplanning.ca>; ycproperties@protonmail.com
Subject: RE: FW: Proposed Terms of Reference - 1255 Fuller Avenue, Penetanguishene (16599-002)

Hi Victoria,

Our office processed the deposit today. I forwarded the TOR to our consultant for comment.

Have a great weekend.

Owen

From: V Lemieux <vlemieux@morganplanning.ca>
Sent: Tuesday, January 17, 2023 4:15 PM
To: Owen Taylor <otaylor@penetanguishene.ca>
Cc: Danielle Leal <Danielle.Leal@cambium-inc.com>; Michelle Cooper <mcooper@morganplanning.ca>; ycproperties@protonmail.com
Subject: FW: FW: Proposed Terms of Reference - 1255 Fuller Avenue, Penetanguishene (16599-002)

Good afternoon Owen,

Please find attached the signed policy document, and the deposit will be dropped off by Angelo in the next day or two to your attention at the Town office.

Thanks very much,

Victoria Lemieux, MCIP RPP
Senior Planner
MORGAN Planning & Development Inc.

vlemieux@morganplanning.ca
(705) 329-8916

From: Owen Taylor <otaylor@penetanguishene.ca>
Sent: January 16, 2023 3:16 PM
To: Danielle Leal <Danielle.Leal@cambium-inc.com>; Andrea Betty <abetty@penetanguishene.ca>
Cc: Cambium Admin <file@cambium-inc.com>; V Lemieux <vlemieux@morganplanning.ca>
Subject: RE: Proposed Terms of Reference - 1255 Fuller Avenue, Penetanguishene (16599-002)

Hi Danielle,

The Town uses a peer review consultant to review terms of reference for environmental impact studies. The review is at the cost of the applicant in accordance with the Town's Municipal Costs Policy.

Can you please have your client sign the attached policy and provide a deposit of \$500 to cover the costs. Upon receipt of the deposit, I will provide the terms of reference to the Town's consultant for review.

Thank you,

Owen

From: Danielle Leal <Danielle.Leal@cambium-inc.com>
Sent: Monday, January 16, 2023 1:03 PM
To: Andrea Betty <abetty@penetanguishene.ca>; Owen Taylor <otaylor@penetanguishene.ca>
Cc: Cambium Admin <file@cambium-inc.com>; V Lemieux <vlemieux@morganplanning.ca>
Subject: Proposed Terms of Reference - 1255 Fuller Avenue, Penetanguishene (16599-002)

Good afternoon,

Cambium has been retained to complete a Scoped Environmental Impact Study (EIS; the Study) for the property located at 1255 Fuller Avenue, in the Town of Penetanguishene, County of Simcoe, Ontario (the Site), in support of a draft plan of subdivision application.

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 the Town of Penetanguishene and/or their peer review consultant, to determine their interests/concerns regarding the proposed works and study 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 MECP guidance, to assess the Site for SAR bat habitat in treed areas. - **Completed December 2021**
- Conduct two (2) 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.
- Conduct three (3) evening Whip-poor-will surveys, following the Survey Protocol for Eastern Whip-poor-will in Ontario.
- Conduct two vascular plant survey on the Site, under late summer and spring conditions. – **1 of 2 Completed September 2021**
- 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.

- Undertake a Species at Risk (SAR) screening to assess for potential SAR habitat and evaluate compliance with the provincial Endangered Species Act, 2007. This includes reviewing species occurrence records and range maps, and assessing potential occupancy based on the habitat present on and adjacent to the subject property. This preliminary screening will be carried out according to MECP Guide to Preliminary Screening for Species at Risk (May 2019). We acknowledge that additional surveys may be required if habitat to support certain endangered or threatened species is identified. MECP will be contacted directly if potential compliance or permitting issues under the Endangered Species Act, 2007 arise.
- Record observations of wildlife occurrences and assess wildlife habitat function, including significant wildlife habitat on the Site. Any evidence of wildlife 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. Any environmental feature/area mapping generated through the EIS work will be made available in GIS shapefile format.
- Provide a map of potential and confirmed Significant Wildlife Habitat (SWH) - including any applicable radius/adjacent area that is included as SWH per the Provincial Ecoregion schedules for SWH.
- Provide an assessment of the potential impacts of the proposed development on natural features and their related ecological and hydrologic functions.
- Demonstrate compliance/conformity with the applicable regulation, policies, and plans, including: Provincial Policy Statement, 2020, County of Simcoe Official Plan, and Town of Penetanguishene Official Plan.
- Develop an appropriate avoidance, mitigation, and/or restoration strategy, to address the potential impacts and opportunities identified.
- Complete one (1) final report with supporting figures for circulation to the Town.

Thank you,
Danielle



Danielle Leal, B.Sc., EPT
Project Coordinator/Ecologist

Cambium - Barrie

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📠 866.217.7900

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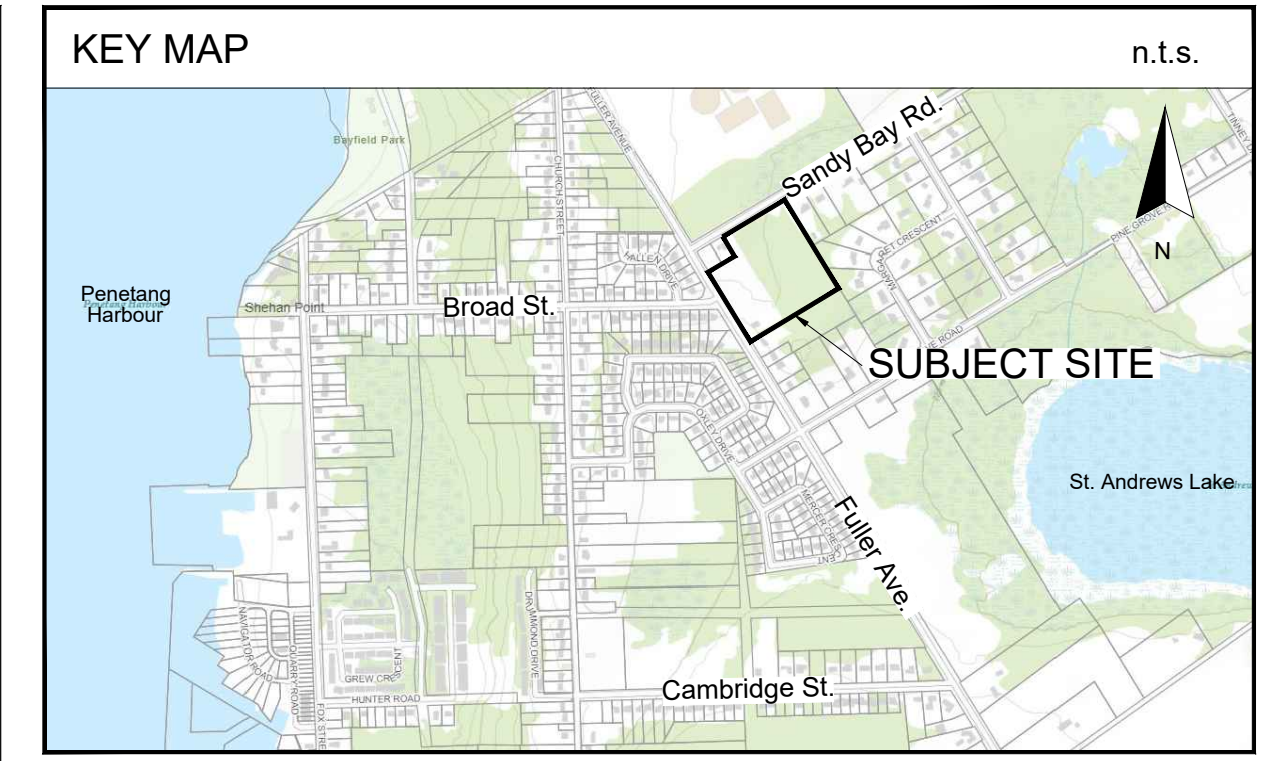
Appendix B
Conceptual Site Plans



RESIDENTIAL TWO (R2) ZONE: SINGLE DETACHED		
Provisions	Required	Provided
Additional Dwelling Units (table 6.2.1)	Permitted	Permitted
Min. Lot Frontage	15.00m	12.02m
Min Lot Area	460.00m ²	351.59m ²
Min. Front Yard	6.00m	> = 6.00m
Min. Interior Side Yard	1.20m	> = 1.20m
Min. Exterior Side Yard	4.50m	> = 4.50m
Min. Rear Yard	7.50m	> = 7.50m
Min. Setback to Garage	6.00m	> = 6.00m
Max. Height	11.00m	< = 11.00m
Max. Lot Coverage	35%	> = 35%
Required Parking (table 5.3.1.1)	2 parking spaces / dwelling unit	2 parking spaces / dwelling unit

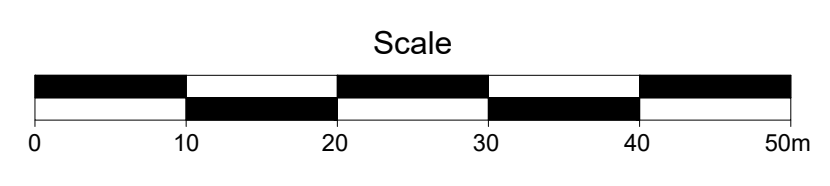
RESIDENTIAL TWO (R2) ZONE: SEMI - DETACHED		
Provisions	Required	Provided
Additional Dwelling Units (table 6.2.1)	Permitted	Permitted
Min. Lot Frontage	11.00m / unit	11.00m
Min Lot Area	330.00m ² / unit	378.80m ²
Min. Front Yard	6.00m	> = 6.00m
Min. Interior Side Yard	1.20m	> = 1.20m
Min. Exterior Side Yard	4.50m	> = 4.50m
Min. Rear Yard	7.50m	> = 7.50m
Min. Setback to Garage	6.00m	> = 6.00m
Max. Height	11.00m	< = 11.00m
Max. Lot Coverage	35%	> = 35%
Required Parking (table 5.3.1.1)	2 parking spaces / dwelling unit	2 parking spaces / dwelling unit

RESIDENTIAL THREE (R3) ZONE: TOWNHOSUE		
Provisions	Required	Provided
Additional Dwelling Units (table 6.2.1)	Not Permitted	Permitted
Min. Lot Frontage	7.50m	7.50m
Min Lot Area	220.00m ²	213.97m ²
Min. Front Yard	6.00m / unit	> = 6.00m
Min. Interior Side Yard	0.00m	0.00m
Min. Exterior Side Yard	4.50m	> = 4.50m
Min. Rear Yard	7.50m	> = 7.50m
Min. Setback to Garage	6.00m	> = 6.00m
Max. Height	11.00m	< = 11.00m
Max. Lot Coverage	35%	> = 35%
Required Parking (table 5.3.1.1)	2 parking spaces / dwelling unit	2 parking spaces / dwelling unit



DRAFT PLAN OF SUBDIVISION

Topographic Plan of Survey
 of Part of Lot B1, Registered Plan No. 69
 (Geographic Township of Tay)
 Town of Penetanguishene,
 County of Simcoe



LEGEND
 SUBJECT LANDS (38,555.09m² / 3.855ha)

OWNER'S CERTIFICATE
 I HEREBY AUTHORIZE INNOVATIVE PLANNING SOLUTIONS TO PREPARE THIS DRAFT PLAN OF SUBDIVISION AND SUBMIT THIS DRAFT PLAN OF SUBDIVISION FOR APPROVAL.

DATE: YORK CAPITAL PROPERTIES INC.

SURVEYOR'S CERTIFICATE
 I CERTIFY THAT THE BOUNDARIES OF THE LAND TO BE SUBDIVIDED AND THEIR RELATIONSHIP TO ADJACENT LANDS ARE ACCURATELY AND CORRECTLY SHOWN.

DATE: J. EVEN, O.L.S.

ADDITIONAL INFORMATION REQUIRED UNDER SECTION 51(17) OF THE PLANNING ACT

- a) SHOWN ON PLAN
- b) SHOWN ON PLAN
- c) SEE KEY PLAN
- d) RESIDENTIAL
- e) SHOWN ON PLAN
- f) SHOWN ON PLAN
- g) SHOWN ON PLAN
- h) MUNICIPAL WATER
- i) SAND, SILT GLACIAL TILL
- j) SHOWN ON PLAN
- k) MUNICIPAL WATER & SEWAGE
- l) NONE

LAND USE STATISTICS			
LAND USE	LOT No. / BLK. No.	UNITS	AREA (ha)
Single - Detached Residential	1 - 20, 23 - 29	27	1.341
Semi - Detached Residential	21 - 22	4	0.226
Standard Townhouse Dwellings	30 - 35	33	0.891
Walk-way / Servicing	36		0.018
S.W.M. Pond	37		0.463
Streets 'A' & 'B'			0.916
TOTAL	37	64	3.855

IPS INNOVATIVE PLANNING SOLUTIONS
 PLANNERS • PROJECT MANAGERS • LAND DEVELOPERS
 647 WELHAM ROAD, UNIT 9, BARRIE, ON, L4N 0B7
 tel: 705 • 812 • 3281 fax: 705 • 812 • 3438 e: info@ipsconsultinginc.com www.ipsconsultinginc.com

Date: August 1, 2023 Drawn By: A.S.
 File: 23 - 1314 Checked: J.A. / K.B.



Appendix C
Species of Conservation Concern Screening



APPENDIX: Species of Conservation Concern - Simcoe County

COMMON NAME	SCIENTIFIC NAME	Federal SARA	Provincial SARO	S-RANK	SPECIES DESCRIPTION AND HABITAT REQUIREMENTS	SUITABLE HABITAT	SPECIES OBSERVATIONS	ASSESSMENT
Birds								
Bald Eagle	<i>Haliaeetus leucocephalus</i>	No Status	SC	S2N,S4B	The Bald Eagle is a bird of prey with a white head, neck and tail, a massive bright yellow beak, powerful legs, and a wingspan of over 2 m. It nests in a variety of habitats and forest types, almost always near a major lake or river where they do most of their hunting. These nests are usually on islands in freshwater lakes or in large trees such as the pine and poplar. During the winter, they may also be found near open bodies of water that do not freeze (1).	No	Confirmed absent through targeted surveys	No further consideration required
Bank Swallow	<i>Riparia riparia</i>	THR	THR	S4B	The Bank Swallow is a small songbird of around 12 cm long with a distinctive dark breast band, that flies with quick and erratic wingbeats (1). It nests in burrows in natural and human-made settings where there are vertical faces in silt and sand deposits. This can include banks of rivers and lakes, bluffs, active sand and gravel pits, road cuts and stockpiles of soils. However, they prefer sand-silt substrates for excavating their nest burrows. They often use large wetlands as communal nocturnal roosts post-breeding or during wintering periods (2).	No	Confirmed absent through targeted surveys	No further consideration required
Barn Swallow	<i>Hirundo rustica</i>	THR	THR	S4B	The Barn Swallow is a mid-sized songbird with steel-blue backs and wings, glossy in males, and a line of white spots across its upper tail. It lives in a variety of open habitats for foraging, such as grassy fields, pastures, certain agricultural crops, shorelines, cottage areas, wetlands, or subarctic tundra (2). They prefer to nest within human made structures such as barns, bridges, and culverts. Barn Swallow nests are cup-shaped and made of mud, typically attached to horizontal beams or vertical walls underneath an overhang (1).	Yes: on-site	Confirmed absent through targeted surveys	Potential significant wildlife habitat on-site
Black Tern	<i>Chlidonias niger</i>	No Status	SC	S3B	The Black Tern is a small waterbird with a forked tail, straight pointed bill, slender shape, and black head during breeding season. It builds floating nests in loose colonies in shallow marshes, with a preference for cattails. They breed primarily in the marshes along the edges of the Great Lakes, but may also use wetlands further north if suitable (1).	No	Confirmed absent through targeted surveys	No further consideration required
Bobolink	<i>Dolichonyx oryzivorus</i>	THR	THR	S4B	The Bobolink is a mid-sized songbird of tan colour with black stripes, except for males during summer breeding season who are black with a white back and yellow collar. It prefers tall, grassy meadows, hayfields and some croplands, and feeds (largely on insects) on the ground in dense grasses (1). It tends to nest in forage crops: hayfields and pastures dominated by species including clover, bluegrass, and broadleaf plants (2).	No	Confirmed absent through targeted surveys	No further consideration required
Canada Warbler	<i>Cardellina canadensis</i>	THR	SC	S4B	The Canada Warbler is a small songbird with bright yellow underparts and bluish-grey back and tail (1). It can be found in a variety of forest types, but is most abundant in moist, mixed forests with a well-developed, dense shrub layer. Nests are usually located on or near the ground on mossy logs, and along stream banks (3).	No	Confirmed absent through targeted surveys	No further consideration required
Cerulean Warbler	<i>Setophaga cerulea</i>	END	THR	S3B	The Cerulean Warbler, a small songbird, is blue-green with white eyebrows and two prominent white wing bars (1). It requires relatively large tracts of mature deciduous forest (>100 ha), and nests in older, second-growth deciduous forests. During breeding season, it is found in relatively large tracts of mature deciduous forests that feature large, tall trees and an open understory (4).	No	Confirmed absent through targeted surveys	No further consideration required



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COMMON NAME	SCIENTIFIC NAME	Federal SARA	Provincial SARO	S-RANK	SPECIES DESCRIPTION AND HABITAT REQUIREMENTS	SUITABLE HABITAT	SPECIES OBSERVATIONS	ASSESSMENT
Chimney Swift	<i>Chaetura pelagica</i>	THR	THR	S4B,S4N	The Chimney Swift is a small bird, between 12 and 14 cm, with a brown, cigar-shaped body, slender wings, and an erratic flight pattern. Prior to settlement, the Chimney Swift would mainly nest in cave walls and hollow trees. Now, it is found mostly near urban and suburban areas where the presence of chimneys or other manmade structures provide nesting and roosting habitat. They also tend to stay in habitat close to the water (1).	No	Confirmed absent through targeted surveys	No further consideration required
Common Nighthawk	<i>Chordeiles minor</i>	THR	SC	S4B	The Common Nighthawk is a medium-sized bird with long, pointed wings, a long tail with a notch, and large eyes. Its plumage of dark brown with black and white specks blends with its roost site. It 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 (1).	No	Confirmed absent through targeted surveys	No further consideration required
Eastern Meadowlark	<i>Sturnella magna</i>	THR	THR	S4B	The Eastern Meadowlark is a medium-sized migratory songbird with a bright yellow throat and belly, a black V shape on its chest, and a pointed bill. It prefers pastures and hayfields, but is also found to breed in orchards, shrubby fields, human-use areas such as airports and roadsides, or other open areas. The 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 (1).	No	Confirmed absent through targeted surveys	No further consideration required
Eastern Whip-poor-will	<i>Antrostomus vociferus</i>	THR	THR	S4B	The Eastern Whip-poor-will is a medium-sized bird with mottled brown and grey feathers to blend in with its surroundings, a large flattened head, and small bill. They are 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 (2). The species prefers to nest in semi-open or patchy forests with clearings as it forages in open areas and uses forested areas for roosting (1).	Yes: on-site and adjacent lands	Confirmed absent through targeted surveys	No further consideration required
Eastern Wood-Pewee	<i>Contopus virens</i>	SC	SC	S4B	The Eastern Wood-pewee is a species of 'flycatcher', a bird that eats flying insects. It grows to approximately 15 cm, has greyish-olive upper parts and pale bars on its wings. This species 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 (1). It typically creates nests on tree branches 2-12 m in height (2).	Yes: on-site and adjacent lands	Confirmed habitat on-site through targeted surveys	Confirmed significant wildlife habitat on-site
Evening Grosbeak	<i>Coccothraustes vespertinus</i>	SC	SC	S4B	The Evening Grosbeak is a large songbird with a thick greenish bill. It is a social bird that is often found in flocks, particularly during the winter months. Their preferred habitat is thick coniferous forest. During their breeding season, they are generally found in open, mature mixed forests dominated by Firs, White Spruce, or Trembling Aspen (1).	No	Confirmed absent through targeted surveys	No further consideration required
Golden Winged Warbler	<i>Vermivora chrysoptera</i>	THR	SC	S4B	The Golden-winged Warbler is a small songbird with distinctive yellow wing patches and patches behind their eyes. It inhabits early successional habitat of old fields and favour areas where trees are spread out or forest edges to use for perching, singing, and searching for food. They seem to prefer regeneration zones with young shrub growth, surrounded by mature forest, locations that have recently been disturbed, such as field edges, hydro or utility right-of-ways, or logged areas for their breeding sites; often frequenting clusters of herbaceous plants and low bushes (1).	Yes: on-site and adjacent lands	Confirmed absent through targeted surveys	No further consideration required



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COMMON NAME	SCIENTIFIC NAME	Federal SARA	Provincial SARA	S-RANK	SPECIES DESCRIPTION AND HABITAT REQUIREMENTS	SUITABLE HABITAT	SPECIES OBSERVATIONS	ASSESSMENT
Grasshopper Sparrow	<i>Ammodramus savannarum</i>	SC	SC	S4B	The Grasshopper Sparrow is a small songbird with a streaked back, a white stripe down the center of its crown, a flattish head, and a conical beak. It inhabits open grasslands and prairies with well-drained soil, preferring areas that are sparsely vegetated. It will also nest in hayfields and pastures, as well as alvars and occasionally grain crops such as barley (1).	No	Confirmed absent through targeted surveys	No further consideration required
King Rail	<i>Rallus elegans</i>	END	END	S2B	The King Rail is a large bird, standing at around 40 cm tall, with a long, curved bill, orange chest and neck, and black sides with vertical white bars. This species prefers densely vegetated freshwater marshes with open shallow water and shrub thicket areas. Current records for Ontario suggest that these birds prefer sites within coastal marshes of the Great Lakes. Most breeding pairs left in Ontario are found in wetlands bordering Lake St Clair or coastal marshes along Lakes Erie and Ontario (1).	No	Confirmed absent through targeted surveys	No further consideration required
Least Bittern	<i>Ixobrychus exilis</i>	THR	THR	S4B	The Least Bittern is a small member of the heron family, reaching around 30 cm in length. It has brown and beige plumage with chestnut patches on its wings (1). The species nests in marshes (> 5 - 10 ha) and swamps dominated by emergent vegetation, preferably cattails, interspersed with patches of woody vegetation and open water. They require dense vegetation and open water with stable levels within 10 m for nesting, and access to clear, open water for foraging (4).	No	Confirmed absent through targeted surveys	No further consideration required
Loggerhead Shrike	<i>Lanius ludovicianus</i>	END	END	S2B	The Loggerhead Shrike is a small bird with a black, hooked bill, grey crown, and white throat and chest. This species has specific habitat requirements that are dependent on active livestock grazing, or grassland areas that have naturally short grass cover (i.e. alvar communities). They also require spiny, multi-branched shrubs, or barbed fencing, to catch prey. They prefer grassland habitats that have sporadic occurrences of low trees and shrubs; particularly hawthorn species, which are used as part of their feeding behaviour (1).	No	Confirmed absent through targeted surveys	No further consideration required
Olive-sided Flycatcher	<i>Contopus cooperi</i>	THR	SC	S4B	The Olive-sided Flycatcher is a medium-sized songbird with olive colouring, often seen perching on top of tall trees waiting to catch their prey. It prefers open areas along natural mature forest edges, forest edges near natural openings such as rivers or swamps, human-made openings, or burned forest openings with numbers of dead trees. Breeding habitat usually consists of coniferous or mixed forests adjacent to rivers or wetlands, in Ontario often nesting in White and Black Spruce, Jack Pine, and Balsam Fir (1).	No	Confirmed absent through targeted surveys	No further consideration required
Peregrine Falcon	<i>Falco peregrinus</i>	SC	SC	S3B	The Peregrine Falcon is a bird of prey with a slate blue back, cream-coloured chest with dark markings, and pointed wings spanning around 1 m. It also has bright yellow feet and legs. This species can be found nesting on tall, steep cliff ledges close to large bodies of water. They prefer open habitats such as wetlands, tundra, savannah, sea coasts and mountain meadows for hunting, but may also be found above open forests. This species has also adapted well to living and nesting in urban areas, and has been documented using the ledges of tall buildings and other tall man-made structures for perches and nesting (1).	No	Confirmed absent through targeted surveys	No further consideration required



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COMMON NAME	SCIENTIFIC NAME	Federal SARA	Provincial SARO	S-RANK	SPECIES DESCRIPTION AND HABITAT REQUIREMENTS	SUITABLE HABITAT	SPECIES OBSERVATIONS	ASSESSMENT
Piping plover	<i>Charadrius melodus</i>	END	END	S1B	The Piping Plover is a small shorebird with light colouring, a stubby orange bill and orange legs. This species almost exclusively nests on dry sandy or gravelly beaches above the high-water mark to avoid waves. It can be found pecking the sand, searching for small pools of water for insects and small crustaceans to consume. Although not particularly common in Ontario, it is found along the shores of the Great Lakes, and in the Lake of the Woods in northwestern Ontario (1).	No	Confirmed absent through targeted surveys	No further consideration required
Red-headed Woodpecker	<i>Melanerpes erythrocephalus</i>	END	END	S4B	The Red-headed Woodpecker is a mid-sized bird, at around 20 cm long, with a vivid red head, neck and breast as well as a strong bill. The 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 (1).	No	Confirmed absent through targeted surveys	No further consideration required
Short-eared owl	<i>Asio flammeus</i>	SC	SC	S2N,S4B	The Short-eared Owl has a large round head with small tufts of feathers, long wings, a short tail, and cryptic colouring of brown streaks. This species is found in scattered pockets across the province where suitable open habitat, including grasslands, tundra, peat bogs and marsh, can be found in sufficient quantities. Adults build nests on the ground in grassy areas and occasionally agricultural fields (1). The main factor influencing their choice in habitat is believed to be an abundance of their food source, primarily rodents and other small mammals (2).	No	Confirmed absent through targeted surveys	No further consideration required
Wood Thrush	<i>Hylocichla mustelina</i>	THR	SC	S4B	The Wood Thrush is a medium-sized songbird of around 20 cm with rusty brown coloured upper parts and white underparts with large dark spots. It breeds in deciduous and mixed forests with moderate understories, shade and abundant leaf litter where it forages for food, including larval and adult insects as well as plant material. They prefer moist stands of trees with well-developed undergrowth and tall trees for perches (1).	Yes: on-site and adjacent lands	Confirmed absent through targeted surveys	No further consideration required
Yellow Rail	<i>Coturnicops noveboracensis</i>	SC	SC	S4B	The Yellow Rail is a small, quail-like marsh bird with a short yellow or black bill, short tail, with yellowish and black streaks on its back and white wing patches. This species is mainly found in the Hudson Bay Lowlands region, and is only found in localized marshes in southern Ontario. It is a secretive bird that lives deep within the reeds, sedges, and marshes of shallow wetlands which nest on the ground in areas that have an overlying mat of dry vegetation that can be used for nest building (1).	No	Confirmed absent through targeted surveys	No further consideration required
Fish								
American Eel	<i>Anguilla rostrata</i>	No Status	END	S1?	The American Eel is a long, slender bodied fish, with one long fin extending down the back and around the tail, and two small pectoral fins. It has thick lips, and a protruding lower jaw that extends out above the upper jaw. At the juvenile stage, they swim up the St. Lawrence River to reach Lake Ontario and connected tributaries where they will remain for 8 to 23 years before migrating back to their spawning grounds. In Ontario, the American eel prefers mud, sand or gravel substrates during the juvenile stage when they reside primarily in the benthic zone of waterbodies. More mature eels are able to thrive in most environments provided there is available cover during daylight hours, and the habitat is accessible (2).	No	Known to occur in the general area	No further consideration required
Deepwater Sculpin	<i>Myoxocephalus thompsonii</i>	SC	-	S1	The Deepwater Sculpin grows up to 8 cm in length, and has eyes on top of its head, a large mouth, three dark bands on its pectoral fins, and lacks true scales. This species inhabits the bottoms of cold, highly oxygenated lakes (2).	No	Known to occur in the general area	No further consideration required



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COMMON NAME	SCIENTIFIC NAME	Federal SARA	Provincial SARO	S-RANK	SPECIES DESCRIPTION AND HABITAT REQUIREMENTS	SUITABLE HABITAT	SPECIES OBSERVATIONS	ASSESSMENT
Blanding's Turtle	<i>Emydoidea blandingii</i>	END	THR	S3	Blanding's Turtles are identifiable by their bright yellow throat and chin and domed shell. They spend the majority of their life cycle in the aquatic environment, usually in large wetlands or shallow lakes with high densities of water plants (1). These turtles prefer shallow, nutrient rich water with organic sediment and dense vegetation. They use terrestrial sites for travel between habitat patches and to lay clutches of eggs, often going hundreds of meters from their nearest water body. Blanding's Turtles nest in dry coniferous and mixed forest habitats, as well as fields and roadsides (2). From late October until the end of April, they hibernate in the mud at the bottom of permanent water bodies (1).	No	Known to occur in the general area	No further consideration required
Eastern Musk Turtle	<i>Sternotherus odoratus</i>	SC	SC	S3	The Eastern Musk Turtle is small with a narrow carapace, a dark brown body and two light stripes on each side of their head (5). It is a small freshwater turtle found primarily in slow moving water bodies with abundant emergent vegetation and mucky bottoms along the southern edge of the Canadian Shield within which they burrow into overwinter. Nesting sites vary, but must be close to the water and exposed to direct sunlight (1).	No	Known to occur in the general area	No further consideration required
Midland Painted Turtle	<i>Chrysemys picta marginata</i>	SC	-	S4	The Midland Painted Turtle has a olive to black carapace with red or dark orange markings on the marginal scutes, as well as red and yellow stripes on the head and neck. The species uses a variety of waterbodies including, ponds, marshes, lakes and slow-moving creeks with a soft bottom and an abundance of basking sites and aquatic vegetation. This species usually hibernates on the bottom of waterbodies (5).	No	Known to occur in the general area	No further consideration required
Northern Map Turtle	<i>Graptemys geographica</i>	SC	SC	S3	The Northern Map Turtle is a medium sized turtle identified by its carapace's map contour-like patterning. It lives in larger lakes and rivers, requiring high water quality to support their primary prey species: molluscs. This species can often be seen in large groups basking together on rocks and logs. In the winter, the Northern Map Turtle can be found hibernating on the bottom of slow-moving rivers (1).	No	Known to occur in the general area	No further consideration required
Snapping Turtle	<i>Chelydra serpentina</i>	SC	SC	S3	The Snapping Turtle, with its large serrated carapace, small plastron, and spiked tail, is Canada's largest freshwater turtle (5). It spends the majority of its life in water, preferring shallow water with soft mud and leaf litter, and will travel upland to gravel or sandy embankments, roadsides, along railway lines or beaches to lay their eggs (1).	No	Known to occur in the general area	No further consideration required
Spotted Turtle	<i>Clemmys guttata</i>	END	END	S2	The Spotted Turtle is named after the distinct yellow spots on its carapace. The species is semi-aquatic and prefers ponds, marshes, bogs and even ditches with slow-moving, unpolluted water and an abundant supply of aquatic vegetation. This species usually hibernates in wetlands or seasonally wet areas with structures such as overhanging banks, hummocks, tree roots, or aquatic animal burrows (1).	No	Known to occur in the general area	No further consideration required
Wood Turtle	<i>Glyptemys insculpta</i>	THR	END	S2	The Wood Turtle has orange coloured front legs, neck and chin and a sculpted carapace with raised, pyramidal scutes (5). They prefer clear rivers and streams that have moderate current, and sandy or gravelly substrates. This species spends more time on land than other turtle species including in meadows, swamps and fields. Wooded areas are an essential habitat component, and the species uses aquatic habitats for hibernation and mating. Nesting occurs in areas with sandy soil and abundant light (1).	No	Known to occur in the general area	No further consideration required



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COMMON NAME	SCIENTIFIC NAME	Federal SARA	Provincial SARO	S-RANK	SPECIES DESCRIPTION AND HABITAT REQUIREMENTS	SUITABLE HABITAT	SPECIES OBSERVATIONS	ASSESSMENT
Monarch Butterfly	<i>Danaus plexippus</i>	SC	SC	S2N,S4B	The Monarch is an orange and black butterfly with small white spots and a wingspan of around 10 cm. It relies on milkweed plants as a food source for growing caterpillars, but the adult butterflies forage in diverse habitats for nectar from wildflowers (1).	No	Known to occur in the general area	No further consideration required
Hine's Emerald	<i>Somatochlora hineana</i>	END	END	S1	Hine's Emerald is a medium-sized dragonfly with a dark abdomen, metallic green thorax with two yellow stripes, and green eyes. Its habitat consists of groundwater-fed wetlands with grassy vegetation (1).	No	Known to occur in the general area	No further consideration required
West Virginia White	<i>Pieris virginiensis</i>	No Status	SC	S3	The West Virginia White is a small, dingy white butterfly. This species is found in moist deciduous woods, and requires a supply of toothwort, a small, spring-blooming plant, which provides the only source of food for its larvae. The West Virginia White is found mostly in the central and southern parts of Ontario, but its range extends north to Manitoulin and St. Joseph islands (1).	No	Known to occur in the general area	No further consideration required
Yellow-banded Bumble Bee	<i>Bombus terricola</i>	SC	SC	S3S5	The Yellow-banded Bumble Bee is a medium-sized bumble bee with a distinct yellow and black abdominal band pattern found on its queens, males, and workers. This species is a forage and habitat generalist, able to use a variety of nectaring plants and environmental conditions. It can be found in mixed woodlands, particularly for nesting and overwintering, as well as a variety of open habitat such as native grasslands, farmlands and urban areas. The Yellow-banded Bumble Bee ranges from the Mixedwood Plains of southern Ontario to the Hudson Bay Lowlands in the north (1).	Yes: on-site and adjacent lands	Known to occur in the general area	No further consideration required
Mammals								
Tri-colored Bat	<i>Perimyotis subflavus</i>	END	END	S3?	The Tri-colored Bat is small, with pale brown with orange-red forearms, muzzle, and ears. It is named for the black, yellow, and brown hairs on its back. It is considered rare in this region of Ontario which is at the northernmost limit of the natural range. These bats prefer to nest in foliage, tree cavities and woodpecker holes, but are occasionally found in buildings; though this is not their preferred habitat. Winter hibernation takes place in caves, mines and deep crevices. Tri-colored Bats prefer an open forest habitat type in proximity to water (6).	Yes: on-site and adjacent lands	Confirmed absent through targeted surveys	Potential habitat for endangered or threatened species on-site
Eastern Small-footed Myotis	<i>Myotis leibii</i>	No Status	END	S2S3	The Eastern Small-footed Myotis has fur with black roots and shiny brown tips as well as very small feet. In the spring and summer, the Eastern Small-footed Myotis 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. They hibernate in winter, often in caves and abandoned mines choosing colder and drier sites than other similar bats (1).	Yes: on-site and adjacent lands	Confirmed absent through targeted surveys	Potential habitat for endangered or threatened species on-site
Little Brown Myotis	<i>Myotis lucifugus</i>	END	END	S4	The Little Brown Myotis has glossy brown fur and a fleshy projection covering the entrance to its ears. This species roosts in trees and buildings, often selecting attics, abandoned buildings and barns for summer colonies where they can raise their young. Little Brown Bats hibernate from October/November to March/April, most often in caves or abandoned mines that are humid and remain above freezing (1).	Yes: on-site and adjacent lands	Confirmed absent through targeted surveys	Potential habitat for endangered or threatened species on-site
Northern Myotis	<i>Myotis septentrionalis</i>	END	END	S3	The Northern Myotis has dull yellow-brown fur with pale bellies and long, rounded ears. This species is found in boreal forests, roosting under loose bark and in the cavities of trees. These bats hibernate from October/November to March/April, most often in caves or abandoned mines (1).	Yes: on-site and adjacent lands	Confirmed absent through targeted surveys	Potential habitat for endangered or threatened species on-site



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Algonquin Wolf	<i>Canis lycaon</i>	SC	THR	S4	Formerly called the Eastern Wolf, this canine was recently renamed the Algonquin Wolf. In the southern portion of the province, this species prefers deciduous and mixed forest landscapes while their northern range include mixed and coniferous forests. It is most prevalent in areas with abundant prey species which include Beaver, White-tailed Deer and Moose. Dens sites are usually found in coniferous forests with easily excavated soil types like sand and close to a permanent water source (1).	No	Known to occur in the general area	No further consideration required
Trees, plants, fungi and lichens								
American Ginseng	<i>Panax quinquefolius</i>	END	END	S2	American Ginseng is a perennial plant which grows up to 60 centimetres in height. The leaves typically have five leaflets arranged in a whorl at the end of the leaf stem. The root looks like a gnarly parsnip. The flowers are an inconspicuous green-white in colour, but the berries are bright red and arranged in a cluster. In Ontario, the American Ginseng typically grows in rich, moist, and mature deciduous woods dominated by Sugar Maple, White Ash, and American Basswood. It typically grows in deep, nutrient rich soil over limestone or marble bedrock (1).	No	Confirmed absent through targeted surveys	No further consideration required
American Hart's-tongue Fern	<i>Asplenium scolopendrium</i>	SC	SC	S3	American Hart's Tongue Fern is a perennial evergreen fern with fronds growing from a short underground stem. Its blades are strap-shaped with a heart-shaped base and pointed tip. The species grows on calcareous rocks on slopes in deciduous forests, preferring deep shade. In Ontario, most occurrences are in maple-beech forests (1).	No	Confirmed absent through targeted surveys	No further consideration required
Black Ash	<i>Fraxinus nigra</i>	No status	END	S4	The Black Ash is a smaller-sized tree with a narrow crown, light grey and scaly bark, and green, oval leaflets on a central stalk. It grows everywhere in Ontario except for the far north, preferring moist climates and soils such as swampy woodlands or bogs (1).	No	Confirmed absent through targeted surveys	No further consideration required
Broad Beech Fern	<i>Phegopteris hexagonoptera</i>	SC	SC	S3	The Broad Beech Fern can grow to a height of 50 cm or more and has a creeping, scaly root (2). The fern has large divided leaves called fronds which grow from 25 to 75 cm long and triangular leaf blades. The Broad Beech Fern prefers rich, moist soils in deciduous forests, usually in full shade and often dominated by Maple and Beech trees. In Ontario, it is found in southern Muskoka, along Lake Erie, and in the eastern Lake Ontario - St Lawrence River region (1).	No	Confirmed absent through targeted surveys	No further consideration required
Butternut	<i>Juglans cinerea</i>	END	END	S2?	The Butternut is a medium sized tree reaching 30 m in height. It has large compound leaves with 11 to 17 leaflets. The fruit is oval, fuzzy and sticky. In Ontario, the Butternut prefers moist, well-drained soil, often along streams, or occasionally well-drained gravel sites. It grows alone or in small groups in deciduous forests (1).	Yes: on-site and adjacent lands	Confirmed absent through targeted surveys	No further consideration required
Eastern Prairie Fringed-orchid	<i>Platanthera leucophaea</i>	END	END	S2	The Eastern Prairie Fringed-Orchid has distinctive fringed white flowers with a deep "nectar spur" containing nectar and a flat, fringed "lip" serving as a platform for pollinating insects. It may lie dormant for years before flowering. It can be found in areas of tallgrass prairie or fen throughout the province and in some tamarack swamps of the Bruce Peninsula and Ottawa Area (1).	No	Confirmed absent through targeted surveys	No further consideration required



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Purple Twayblade	<i>Liparis liliifolia</i>	THR	THR	S2	The Purple Twayblade is a small orchid with two broad, shiny leaves at the base of the plant and a single stem from which mauve-purple flowers cluster. It can be found in a variety of habitats including open woodlands, mixed deciduous forests, shrub thickets, deciduous swamps, and coniferous plantations. It requires partial, but can not tolerate full, shade and therefore depends on natural disturbances to keep its habitat relatively open (1).	Yes: on-site and adjacent lands	Confirmed absent through targeted surveys	No further consideration required

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Appendix D
Vegetation Species List



VEGETATION
COMMUNITY

CLASSIFICATION: FOD5-3

COMMUNITY #: 1

LOCATION: 1255 Fuller Ave.
Penetanguishene

COORDINATES: -79.9212491, 44.7948455

PROJECT NUMBER: 16599-002

DATE: Oct. 28, 2021
Jun. 15, 2023

PROJECT
MANAGER: Jeremy Prah

FIELD STAFF: K. McKitterick (2021)
B. Hnatiw & M. Horn
(2023)

FIELD SHEET – Vegetation Species List

Common Name	Scientific Name	CoW	CoC	SARA	SARO	S-Rank
(Acer rubrum X Acer saccharinum)	<i>Acer x freemanii</i>	-5	6			SNA
Alder-leaved Buckthorn	<i>Endotropis alnifolia</i>	-5	7			S5
Basswood	<i>Tilia americana</i>	3	4			S5
Black Cherry	<i>Prunus serotina</i>	3	3			S5
Chokecherry	<i>Prunus virginiana</i>	3	2			S5
Eastern Hop-hornbeam	<i>Ostrya virginiana</i>	3	4			S5
Eastern Prickly Gooseberry	<i>Ribes cynosbati</i>	3	4			S5
Garden Stonecrop	<i>Hylotelephium telephium</i>	5				SNA
Large False Solomon's Seal	<i>Maianthemum racemosum</i>	3	4			S5
Long-stalked Sedge	<i>Carex pedunculata</i>	3	5			S5
Northern Red Oak	<i>Quercus rubra</i>	3	6			S5
Paper Birch	<i>Betula papyrifera</i>	3	2			S5
Poison Ivy	<i>Toxicodendron radicans</i>	0	2			S5
Rough Bedstraw	<i>Galium asprellum</i>	-5	6			S5
Spinulose Wood Fern	<i>Dryopteris carthusiana</i>	-3	5			S5
Sugar Maple	<i>Acer saccharum</i>	3	4			S5
Trembling Aspen	<i>Populus tremuloides</i>	0	2			S5
White Ash	<i>Fraxinus americana</i>	3	4			S4
Wild Lily-of-the-valley	<i>Maianthemum canadense ssp. canadense</i>	3	5			S5

NOTES: Hardwood edge of property- former hedgerow visible on historic air photo



VEGETATION
COMMUNITY

CLASSIFICATION: FOD5-3

COMMUNITY #: 1

PROJECT NUMBER: 16599-002

DATE: Oct. 28, 2021
Jun. 15, 2023

LOCATION: 1255 Fuller Ave.
Penetanguishene

PROJECT
MANAGER: Jeremy Prah

COORDINATES: -79.9212491, 44.7948455

K. McKitterick (2021)
B. Hnatiw & M. Horn
FIELD STAFF: (2023)

FIELD SHEET – Vegetation Species List

VEGETATION COMMUNITY PHOTOS:



Community 1, September 2021



Boundary between Community 5 (right) and Community 1 (left). September 2021.



VEGETATION
COMMUNITY

CLASSIFICATION: CUP3

COMMUNITY #: 2

LOCATION: 1255 Fuller Ave.
Penetanguishene

COORDINATES: -79.9212639,
44.7944128

PROJECT NUMBER: 16599-002

DATE: Oct 28, 2021 &
June 15, 2023

PROJECT
MANAGER: Jeremy Prah

FIELD STAFF: K. McKitterick (2021)
B. Hnatiw & M. Horn
(2023)

FIELD SHEET – Vegetation Species List

Common Name	Scientific Name	CoW	CoC	SARA	SARO	S-Rank
<i>Balsam Fir</i>	<i>Abies balsamea</i>	-3	5			S5
<i>Eastern White Pine</i>	<i>Pinus strobus</i>	3	4			S5
<i>Garlic Mustard</i>	<i>Alliaria petiolata</i>	0				SNA
<i>Large False Solomon's Seal</i>	<i>Maianthemum racemosum</i>	3	4			S5
<i>Meadow Hawkweed</i>	<i>Pilosella caespitosa</i>	5				SNA
<i>Norway Spruce</i>	<i>Picea abies</i>	5				SNA
<i>Poison Ivy</i>	<i>Toxicodendron radicans</i>	0	2			S5
<i>Red Pine</i>	<i>Pinus resinosa</i>	3	8			S5
<i>Rough Bedstraw</i>	<i>Galium asprellum</i>	-5	6			S5
<i>Scots Pine</i>	<i>Pinus sylvestris</i>	3				SNA
<i>Sugar Maple</i>	<i>Acer saccharum</i>	3	4			S5
<i>Trembling Aspen</i>	<i>Populus tremuloides</i>	0	2			S5
<i>White Ash</i>	<i>Fraxinus americana</i>	3	4			S4
<i>White Spruce</i>	<i>Picea glauca</i>	3	6			S5
<i>Wild Lily-of-the-valley</i>	<i>Maianthemum canadense ssp. canadense</i>	3	5			S5

NOTES: Continued row structure but different species composition



VEGETATION
COMMUNITY

CLASSIFICATION: CUP3

COMMUNITY #: 2

LOCATION: 1255 fuller Ave.
Penetanguishene

COORDINATES: -79.9212639,
44.7944128

PROJECT NUMBER: 16599-002

DATE: Oct 28, 2021 &
June 15, 2023

PROJECT
MANAGER: Jeremy Prah

FIELD STAFF: K. McKitterick (2021)
B. Hnatiw & M. Horn
(2023)

FIELD SHEET – Vegetation Species List

VEGETATION COMMUNITY PHOTOS:



Community 2 Facing East, June 2023



Community 2, Facing West, June 2023.



VEGETATION
COMMUNITY

CLASSIFICATION: CUP3

COMMUNITY #: 3

LOCATION: 1255 fuller Ave.
Penetanguishene

COORDINATES: -79.9216877,
44.7940382

PROJECT NUMBER: 16599-002

DATE: Oct 28, 2021 &
June 15, 2023

PROJECT
MANAGER: Jeremy Prah

FIELD STAFF: K. McKitterick (2021)
B.Hnatiw & M.Horn
(2023)

FIELD SHEET – Vegetation Species List

Common Name	Scientific Name	CoW	CoC	SARA	SARO	S-Rank
Chokecherry	<i>Prunus virginiana</i>	3	2			S5
Common Dandelion	<i>Taraxacum officinale</i>	3				SNA
Common Speedwell	<i>Veronica officinalis</i>	5				SNA
European Buckthorn	<i>Rhamnus cathartica</i>	0				SNA
European Mountain-ash	<i>Sorbus aucuparia</i>	5				SNA
Garden Stonecrop	<i>Hylotelephium telephium</i>	5				SNA
Paper Birch	<i>Betula papyrifera</i>	3	2			S5
Poison Ivy	<i>Toxicodendron radicans</i>	0	2			S5
Red Pine	<i>Pinus resinosa</i>	3	8			S5
Rough Bedstraw	<i>Galium asprellum</i>	-5	6			S5
Scots Pine	<i>Pinus sylvestris var. sylvestris</i>	3				SNA
Spinulose Wood Fern	<i>Dryopteris carthusiana</i>	-3	5			S5
Sugar Maple	<i>Acer saccharum</i>	3	4			S5
Trembling Aspen	<i>Populus tremuloides</i>	0	2			S5

NOTES: Plantation - older, un managed, needs thinning - established rows in northern block first row structure diminishes moving south - very low understory and herbaceous diversity - dense buckthorn seedlings and dense canopy cover



VEGETATION
COMMUNITY

CLASSIFICATION: CUP3

COMMUNITY #: 3

LOCATION: 1255 fuller Ave.
Penetanguishene

COORDINATES: -79.9216877,
44.7940382

PROJECT NUMBER: 16599-002

DATE: Oct 28, 2021 &
June 15, 2023

PROJECT
MANAGER: Jeremy Prah

FIELD STAFF: K. McKitterick (2021)
B.Hnatiw & M.Horn
(2023)

FIELD SHEET – Vegetation Species List

VEGETATION COMMUNITY PHOTOS:



Community 3, June 2023.



Community 3, June 2023.



VEGETATION
COMMUNITY

CLASSIFICATION: FOM2

COMMUNITY #: 4

LOCATION: 1255 Fuller Ave.
Penetanguishene

COORDINATES: -79.9226246,
44.7937533

PROJECT NUMBER: 16599-002

DATE: Oct 28, 2021 &
June 15, 2023

PROJECT
MANAGER: Jeremy Prah

FIELD STAFF: K. McKitterick (2021)
B.Hnatiw & M.Horn
(2023)

FIELD SHEET – Vegetation Species List

Common Name	Scientific Name	CoW	CoC	SARA	SARO	S-Rank
Black Walnut	<i>Juglans nigra</i>	3	5			S4
Black-eyed Susan	<i>Rudbeckia hirta</i> var. <i>pulcherrima</i>	3	0			S5
Bladder Campion	<i>Silene vulgaris</i>	5				SNA
Canada Cinquefoil	<i>Potentilla canadensis</i>	5	5			S2
Canada Yew	<i>Taxus canadensis</i>	3	7			S4
Chokecherry	<i>Prunus virginiana</i> var. <i>virginiana</i>	3	2			S5
Common Dandelion	<i>Taraxacum officinale</i>	3				SNA
Common Tansy	<i>Tanacetum vulgare</i>	5				SNA
Dame's Rocket	<i>Hesperis matronalis</i>	3				SNA
Eastern White Pine	<i>Pinus strobus</i>	3	4			S5
Garden Stonecrop	<i>Hylotelephium telephium</i>	5				SNA
Garlic Mustard	<i>Alliaria petiolata</i>	0				SNA
Iris pallida X Iris variegata	<i>Iris x germanica</i>	5				SNA
Large-leaved Aster	<i>Eurybia macrophylla</i>	5	5			S5
Lesser Periwinkle	<i>Vinca minor</i>	5				SNA
Manitoba Maple	<i>Acer negundo</i>	0	0			S5
Northern Red Oak	<i>Quercus rubra</i>	3	6			S5
Orchard Grass	<i>Dactylis glomerata</i>	3				SNA
Poison Ivy	<i>Toxicodendron radicans</i>	0	2			S5
Red Maple	<i>Acer rubrum</i>	0	4			S5
Red Pine	<i>Pinus resinosa</i>	3	8			S5
Red Raspberry	<i>Rubus idaeus</i>	3	2			S5
Riverbank Grape	<i>Vitis riparia</i>	0	0			S5
Riverbank Grape	<i>Vitis riparia</i>	0	0			S5
Scots Pine	<i>Pinus sylvestris</i> var. <i>syvestris</i>	3				SNA
Slender Yellow Wood-sorrel	<i>Oxalis dillenii</i>	3	0			S5
Staghorn Sumac	<i>Rhus typhina</i>	3	1			S5
Sugar Maple	<i>Acer saccharum</i>	3	4			S5



VEGETATION
COMMUNITY

CLASSIFICATION: FOM2

COMMUNITY #: 4

LOCATION: 1255 fuller Ave.
Penetanguishene

COORDINATES: -79.9226246,
44.7937533

PROJECT NUMBER: 16599-002

DATE: Oct 28th, 2021
& June 15th,
2023

PROJECT
MANAGER: Jeremy Prah

FIELD STAFF: K. McKitterick (2021)
B.Hnatiw & M.Horn
(2023)

FIELD SHEET – Vegetation Species List

Common Name	Scientific Name	CoW	CoC	SARA	SARO	S-Rank
Tall Goldenrod	<i>Solidago altissima</i>	3	1			S5
Tatarian Honeysuckle	<i>Lonicera tatarica</i>	3				SNA
Trembling Aspen	<i>Populus tremuloides</i>	0	2			S5
White Ash	<i>Fraxinus americana</i>	3	4			S4
White Spruce	<i>Picea glauca</i>	3	6			S5
Wild Carrot	<i>Daucus carota</i>	5				SNA
Wild Strawberry	<i>Fragaria virginiana ssp. glauca</i>	3	2			S4S5

NOTES: Recently regenerated with some remnant mature trees present

VEGETATION COMMUNITY PHOTOS:



Community 4, October 2021



Community 4, June 2023



Appendix E
Bird Species List
