Environmental Impact Study – Lora Bay Phase 4B Development, Town of the Blue Mountains, County of Grey, Ontario

September 6, 2023

Prepared for:
NG Lora Bay Limited

Cambium Reference: 15848-001

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Executive Summary

The Lora Bay 4B lands are a constituent of the Lora Bay Development community, which includes the historically developed Phases 1 through 4. A previous Environmental Impact Study (EIS), undertaken by Hensel Design Group in 2012, was completed holistically for the development community, which included the Phase 4B lands outlined herein. However, given the time since the previous investigation, an updated EIS was requested by the Town of the Blue Mountains (Town), which precipitated a full suite of environmental surveys and evaluations for the proposed development. This report seeks to provide all requisite information to address current natural heritage policies as a standalone document. However, efforts were also made to review, consider and supplement findings outlined in the previously completed work.

The Site is generally split between two forest communities, a Cultural Woodland (CUW) to the west, and a Fresh-Moist White Cedar- Birch Aspen Mixed Forest (FOM7-2) to the east. The Grey County Official Plan (2019), which was refined in 2017 using data acquired from the NDMNRF and airphoto analysis, does not identify the forest communities on the Site as Significant Woodlands, according to Appendix B of the Plan.

The subject Site is not within Grey Sauble Conservation Authorities (GSCA's) mapped regulated limits, and no features were identified on the Site that meet the criteria for protection under the previously defined *Ontario Regulation 151/06* or the recent amendments to the *Conservation Authorities Act, 1990* (CAA) dated July 1, 2023. Consistent with previous EIS report findings, no watercourses, waterbodies, or wetlands were documented on the Site. Through both updated field investigations and historical consultation efforts, it was determined that the Nipissing Ridge topographical feature, located downgradient of Phase 4B, precludes potential for fish habitat on Site, given its gradient, and the intermittent flow regime of hydrologic features, where present. No significant Life Science or Earth Science ANSIs are located on or within 120 m of the Site. No significant valleylands are found on or within 120 m of the Site.

Guidance documents produced by the MNRF for the identification and evaluation of Significant Wildlife Habitat (SWH) were used to identify and confirm occurrences of SWH on the Site (MNR, 2000). One form of SWH was identified: *Habitat for Species of Special Concern (Not including Endangered or Threatened Species)*. Suspected Chimney (or Digger) Crayfish burrows were documented during field investigations, which are considered SWH features. Supplemental investigations were completed to better understand their distribution on the local landscape, as they require specific habitat requirements. Through these investigations, Chimney Crayfish burrows were documented in all supplemental areas of investigation (i.e., outside the Site boundary), and at nearly all cross culverts, drainages, or ditch networks investigated by Cambium in the area. Further, and surprisingly contrary to the literature, they did not appear to have an affinity for specific surface elevations, and by extension groundwater / hydrological conditions, as they were found from 225 m to 185 m above sea level. Additional discussion for this species in the context of Significant Wildlife Habitat is provided in Section 5.1.

A series of targeted Species at Risk (SAR) surveys were undertaken at the Site. In total, two SAR were identified: Little Brown Myotis and Northern Myotis. Acoustic monitoring surveys indicated a high probability that both species of bat utilize the Site in some capacity. Maternity roosting surveys were also completed but did not identify a high density of snags that could be used for bat maternity roosting sites. As such, findings suggest utilization is likely to be in the form of foraging and non-maternal roosting habitat behavior. An Information Gathering Form, which detailed the results of the acoustic monitoring surveys, has been submitted to MECP for further analysis and consideration of permitting/approvals under the ESA for these species.

Within the report, it has been demonstrated that the proposed development can be completed in conformity with applicable provincial policies, provided the requisite consultation, mitigation and recommendations are implemented. A summary of applicable policies and conformity considerations is provided Section 6.0. A comprehensive list of recommended mitigation and best management practices is provided in Section 7.0.

1.0 Introduction

Cambium Inc. (Cambium) was retained by NG Lora Bay Limited (Client) to conduct an Environmental Impact Study (EIS) for the Phase 4B lands of the Lora Bay Development located at 9 East Ride Drive, in the Town of the Blue Mountains (Town), County of Grey, Ontario (Figure 1). Phases 1 through 4 of the Lora Bay Development were Draft Plan approved through previous applications, which were supported in part by a previously completed EIS of the entire Lora Bay Development (Hensel Design Group Inc. , 2012). We understand that the Client is currently pursuing Draft Plan Approval for the Phase 4B lands and that an EIS is required in support of a Draft Plan of Subdivision application. This report intends to update the findings of the previous EIS, as they relate to the Phase 4B lands. Based on the proposed development, the entire Phase 4B property will be considered the Site for this report.

An EIS (the Study) is required 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 and unevaluated wetlands (Figure 1). The Site is within Ecoregion 6E of Ontario (Crins, Gray, Uhlig, & Wester, 2009) and outside the Growth Plan for the Greater Golden Horseshoe, 2020 (GPGGH) and designated Settlement Area boundaries.

The Site is within the jurisdiction of the Grey Sauble Conservation Authority (GSCA); however, their regulated area does not overlap the Site. As the Site may contain wetlands and/or watercourses, the Study will consider regulations on development as imposed by the local Conservation Authority's Regulation under the *Conservation Authorities Act, 1990*.

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. 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. Presented herein are 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 at the Site. Information has been compiled to evaluate the existing natural heritage features relevant to the proposed development, including an assessment of the significance and sensitivity of these features in the context of the proposed development. The interpretation includes an assessment of the form and function of natural heritage features on and adjacent to the Site, and evaluates the potential for impact to these features in relation to the proposed development. Data is 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 Town and GSCA were contacted directly to confirm the Terms of Reference (TOR) for the subject Study. A record of the correspondence is included in Appendix A. The Town of the Blue Mountains confirmed the proposed TOR meet the terms outlined in the Town's Official Plan. Since that time, additional coordination for the TOR of future phases of the Lora Bay Development have been initiated, with The Town's intention to circulate the TOR to the County for input. Cambium has not received any additional input from the Town or County as of the date of this report. Through this correspondence, it was confirmed that the GSCA will not be providing input on the TOR under the existing policy framework.

1.2 Summary of Proposed Development

The Site is currently undeveloped and consists primarily of woodland. The Site is bordered to the north and east by the Lora Bay golf course, Georgina Trail to the south, and West Ridge Drive to the west (Figure 1).

The proposed development consists of a residential subdivision and associated roads, servicing blocks, and park space. A Draft Site Plan 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
- Grey County Official Plan, 2019
- Town of the Blue Mountains Official Plan, 2016 and Zoning By-law 2018 - 65
- GSCA Regulation of Development, Interference with Wetlands and Alterations to Shorelines and Watercourses
- Provincial *Endangered Species Act* (ESA), 2007
- Federal *Species at Risk Act* (SARA), 2002
- Federal *Fisheries Act*, 2019
- Federal *Migratory Birds Convention Act* (MBCA), 1994

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 Conservation Authority Regulation

"Conservation Authorities are community-based watershed management agencies, whose mandate is to undertake watershed-based programs to protect people and property from flooding, and other natural hazards, and to conserve natural resources for economic, social and environmental benefits" (Conservation Ontario, 2022). Historically, Conservation Authorities each had their own Regulation under the *Conservation Authorities Act, 1990*. However, since Bill 23 received royal assent on November 28, 2022, all 36 conservation authority regulations have been consolidated into a single regulation within the *Conservation Authorities Act*, which is effective as of July 1, 2023. Part VI of the *Conservation Authorities Act* outlines that areas within the regional conservation authority's jurisdiction include

watercourses, hazard lands, wetlands, river or stream valleys, and the nearshore areas of the Great Lakes, St. Lawrence River, and applicable inland lakes.

2.3 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 – Grey County	Recreation Resort Area
Official Plan – Town of The Blue Mountains	Recreation Commercial Area and Residential Commercial Area
Zoning By-law – Town of the Blue Mountains	Development

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

2.4 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.

2.5 Fisheries Act, 1985

The Department of Fisheries and Oceans Canada (DFO) administers the federal *Fisheries Act* which defines fish habitat as "*spawning grounds and other areas, including nursery, rearing, food supply and migration areas, on which fish depend directly or indirectly in order to carry out their life processes*" (Subsection 2(1)). Works within and adjacent to lakes, watercourses, and other bodies of water containing fish have the potential to impact fish and/or fish habitat. The

Fisheries Act prohibits the harmful alteration, disruption, or destruction (HADD) of fish habitat (Subsection 35(1)), which is defined as "*any temporary or permanent change to fish habitat that directly or indirectly impairs the habitat's capacity to support one or more life processes*".

As a result of amendments to the federal Fisheries Act in 2019, projects near water that could potentially impact fish or fish habitat may require DFO review. The primary purpose of the review is to determine whether HADD of fish habitat, as defined by the Act, can be avoided. The DFO Fisheries Protection Program provides a Decision Framework and guidance material applicable to these reviews (available on-line at www.dfo-mpo.gc.ca/pnw-ppe/index-eng.html).

2.6 Species at Risk Act, 2002

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

2.7 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)
- Grey County Official Plan, 2019
- Town of Blue Mountains Official Plan, 2016 and Zoning By-law 2018 - 65
- Grey Sauble Conservation Authority regulated area mapping
- An Environmental Impact Statement for the Proposed Lora Bay Development The Blue Mountains, Grey County (Hensel Design Group Inc. , 2012)
- Aquatic Species at Risk distribution maps (Fisheries and Oceans Canada, 2022)
- Aquatic Resource Area Summary Data (Government of Ontario, 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	Unevaluated wetlands Woodlands
NHIC Database	17NK3936	Colonial Waterbird Nesting Area - SNR Shining-branch Hawthorn – S3 Eastern Meadowlark – THR Bobolink – THR
Ontario Breeding Bird Atlas (OBBA)	17TNK33	Incorporated into list of species within Appendix C
Ontario Reptile and Amphibian Atlas (ORAA)	17NK43	Incorporated into list of species within Appendix C
Aquatic SAR distribution maps	Site and 120 m adjacent lands	No aquatic SAR within 120 m

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 (MNRF), 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.

To accompany the investigations of this Study, the MECP was consulted to evaluate the findings and potential impacts to SAR that could result from the proposed development. As outlined in the following sub-sections (see Section 4.5.3.1 and 4.5.3.2), two species of bats (Little Brown Myotis [*Myotis lucifugus*], and Northern Myotis [*Myotis septentrionalis*], were detected on the subject lands during the deployment of targeted acoustic monitoring for bats. An information Gathering Form (IGF) was submitted to the MECP on September 6, 2023. Relevant correspondence has been included in Appendix A.

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 Wetland Boundary Delineation

In Ontario, wetlands are mapped and evaluated under the Ontario Wetland Evaluation System (OWES). Mapped evaluated wetlands have undergone extensive study and been assessed based on their form and function under four categories: Biological, Social, Hydrological, and Special Features (Ministry of Natural Resources, 2022). Evaluated wetlands that score high enough are deemed Provincially Significant Wetlands (PSW). Evaluated wetlands that did not

score high enough to be a PSW are called Locally Significant Wetlands (LSW). The province also maps unevaluated wetlands. These mapped wetlands are approximate; as such, they require field verification in order to confirm their presence and determine their boundaries.

The subject wetland was delineated following provincially approved methods outlined in the Ontario Wetland Evaluation System: Southern Manual, 4th Ed. (Ministry of Natural Resources, 2022). Fieldwork was carried out by provincially certified Cambium staff. Wetland boundaries were initially delineated and classified by orthoimagery interpretation. The presence/absence of wetlands on the Site was confirmed through field investigations during the growing season (late May through October). Wetland boundaries were determined using the 50% wetland vegetation rule. Where vegetation-based delineation was inconclusive, soil assessment with a hand auger was used to confirm wetland boundaries. Wetland boundaries on the Site were marked with a hand-held GPS unit and staked/flagged in the field. Where wetland communities extend off the Site, classification was done through observation from property boundaries and publicly accessible lands.

To supplement the procedure outlined above, the Site was visited during the early spring in order to document the extent of surface flooding at that time of year. This information is used to assist with the determination of wetland boundaries during the growing season.

3.3.3 Surface Water and Drainage Feature Mapping

Presence, location, boundary, and direction of flow were confirmed for all surface water features on and adjacent to the Site through visual investigation. Where feasible, the substrate type and cover features of surface water features were also noted. Indicators of surface drainage, including erosion of soils, gullies, and sediment deposition areas were noted and traced to identify sources of erosion. All watercourse and drainage feature crossings were noted and GPS marked in the field, including bridges, culverts, and bed-level crossings.

3.3.4 Butternut Survey and Health Assessment

Butternut (*Juglans cinerea*) is an endangered species protected under the provincial ESA from being killed, harmed, or removed. The level of protection granted to Butternut trees is

determined based on the degree to which an individual tree has been affected by the fungal pathogen known as butternut canker (*Sirococcus clavigignenti-juglandacearum*). Prior to undertaking any activity that may affect the Butternut or the lands within 25 m of a tree, an assessment of tree health must be performed by a Butternut Health Expert (BHE) (i.e., a qualified professional who has the expertise, education, training, and experience necessary to assess the health of butternut trees and to carry out the responsibilities imposed on the expert by Ontario Regulation 830/21). The health assessment divides trees into three health categories based on procedures outlined in the Butternut Assessment Guidelines (Ministry of Environment Conservation and Parks, 2021). During the assessment, a BHE must determine for each tree: the health category of the tree, whether the tree is a putative hybrid, and whether the tree is believed to be naturally occurring or cultivated. The health category of Butternut trees are classified as follows:

- Category 1: affected by butternut canker to such an advanced degree that retaining the tree would not support the protection or recovery of butternut trees in the area in which the tree is located.
- Category 2: not affected by butternut canker or affected by butternut canker but the degree to which it is affected is not as advanced as Category 1 and retaining the tree could support the protection or recovery of butternut trees in the area in which the tree is located.
- Category 3: could be useful in determining how to prevent or resist butternut canker.

Hybrids of Butternut and non-native Walnut trees are different species from Butternut, are not fully native to Ontario, and are not protected under the ESA. To determine if a tree is a putative hybrid, the BHE must use the Key for Field Identification of Butternut Hybrids as detailed in the ministry guidelines. Should the field assessment results be inconclusive, genetic testing may be pursued.

Butternut health evaluations should be carried out during the Butternut growing season (May 15 to August 31); out of season evaluations may be conducted but require the exclusion of certain assessment criteria, as detailed in the Ministry guidelines.

3.3.5 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	

Code	Description
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
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.

3.3.6 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.

3.3.7 Winter Raptor and Stick Nest Survey

Visual surveys for winter use of the property by raptors were completed in accordance with a modified version of the Hawk Migration Association of North America (HMANA) protocol. Two surveys were conducted during leaf-off conditions. The HMANA protocol was developed for long-term monitoring, and is not fully compatible with a site specific, short-term evaluation of use of a particular area. As such, the data collected by Cambium should be viewed as a snapshot in time, and not a reflection of overall or long-term migration patterns of raptors in the area. Sightings of raptors and habitat were noted, if applicable.

3.3.8 Amphibian Breeding Surveys

The presence of frog and toad breeding habitat was determined using auditory surveys following the Marsh Monitoring Program Participant's Handbook for Surveying Amphibians (Bird Studies Canada, 2008). According to the protocol, three amphibian surveys should be conducted between April and July, at least 15 days apart, in order to span the breeding seasons of all species that may be present in an area. Air temperature is the primary factor in determining survey dates, as different species call when air and water temperatures reach certain levels; therefore, nighttime air temperature should be greater than 5°C for the first survey, greater than 10°C for the second survey and greater than 17°C for the third survey. Other weather conditions are also taken into consideration. Conditions are considered

appropriate when wind speed is low (<19 km/h; Beaufort Wind Scale of 3 or lower) and there is light or no precipitation occurring (high humidity is ideal but heavier rain can impact ability to hear and differentiate calls). Sample points are established during the first survey, and re-visited during following surveys. At each sample point, calls from all species are aurally surveyed for 3 minutes and noted to the greatest extent possible, on a 100 m semi-circular area in front of the sampling station using call intensity codes established by the protocol:

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

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

3.3.9 Bat Surveys

3.3.9.1 Maternity Roost Habitat Surveys

Bats present in Ontario typically require a snag or cavity tree for maternity roosting habitat. A snag or cavity tree is defined as a standing live or dead tree, preferably ≥25 cm diameter at breast height (DBH), with cracks, crevices, hollows, cavities and/or loose or naturally exfoliating bark appropriate for bat roosting. High quality or SWH is defined as woodlands with greater than 10 roost trees per hectare. To determine if candidate SWH habitat for bats existed on/or adjacent to the Site, Cambium staff conducted a bat maternity roost survey using the methods detailed in the *Bat and Bat Habitats: Guidelines for Wind Power Projects* (Ontario Ministry of Natural Resources, 2011). The protocol requires that for sites with ≤10 ha of deciduous or mixed treed forest or swamp ELC community types (i.e. FOD, FOM, SWD, SWM), a minimum of 10 randomly selected plots are to be surveyed, with an additional plot added per hectare, to a maximum of 35 plots for the project area. Within the protocol, it is

acknowledged that a modified approach may be required for larger Sites. At each plot, the number of snag/cavity trees ≥25 cm DBH within a 12.6 m radius (0.05 ha) is to be recorded. A calculation is then made to determine the snag density and if the number of cavity trees found meets the criteria for maternity surveys.

3.3.9.2 Bat Acoustic Monitoring

Supplemental to the above habitat-based survey protocols, bat acoustic monitoring surveys were completed to determine, with reasonable certainty, the bat species present in the immediate area of the Site. Bat species were identified using analysis of sonographic characteristics from recordings of ultrasonic calls emitted by bats for echolocation. Survey methods were developed based on the MNRF survey guidelines outlined in Bat and Bat Habitats: Guidelines for Wind Power Projects (2011) and current guidance provided by MNRF for surveying SAR bats in Ontario. Passive acoustic monitoring on the Site occurred between June 8, 2023, and June 28, 2023. Recordings were made using Wildlife Acoustics Song Meter Mini Bat Ultrasonic Recorders. Devices were deployed at a given monitoring station for at least 10 days/nights, prior to being retrieved. All acoustic devices were installed directly on the north side of a tree, approximately 2 m above the ground. Acoustic monitoring devices were configured to begin recording 30 minutes prior to sunset and end recording 6 hours after the start of recording, each day.

Cambium used the automatic species identification feature of the Wildlife Acoustics Kaleidoscope Pro Version 5.6.1 software package to analyze all ultrasonic recordings. The data was analyzed using the Auto ID for Bats of North America 5.4.0 Ontario feature, and the batch processing option. Data was processed using equipment specific software to identify bats to species, to the extent possible. All calls, including unidentifiable calls, are reported in the survey data. Auto ID feature settings were selected as follows:

Bats of North America 5.4.0 (Ontario Region)

Minimum to Maximum Frequency Range = 8-120 kHz

Minimum and Maximum length of detected pulses = 2-500 ms

Maximum inter-syllable gap = 500 ms

Minimum number of pulse = 2

The Kaleidoscope Pro Auto ID feature assigns p-values to each group of species-assigned recording events. These p-values provide a measure of the likelihood that a specific bat species was present in the recording area. A p-value <0.05 indicates a high probability of species presence. A p-value >0.05 and <0.1 indicates a medium probability of species presence. According to the software developer/publisher, a p-value >0.1 is indicative of a false positive. The NHIC database and SARO list were reviewed to determine the current provincial status for all bat species identified.

3.3.10 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
2022-07-13	08:30-13:30	Temp: 19.1 – 22.5°C Clear Wind: 0/1 Noise: 1	B. Hnatiw	Ecological Land Classification and Vascular Plant Survey Aquatic Habitat Assessment Habitat-Based Wildlife Survey
2022-07-21	12:30-14:45	Temp: 23.8 – 27.9°C Overcast Wind: 4/5 Noise: 1	B. Hnatiw C. Jermey	Habitat-Based Wildlife Survey
2022-10-05	8:00-16:00	Temp: 8-20ºC Clear Wind Code: 0 Noise Code: 0	D. Leal	Surface Water and Drainage Feature Mapping
2023-01-18	7:45-17:00	Temp: 3.0-3.3ºC Partly Cloudy Wind Code: 1 Noise Code: 1	B. Hnatiw	Bat Maternity Roost Habitat Survey
2023-04-27	17:30-20:15	Temp:10.1-13.2ºC Clear Wind Code: 1 Noise Code: 1	B. Hnatiw	Bat Maternity Roost Habitat Survey Amphibian Breeding Survey #1

Date	Time On Site	Weather	Observer	Activities
2023-05-04	8:15-17:30	Temp: 4.3-8.5ºC Clear/Rain Wind Code: 2/3 Noise Code: 0/1	B. Hnatiw	Ecological Land Classification and Vascular Plant Survey
2023-05-29	21:15-23:30	Temp: 14.6-16.5ºC Clear Wind Code:0 Noise Code: 0	B. Hnatiw	Amphibian Breeding Survey #2 Eastern Whip-poor-will Survey #1
2023-06-06	20:00-23:45	Temp: 15.5-16.1ºC Clear Wind Code:0 Noise Code: 0	B. Hnatiw	Eastern Whip-poor-will Survey #2
2023-06-08	17:30-23:30	Temp: 16.0-16.4ºC Party Cloudy Wind Code:2 Noise Code: 1/2	B. Hnatiw	Bat Acoustic Monitoring Installation Ecological Land Classification and Vascular Plant Survey
2023-06-11	8:30-12:00	Temp: 14ºC Fog Wind Code: 2 Noise Code: 3	M. Soden	Breeding Bird Survey #1
2023-06-28	9:00-00:30	Temp: 16.9-19.0ºC Clear/Overcast Wind Code:0 Noise Code: 1/2/3	B. Hnatiw	Ecological Land Classification and Vascular Plant Survey Bat Acoustic Monitoring Removal Amphibian Breeding Survey #3 Eastern Whip-poor-will Survey #3
2023-07-05	5:30-10:00	Temp: 20.1-25.2ºC Clear Wind Code: 1 Noise Code: 1/2/3	K. Vizza	Breeding Bird Survey #2

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 topography of the property is relatively flat with minor undulation, small depressions, and areas of depositional rocks and boulders. There is a general slope northward towards Georgian Bay and the existing Lora Bay golf course. The elevation on Site ranges from 220-230 masl.

4.2 Surface Water and Drainage Features

No mapped watercourses, drainage features or fish habitat are present on the Site. Immediately south of the Site (i.e., on adjacent lands), the Georgian Trail bisects topographical flow patterns and diverts most flows perpendicular along the adjacent ditch lines eastward and westward. Several cross culverts are present along Georgina Trail, proximal to the Site, but a small topographical rise immediate north of the trail limits flow conveyance northward through the Site. This observation is corroborated and outlined in Drawing ODP-1 – Existing Overall Drainage Plan of the Tatham Engineering Stormwater Management Plan (Tatham, 2022), which shows the Site as primarily within its own catchment area (Catchment ID 105), and not contiguous with areas southward. As such, drainage features are limited on the landscape, and where surface water is present, appears to be driven by snowmelt and precipitation. Small areas of standing surface water were observed within the forest communities on the Site during spring conditions but were generally dry during late spring and summer investigations (discussed in Section 3.3.1 below). These ephemeral/intermittent surface water features were

investigated for function as amphibian breeding habitat and are discussed further in Section 3.3.8.

4.3 Wetland Delineation

Provincial mapping shows two unevaluated wetland features overlapping the property, as illustrated on Figure 1. Seasonal wet areas were documented in minor depressions within the forest community complex, generally associated with the areas provincially mapped as wetland. However, these areas were limited in size (i.e., < 500 m^2) and exhibited a limited hydroperiod (observed to be dry by late spring). No evidence of surface connectivity between the area and any other hydrologic features was noted during the Site investigations. Given their size, they are considered inclusions in the woodland community, which is consistent with previous ELC mapping completed by Hensel Design Group Inc. in 2012. Nonetheless, their function as potential SWH for amphibian breeding habitat was investigated and discussed further below.

4.4 Vegetation Communities and Inventory

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	CUW	Cultural Woodland	Terrestrial	N/A
2	FOM7-2	Fresh – Moist White Cedar – Birch-Aspen Mixed Forest	Terrestrial	S5

No provincially rare vegetation communities were observed on the Site or adjacent lands. No at risk or provincially rare (S1, S2) species were identified on the Site.

Community 1, which comprises the western portion of the Site, has been heavily influenced anthropogenically. It was dominated by White Ash with abundant White Elm. The ash trees on

the Site were generally found to be infested with Emerald Ash Borer, resulting in the majority of mature trees being in poor health. The understory was dominated by European buckthorn with ground cover composed primarily of Poison Ivy, Woodland Strawberry, and Virginnia Creeper.

Community 2, comprising the eastern portion of the Site, was dominated by Eastern White Cedar with abundant Trembling Aspen and Paper Birch. Other tree species present included Eastern Hop-hornbeam, Basswood, and Sugar Maple. There was little understory present in this area, generally limited to European Buckthorn. Ground cover was also minimal, as expected due to the density of tree cover. Ground cover species included sparse Poison Ivy, Woodland Strawberry, Bracken Fern, and Herb-Robert. The community has numerous boulders and depressions that allow water to collect in areas during spring or high rain events, some of which contained small pockets of wetland dominated plants, but these areas were typically surface dry for most of the year. Given their size, the wet areas were too small to be their own community and were considered inclusions of Community 2. Soil characterization was also completed within Community 2, as outlined in Section 4.4.1 below.

A search for Butternut was completed as part of the vegetation inventory. No butternuts were identified within the Phase 4B lands in Communities 1 and 2 (see Figure 2).

4.4.1 Soil Characterization

Soil characterization was completed within Community 2 to document and evaluate moisture regime and depth to water table in conjunction with vegetation type. Soils were sampled using a hand auger, and moisture regimes were determined based on industry standard guidance. A summary of the soil characterization efforts on the Site is provided in Table 7, and soil core locations are illustrated on Figure 2.

Table 7 Soil Characterization Summary

No.	ELC Code	Soil Description	Effective Texture Pore Pattern Class	Moisture Regime
2	FOM 7-2	Soil sampled in a representative upland location. A layer is Silty Sand to approximately 10 cm. B layer is Silty Clay to approximately 37 cm deep. C layer is Sandy Clay. Rock refusal encountered at 80 cm. No mottles, gley, or water table were observed.	4 (Retentive)	2 (Fresh)

4.5 Wildlife Survey Results

Incidental wildlife observations were recorded during all site visits. These included American Crow, American Robin, American Toad, Black Bear (scat), Black-capped Chickadee, Blue Jay, Eastern Chipmunk, Coyote, Eastern Grey Squirrel, Hairy Woodpecker, Killdeer, Mourning Dove, Northern Cardinal, Pileated Woodpecker, Red Squirrel, Roughed Grouse, Wild Turkey, and White-tailed Deer.

4.5.1 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. A total of 8 species had probable or confirmed breeding evidence (shaded cells in Appendix E). Species with probable or confirmed breeding evidence **on the Site** included:

- American Robin
- Black-capped Chickadee
- Black-and-white Warbler
- Blue Jay
- House Wren

- Red Eye Vireo
- Roughed Grouse
- Song Sparrow

No SCC or area-sensitive bird species were observed during the breeding bird surveys. In addition, targeted Eastern Whip-poor-will breeding bird surveys were completed at a single station as shown on Figure 2. No Eastern Whip-poor-will were observed on or adjacent to the Site.

A Colonial Waterbird Nesting Area is provincially mapped across a large area associated with Georgian Bay, approximately 500 m northeast of the Site. No waterbird nesting habitat is present on or adjacent to the Site.

4.5.2 Amphibians

Amphibian breeding surveys were completed and a total of 3 species were identified on or adjacent to the Site, as shown in Table 8. No call level codes of 3 were recorded. The call codes listed in Table 8 are the maximum call levels documented for each species during the three survey events.

Table 8 Summary of Amphibian Survey Results

Sample Point	Survey Date	Survey Direction	Species	Maximum Call Intensity	# of Individuals	Inside or Outside 100 m Sample Plot
1	April 27	SE	Spring Peeper	2	7	Outside; on adjacent golf course lands
	May 29		Gray Treefrog	1	2	Outside; on adjacent golf course lands
	June 28		None	-	-	-
2	April 27	N	Western Chorus Frog	1	2	Outside; suspected to be calling from the golf course.

Sample Point	Survey Date	Survey Direction	Species	Maximum Call Intensity	# of Individuals	Inside or Outside 100 m Sample Plot
	May 29		(None)	-	-	-
	June 28		(None)	-	-	-

Notes: "-" indicates no calls heard

4.5.3 Mammals

4.5.3.1 Bat Maternity Roost Habitat Surveys

Extensive investigations were completed during leaf-off conditions for potential bat maternity roost habitat throughout the Site, as well as the adjacent Lora Bay development area, as outlined in Section 3.3.9.1. Within the Site, two plots were established in Community 1 and four in Community 2. Only one suitable snag was identified within Community 2. As such, within the Phase 4B lands, snag density was determined to be less than 10 snags/hectare and therefore unlikely to provide maternity roosting habitat potential.

4.5.3.2 Bat Acoustic Monitoring

Despite relatively low snag density on the Phase 4B lands, potential still exists for utilization of the Site by SAR bats, including maternity roosting, foraging and/or non-maternity roosting functions. As such, passive acoustic monitoring was conducted between June 8, 2023, and June 28, 2023, to assess utilization of the Site by bats. The guidelines provided by MECP recommend establishing four stations per hectare of suitable habitat; however, there is an acknowledgement that this approach may not be practical on larger Sites. Using detailed vegetation communities information, ELC mapping, and the snag inventory (see Section 4.5.3.1, above) Cambium identified areas within each community which exhibited the most suitable habitat potential (i.e., adjacent to identified snags) and deployed acoustic monitoring devices within those areas, and dispersed stations representatively across the treed communities. A total of 3 acoustic monitoring stations were established on the Site. Acoustic monitoring station locations are shown on Figure 2. Table 9, below, provides a summary of

geographic coordinates, installation dates, device placement, and retrieval dates, for all stations.

Table 9 Bat Acoustic Installation Summary

Survey Station	Date Installed	Device Placement Notes	Date Retrieved	UTM Coordinates	
				Easting	Northing
BAS5	June 8, 2023	Installed on White Ash	June 28, 2023	539633	4936572
BAS6	June 8, 2023	Installed on White Ash	June 28, 2023	539588	4936686
BAS7	June 8, 2023	Installed on White Ash	June 28, 2023	539468	4936655

Based on the results, a total seven bat species were identified on the Site over the course of the monitoring period. Four of the eight species identified are relatively common in Ontario (Big Brown Bat, Eastern Red Bat, Hoary Bat, and Silver-haired Bat). The most dominant species in the area was Big Brown Bat followed by Little Brown Myotis, a species listed as endangered under the ESA. In addition, low levels of species-linked events for two other endangered species protected under the ESA (Northern Myotis, and Tricolored Bat) were also detected.

A summary of the 3737 species-linked events documented through the Study is provided in Table 10. Of these events, 1719 (46%) were identified as Big Brown Bat, 1167 (31%) as Little Brown Myotis, 460 (12%) as Silver-haired Bat, 356 (10%) as Hoary Bat, 24 (1%) as Eastern Red Bat, 7 (0.2%) as Northern Myotis, and 4 (0.1%) as Tri-colored Bat.

Table 10 Bat Acoustic Monitoring Results Summary

Station	Big Brown Bat	Eastern Red Bat	Hoary Bat	Silver-haired Bat	Eastern Small Footed Myotis	Little Brown Myotis	Northern Myotis	Tri-colored Bat	Bat Not Identified to Species	Total
BAS5	815	8	155	199	0	83	0	2	265	**1527**
BAS6	98	2	46	92	0	23	7	1	182	**451**
BAS7	806	14	155	169	0	1061	0	1	246	**2452**
Total	**1719**	**24**	**356**	**460**	**0**	**1167**	**7**	**4**	**693**	**4430**
Total	**1719**	**8**	**356**	**291**	**0**	**1167**	**7**	**0**	**0**	**3548**
Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Total	**0**	**16**	**0**	**169**	**0**	**0**	**0**	**4**	**0**	**189**

Notes:

p>0.1
p<0.05
P<0.1

It is important to recognize that the number of events recorded for each species does not indicate the number of individual bats. A single individual could pass by a given acoustic monitoring device multiple times in one evening, resulting in numerous “events”.

Detection of Species at Risk Bats

A total of 1167 events were recorded across all 3 monitoring stations associated with Little Brown Myotis. Our results suggest that there is a high probability that this species was present at all three of these stations during the survey period. Station BAS7 recorded 1061 events indicating the species is more active around this station, but as noted above, the number of events does not necessarily correspond to an increase in individuals. All stations had a p-value of <0.05, indicating a high probability of identification and therefore high likelihood of presence at all stations.

Seven events recorded were associated with Northern Myotis. These seven events were only recorded at station BAS6. The p-value for these events was <0.05 indicating a high probability of presence at station BAS6, but no events were recorded for stations BAS5 and BAS7.

A total of four events, recorded across three monitoring stations, were associated with Tri-colored Bat. Data at all three stations had a p-value of >0.1, indicating a low identification confidence, and therefore is considered a 'false positive'. It is unlikely that the species is present on the Site.

Overall, the acoustic monitoring stations recorded numerous bat events. The number of passes for each station are as follows. Station BAS5 (1527 events), BAS6 (451 events), and BAS7 (2452 events). Stations BAS5 and BAS7 recorded the most events. These two devices were installed closer to the Georgian trail, which could provide more open habitat for foraging and travel. Based on snag density and habitat conditions on Site, we expect the area is being used as foraging and general activities, but unlikely to be utilized for maternity roosting habitat.

An Information Gathering Form (IGF), which detailed the results of the acoustic monitoring surveys has been submitted to MECP, dated September 6, 2023 for further analysis and consideration under the ESA.

4.6 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 amount of woodland cover is high across the landscape within Ecoregion 5E. As such, the Natural Heritage Reference Manual and the PPS do protect or designate significant woodlands within Ecoregion 5E. Since this Site falls within Ecoregion 6E, woodlands that are deemed significant are protected.

The Grey County Official Plan (2019) identifies significant woodlands on Appendix B of their Official Plan, which was refined in 2017 using data acquired from the NDMNRF and airphoto

analysis. According to Appendix B of the Official Plan, the woodlands on Site and adjacent to the Site, are not deemed significant. Further, the Town of The Blue Mountains Official Plan (2016) maps significant woodlands on Appendix 1 and does not designate the woodlands on Site as significant.

As such, no significant woodlands are identified within the Grey County Official Plan (2019), the Town of the Blue Mountains Official Plan (2016), or through site investigations within or immediately adjacent to the Site.

4.7 Significant Valleylands

No significant valleylands are identified within the Grey County Official Plan (2019), the Town of the Blue Mountains Official Plan (2016), or through site investigations within or immediately adjacent to the Site.

4.8 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 proposed works. Information gathered during the background review and field investigations were compared to SWH criteria to identify SWH at the Site. A comprehensive SWH Screening table is provided in Appendix F. Details on species of conservation concern and their protected habitats are provided in Section 4.10.

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. The results of the SWH assessment are provided in the following sections. Details on species of conservation concern and their protected habitats are provided in Section 4.10.

4.8.1 Chimney Crayfish

Suspected Chimney (or Digger) Crayfish burrows were identified on Site during the July 13, 2022, field investigation. There are two terrestrial crayfish species in Southern Ontario: Chimney Crayfish and Meadow (or Devil) Crayfish. Chimney Crayfish distribution extends north to the southeastern shores of Georgian Bay and east to the northeast shore of Lake Scugog, whereas Meadow Crayfish are limited to the Niagara Peninsula as well as the northeastern shoreline of Lake Erie. Chimney Crayfish are currently ranked as “G5” – secure and common globally; “N3” – vulnerable and at moderate risk of extinction nationally; and “S4” – secure but uncommon at the provincial level. They are not identified as a Species at Risk (SAR) and are therefore not afforded specific protection under the Endangered Species Act (ESA). However, a single observed chimney can trigger Significant Wildlife Habitat designation of the habitat.

The suspected chimney features were documented within the woodland community inclusions, where seasonally wet conditions exist. It was noted that the habitat conditions were not typical for the species or within areas listed as candidate habitat criteria within The Significant Wildlife Habitat Criteria Schedules for Ecoregion 6E (Ministry of Natural Resources and Forestry, 2015). As such, supplemental investigations were completed to better understand their distribution and potential land use in the vicinity of the Site and on the larger landscape. Prior to these investigations, areas of potential habitat (i.e., existing drainages, cross culverts, ditches, and watercourses), were identified in the general Lora Bay Development area, using aerial imagery and hydrological mapping. Through this exercise, three areas of investigation were identified, including the Georgian Trail network, and two drainage features within the Lora Bay golf course.

During these supplemental investigations, Chimney Crayfish burrows were documented in all three of the areas of investigation (i.e., outside the Site boundary), and at nearly all cross culverts, drainages, or ditch networks investigated. Further, and surprisingly, they appeared to have an affinity for anthropogenic drainage features and were not limited to specific surface

elevations, and by extension groundwater / hydrological conditions, as they were found from 225 m to 185 m above sea level.

Guidance provided in the Significant Wildlife Habitat Criteria Schedules for Ecoregion 6E (Ministry of Natural Resources and Forestry, 2015) suggests the presence of a single terrestrial crayfish chimney could be considered SWH, given the rarity of suitable habitat in the province. However, the accompanying Significant Wildlife Habitat Technical Guide (Ministry of Natural Resources, 2000) outlines that in the context of the PPS, the habitat criteria and schedules are *"advisory only"* and *"may be updated as technology or techniques improve".* Taken a step further, consideration should be made to the intent of the SWH, which seeks to protect areas that are *"ecologically important in terms of features, functions, representation or amount, and contribution to the quality and diversity of an identifiable geographic area or natural heritage system".*

With these criteria in mind, local rarity should be a primarily consideration on whether the Chimney Crayfish habitat identified on Site should be considered SWH. As noted, guidance documents indicate that suitable habitat is very limited, given the hydrologic conditions required to carry out their life processes. However, supplemental investigations completed by Cambium identified Chimney Crayfish in abundance throughout the general vicinity of the Site, including highly disturbed and anthropogenically created features. Based on these findings, suitable habitat and hydrological conditions are present throughout the area and are not rare locally. As such, the habitat itself does not appear to be limiting on the landscape.

In addition, given the occupancy within adjacent drainage features and ditches, opportunity exists to mitigate potential impacts to both the species and its habitat. This could include using the stormwater drainage generated from the Site to feed existing or newly created habitat, and/or facilitate the relocation of individuals encountered during construction. These recommendations are further summarized in Section 7.0.

4.9 Fish and Fish Habitat

Based on a review of Ontario Hydro Network mapping, no mapped watercourses are identified on or adjacent to the Site. Flowing water conditions, or areas suitable to support fish, were not

observed within on the Site. As such, no direct fish habitat was noted on the Site. However, potential exists for indirect fish habitat (i.e., water balance and drainage) to the downstream network. Provided a Site-specific stormwater management plan is incorporated in the design, indirect impacts to fish and fish habitat are not anticipated.

4.10 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.

No Critical Habitat for aquatic species at risk listed under SARA was identified on or adjacent to the Site.

4.10.1 Endangered and Threatened Species

The habitat of endangered and threatened species is protected under the ESA, 2007, and associated regulations. Accordingly, a detailed evaluation of habitat type, size, and availability was completed, supplemented by targeted surveys where required, to determine whether the Site is actively used by any of the species discussed below.

The Red-headed Woodpecker is listed federally and provincially as endangered. 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. This species was not observed on/adjacent to Site during breeding bird surveys.

The treed areas and woodlands have the potential to support SAR bats. Through acoustic monitoring surveys, two species of endangered bats, Little Brown Myotis and Northern Myotis, were identified one the Site; however, maternity roosting habitat surveys and habitat-based evaluation suggest utilization is likely to be in the form of foraging and non-maternal roosting habitat behavior. Further consultation with MECP has been initiated to evaluate potential impact to these species.

4.10.2 Special Concern Species

The treed areas and woodland communities on the Site have the potential to support various special concern bird species. However, no species of special concern were identified during targeted surveys on the Site.

4.10.3 Locally Important Species

The Site provides suitable habitat for Western Chorus Frog, a federally listed species. Note that under provincial legislation (i.e., Endangered Species Act, 2007), Western Chorus Frog is not currently afforded species or habitat protection. As detailed in Section 4.5.2, this species was heard calling from adjacent lands, but not within the Site itself, during Amphibian Calling Survey #1 (April).

5.0 Impact Assessment and Mitigation Measures

As noted above, the Site is currently undeveloped and primarily consists of woodlands. The proposed development includes a residential subdivision, green space, and associated infrastructure. A Draft Site Plan is provided in Appendix B and shown on Figure 3.

The following sections address potential impacts to features identified on and adjacent to the Site that may result from the proposed development and site alteration:

- Significant Wildlife Habitat
- Habitat of Endangered and Threatened Species

No other natural heritage features protected by provincial policy were confirmed on or adjacent to the Site. Additional review and investigative details are provided in the preceding Section 3.3.10.

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

As outlined Section 4.8, one form of SWH was identified on the Site. Suspected Chimney (or Digger) Crayfish burrows were documented during field investigations, which based on the Significant Wildlife Habitat Criteria Schedules for Ecoregion 6E (Ministry of Natural Resources and Forestry, 2015), automatically triggers SWH consideration.

The Site and adjacent lands may provide habitat for special concern species, which would be considered SWH under provincial policies; however, no special concern species were documented during the investigations. Bat maternity roost surveys were completed and determined that the threshold of 10 suitable roost tree/ha was not present on the subject site,

and therefore not considered SWH for bat roosting. Amphibian breeding call surveys and breeding bird call surveys were conducted and did not identify any further SWH on Site.

5.1.1 Chimney Crayfish

Based on field investigation findings and rationale outlined herein, Cambium is of the opinion that while a single suspected Chimney Crayfish burrow can trigger SWH criteria, potential impacts to the species can be appropriately minimized to avoid impacts at the local landscape level. To mitigate impacts to the species and its habitat, the recommendations outlined in Section 7.0 should be implemented.

5.2 Habitat of Endangered and Threatened Species

A series of targeted SAR surveys were undertaken at the Site. In total, two SAR were identified as high probability of being on Site (i.e., based on p-values) generated through acoustic analysis work. Acoustic monitoring surveys indicated that Little Brown Myotis and Northern Myotis were present utilizing the Site. Maternity roosting surveys were also completed but did not identify a high density of snags that could be used for bat maternity roosting sites. As such, findings suggest utilization is likely to be in the form of foraging and non-maternal roosting habitat behavior.

No vegetation removal should occur on Site until approval has been received from MECP. Pending any additional mitigation measures, or conditions outlined by MECP, it is recommended that vegetation removal on the Site occur outside of the active roosting season for bats, which extends from April 1 to September 30 of any given year (i.e., clearing recommended between October 1st and March 30th). If any individuals are encountered, activities should cease until consultation MECP has occurred. A summary of recommendation mitigation measures, including those specific to bats, are also provided in Section 7.0.

Provided mitigation measures, including the requirement to clear trees during appropriate timing windows, we are of the opinion that impacts to the species can be adequately minimized and/or avoided. An Information Gathering Form, which detailed the results of the acoustic

monitoring surveys, has been submitted to MECP for further analysis and consideration of permitting/approvals under the ESA for these species.

5.3 Mitigation Measures and Best Management Practices

5.3.1 Erosion and Sediment Control

A comprehensive and Site-specific ESC plan should be developed concurrently with the design that includes a multi-barrier mitigation approach to sediment control. This could include the incorporation of diversion swales, cut-off swales, check dams, sediment fencing, stabilization measures, and temporary sediment basins. At minimum, and prior to any construction activities taking place, it is essential that perimeter sediment fencing be installed around the proposed work area. Fencing should be properly keyed into the ground and securely fastened to vertical supports spaced ≤ 2 m apart. Details regarding the inspection frequency and maintenance requirements of ESC controls should be clearly established prior to site alteration. Site contacts and agency reporting criteria should be outlined within the plan in the event of a ‘spill’, as defined by MECP. All sediment controls will require regular maintenance and kept in good working condition until the area has been stabilized and/or successfully revegetated.

5.3.2 Stormwater Management

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 development. Eavestrough downspouts should be directed to vegetated areas (such as lawn, or gardens) and not onto hardened surfaces, to encourage infiltration. Encouraging infiltration on the Site will prevent an influx in water quantity to the downstream environment, will limit the potential for erosion and associated off-site impacts, and will maintain the existing hydrologic condition of the Site. Stormwater management features will be designed for the proposed development to the satisfaction of the regulatory authorities and are outside of the scope of this report.

5.3.3 Encounters with Wildlife

Development and construction within natural areas can potentially result in encounters with wildlife. Care should be taken to minimize these encounters and to appropriately handle any wildlife encounter that does occur.

Erosion and sediment control measures to be implemented around the development footprint during construction (see Section 5.3.1) will act as a de facto wildlife exclusion measure, serving a dual purpose. This wildlife exclusion fencing (or appropriate heavy-duty sediment fencing without synthetic meshing), should be properly installed (i.e., trenched-in) around the development envelope, prior to site alteration, to prevent wildlife from inadvertently entering the construction area. During the construction phase, the development envelope should be routinely checked for the presence of wildlife, and any wildlife found within the enclosure should be gently relocated to the nearest natural area outside of the enclosure.

Any SAR discovered on the property will be left undisturbed as required by the ESA. If any individuals are encountered, they should be photographed and allowed time to move out of harm's way. If the animal is not able to move out of the development envelope on its own, a qualified professional should be retained to relocate the animal. Observations of SAR should be reported to MECP and the Natural Heritage Information Centre (NHIC).

Nesting birds and their nests, eggs, and young are protected under the *Migratory Birds Convention Act, 1994*. Vegetation clearing on the Site should occur outside the breeding bird season, which extends from April 1 to August 31 in the local area (as per Environment and Climate Change Canada Guidelines). Where feasible, vegetation clearing should take place outside this period. If clearing activity is planned to proceed during the breeding season, the area should be investigated for the presence of breeding birds and nests containing eggs and/or young, by a qualified professional prior to Site alteration. Nests discovered should be left undisturbed until young have fledged or the nest is determined to be inactive.

5.3.4 Invasive Species

Invasive species are becoming problematic throughout Ontario and can adversely impact our natural landscapes, including wetlands, woodlands, and watercourses. No vegetation dumping or yard waste disposal should occur within the forested areas adjacent to the Site to maintain the natural state and avoid the introduction or spread of non-native or invasive species. Landscape Plans should focus on native or non-invasive species. Additional best management practices to reduce the spread of invasive species include:

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.
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.

6.0 Policy Conformity

6.1 Provincial Policies

The proposed development is subject to the natural heritage policies of the PPS, the ESA, the Grey County Official Plan, and the Town of the Blue Mountain's Official Plan. The proposed development can comply with the pertinent criteria outlined in PPS, as outlined in Table 11, provided details outlined in Section 5.0 are considered, and the recommendations outlined in Section 7.0 are followed.

Table 11 PPS Policy Conformity Summary

Key Natural Heritage / Hydrologic Feature	On Site	On Adjacent Lands	Meets Associated Policy
Significant Wetland in Ecoregions 5E, 6E and 7E or in the Canadian Shield north of Ecoregions 5E, 6E and 7E	No	No	n/a
	Explanation: n/a		
Significant Coastal Wetland	No	No	n/a
	Explanation: n/a		
Coastal Wetlands in Ecoregions 5E, 6E and 7E1 that are not subject to policy 2.1.4(b)	No	No	n/a
	Explanation: n/a		
Fish Habitat	No	No	n/a
	Explanation: n/a		

Key Natural Heritage / Hydrologic Feature	On Site	On Adjacent Lands	Meets Associated Policy
Significant Wildlife Habitat (including habitat of special concern species)	Yes	Potentially	Yes; Policy 2.1.5(d)
	Explanation: One SWH feature (Chimney Crayfish burrows) were identified on Site. Based on the details provided herein, we are of the opinion that impacts to the species can be adequately minimized and/or avoided given the suitability of adjacent habitat and readily observed burrows throughout the local landscape. Additional details are provided in Section 5.1.1 Amphibian breeding call surveys, breeding bird surveys, and bat roost surveys, did not identify any further SWH on Site.		
Habitat of Threatened and Endangered Species	Yes	Potentially	Yes; Policy 2.1.7
	Explanation: Acoustic monitoring surveys indicated that two SAR were present on site: Little Brown Myotis and Northern Myotis. Findings suggest utilization is likely to be in the form of foraging and non-maternal roosting habitat behavior. Provided mitigation measures, including the requirement to clear trees during appropriate timing windows (i.e., October 1st to March 31st of any given year), we are of the opinion that impacts to the species can be minimized and/or avoided. An Information Gathering Form, which detailed the results of the acoustic monitoring surveys has been submitted to MECP for further analysis and consideration of permitting/approvals under the ESA before vegetation removal.		
Areas of Natural and Scientific Significance	No	No	N/A
	Explanation: n/a		
Significant Woodlands in Ecoregions 6E and 7E (excluding islands in Lake Huron and the St. Marys River)	No	No	N/A
	Explanation: No significant woodlands identified on the subject Site within regional Official Plan documents.		
	No	No	N/A

Key Natural Heritage / Hydrologic Feature	On Site	On Adjacent Lands	Meets Associated Policy
Significant Valleylands in Ecoregions 6E and 7E (excluding islands in Lake Huron and the St. Marys River)	Explanation: n/a		

7.0 Summary of Recommendations

The following recommendations are provided with respect to the proposed development:

1. All relevant approvals and permits should be obtained, prior to any site alteration activities taking place.
2. Vegetation removal or alteration should take place outside the breeding bird season (April 1 to August 31) and the active roosting period for bats (April 1 to September 30). As such, clearing activity should occur between October 1 and March 31 of any calendar year. Should any clearing be required during the breeding bird season, nest searches conducted by a qualified person must be completed within 48 hours prior to clearing activities. If nests are found, work within the area must cease until the nest has fledged, as per the federal *Migratory Birds Convention Act*. Should any clearing be required during the active roosting period for bats, please contact the Ministry of Environment, Conservation and Parks for further direction (e.g., acoustic monitoring, exit surveys) to ensure conformity with the *Endangered Species Act.*
3. The Stormwater Management Plan prepared for the Site should specifically address potential stormwater-related impacts to water quality and quantity of the surrounding features, erosion potential, and a feature-based water balance study (if required).

   An Erosion and Sediment Control (ESC) Plan that includes perimeter light duty sediment fencing should be implemented along the watercourse side of the construction area prior to the commencement of any Site alteration.

   - 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.
   - All ESC fencing should be removed following construction, once exposed soils have been revegetated.
4. Machinery or construction materials should be stored within the construction area throughout the construction period.

5. Though not identified in the field inventories, any subsequently identified SAR discovered on the property must be left undisturbed as required by the Endangered Species Act, 2007. If any SAR individuals are encountered, they should be photographed and allowed time to move out of harms way. All SAR observations should be reported to the MNRF Natural Heritage Information Centre.
6. No vegetation dumping or yard waste disposal should occur within the forested areas adjacent to the Site to maintain the natural state and avoid the introduction or spread of non-native or invasive species. Landscape Plans should focus on native or non-invasive species. Additional 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.
   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.

8.0 Closing

As outlined within this report, extensive investigations have been completed to characterize natural heritage features on and adjacent to the Site, and evaluate potential impacts in the context of pertinent planning framework and policies. Provided 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 their function identified on or adjacent to the subject Site.

Respectfully submitted,

Cambium Inc.

Camden Jermey, B.Sc., Can-CISEC
Senior Ecologist / Project Manager

Brenden Hnatiw, B.Sc., EPt
Ecological Technologist/ ISA Arborist

P:\15800 to 15899\15848-001 Great Gulf - EIS - Lora Bay Phase 4B, Thornbury\Deliverables\REPORT - EIS\Final\2023-09-06 RPT EIS Lora Bay 4B.docx

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10.0 Glossary of Terms

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

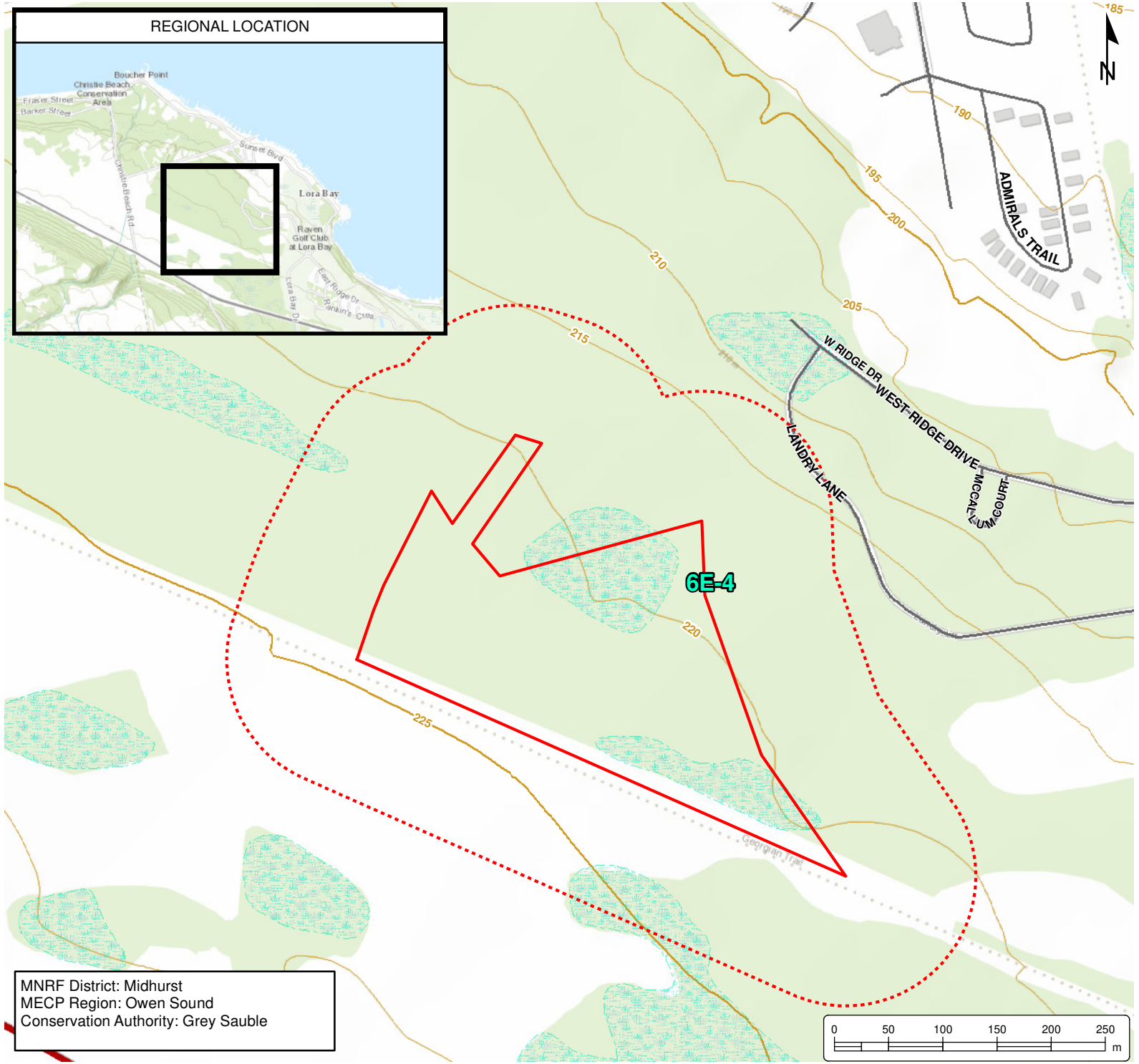
F&W: Fish and Wildlife
FA: Fisheries Act (Federal)
FEC: Forest Ecosystem Classification
FMP: Forest Management Plan
FRI: Forest Resources Inventory
FWCA: Fish and Wildlife Conservation Act
GGH: Greater Golden Horseshoe
GHP: General Habitat Protection
SWH: Significant Wildlife Habitat
SWM: Stormwater Management
THR: Threatened species
TOR: Terms of Reference
TPP: Tree Preservation Plan
WIA: Woodlands Improvement Act
WMU: Wildlife Management Unit

Appended Figures

ENVIRONMENTAL IMPACT STUDY

GREAT GULF

Phase 4B Lands, Lora Bay Development,
Town of The Blue Mountains, Ontario



LEGEND

- Highway
- Minor Road
- Contour 5m Interval (Major)
- Contour 5m Interval (Minor)
- Unevaluated Wetlands
- Ecodistrict
- Site
- 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.

CAMBIUM

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Peterborough, Ontario, K9H 1E5
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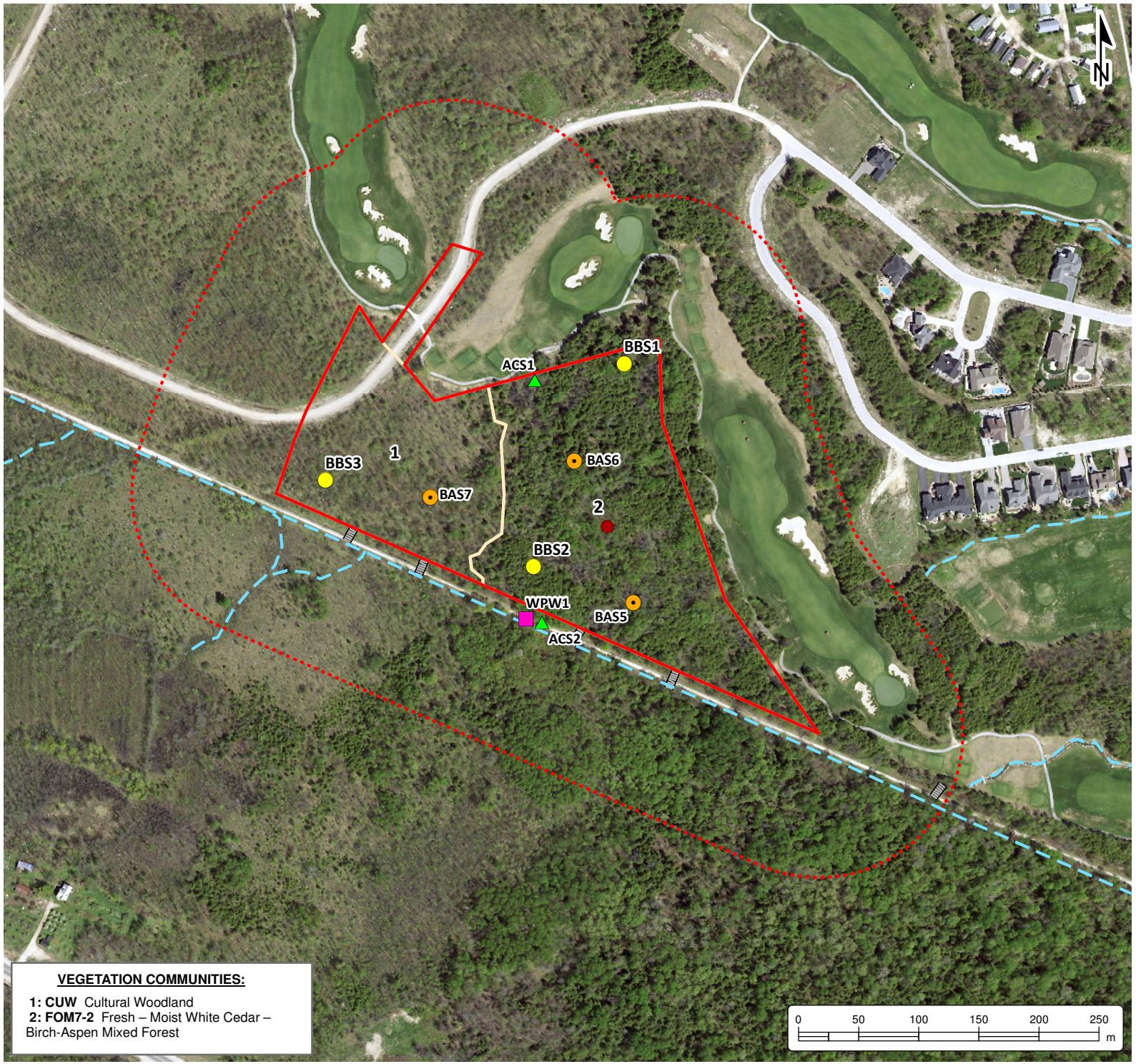
www.cambium-inc.com

LANDSCAPE SETTING AND POLICY AREAS

Project No.: 15848-001		Date: July 2023 Rev.:	
Scale: 1:5,000		Projection: NAD 1983 UTM Zone 17N	
Created by: DJL	Checked by: CPJ	Figure:	1

O:\GIS\MXDs\15800-15899\15848-001 Great Gulf - EIS - Lora Bay Phase 4B, Thornbury\2023-06-06 FIG 1 - Landscape Setting and Policy Areas.mxd



VEGETATION COMMUNITIES:

1: CUW Cultural Woodland
2: FOM7-2 Fresh – Moist White Cedar – Birch-Aspen Mixed Forest

ENVIRONMENTAL IMPACT STUDY

GREAT GULF
Phase 4B Lands, Lora Bay Development,
Town of The Blue Mountains, Ontario

LEGEND

- Amphibian Calling Survey Stations (ACS)
- Soil Point (SP)
- Bat Acoustic Station (BAS)
- Breeding Bird Survey Station (BBS)
- Eastern Whip-poor-Will Survey Station (WPW)
- Drainage Features
- Culvert
- Vegetation Communities
- Site (approximate)
- 120 m Adjacent Lands

Notes:
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NATURAL HERITAGE FEATURES AND ECOLOGICAL SURVEY STATIONS

Project No.: 15848-001		Date: July 2023 Rev.:	
Scale: 1:4,500		Projection: NAD 1983 UTM Zone 17N	
Created by: DJL	Checked by: CPJ	Figure:	2

O:\GIS\MXDs\15800-15899\15848-001 Great Gulf - EIS - Lora Bay Phase 4B, Thornbury\2023-06-08 FIG 2 - Natural Heritage Features.mxd

PRELIMINARY ENVIRONMENTAL IMPACT STUDY

GREAT GULF

Phase 4B Lands, Lora Bay Development,
Town of The Blue Mountains, Ontario

LEGEND

- 30 m Setback
- Culvert
- Watercourse
- Contour 5m Interval (Major)
- Contour 5m Interval (Minor)
- 120 m Adjacent Lands
- Site

Notes:
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- Distances on this plan are in metres and can be converted to feet by dividing by 0.3048.
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NATURAL HERITAGE CONSTRAINTS

Project No.: 15848-001		Date: July 2022	Rev.:
Scale: 1:3,500		Projection: NAD 1983 UTM Zone 17N	
Created by: DJL	Checked by: CPJ	Figure: 3	

O:\GIS\MXDs\15800-15899\15848-001 Great Gulf - EIS - Lora Bay Phase 4B, Thornbury\2023-08-11 FIG 3 - Natural Heritage Constraints.mxd

Appendix A
Correspondence

From: Danielle Leal
To: Shawn Postma; Adam Smith
Cc: Camden Jermey; Cambium Admin; Justine Lunt; "Taylor, Scott"
Subject: RE: Proposed Terms of Reference - Lora Bay Phase 5-8 (15848-001)
Date: May 24, 2023 2:05:17 PM
Attachments: image001.png
image002.png
image003.jpg
image004.png
image005.png
image006.png
image007.png
image009.png
imglsi00.png
imglsi01.png
imglsi02.png
imglsi03.png
imglsi04.png

Hi Shawn,

I just wanted to check-in regarding the proposed EIS Terms of Reference. Have you received a response from the County regarding this review?

Thank you,
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

---

From: Shawn Postma <spostma@thebluemountains.ca>
Sent: Tuesday, May 9, 2023 9:27 AM
To: Danielle Leal <Danielle.Leal@cambium-inc.com>; Adam Smith <asmith@thebluemountains.ca>
Cc: Camden Jermey <Camden.Jermey@cambium-inc.com>; Cambium Admin <file@cambium-inc.com>; Justine Lunt <j.lunt@greysauble.on.ca>; 'Taylor, Scott' <Scott.Taylor@grey.ca>
Subject: RE: Proposed Terms of Reference - Lora Bay Phase 5-8 (15848-001)

Good Morning Danielle,

Thank you for the reminder. Previously we would rely on the GSCA to advise on a proposed EIS Terms of Reference. With that no longer an option, and that the Town does not have qualified staff

in house to confirm the Terms of Reference, we will be working with the County of Grey to pool our resources as this EIS work will also influence future County applications on the Phase 5-8 Lora Bay lands. I will follow up with the County and get a response back to you shortly.

Shawn

From: Danielle Leal <Danielle.Leal@cambium-inc.com>
Sent: May 9, 2023 9:07 AM
To: Adam Smith <asmith@thebluemountains.ca>; Shawn Postma <spostma@thebluemountains.ca>
Cc: Camden Jermey <Camden.Jermey@cambium-inc.com>; Cambium Admin <file@cambium-inc.com>; Justine Lunt <j.lunt@greysauble.on.ca>
Subject: RE: Proposed Terms of Reference - Lora Bay Phase 5-8 (15848-001)

Hi Shawn,

Just following up on this request for a review of the proposed terms of reference for the EIS detailed below.

Thank you,
Danielle

Danielle Leal, B.Sc., EPt
Project Coordinator/Ecologist
Cambium - Barrie
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cambium-inc.com

Environmental | Building Sciences | Geotechnical | Construction Quality Verification

---

From: Adam Smith <asmith@thebluemountains.ca>
Sent: Friday, April 21, 2023 11:33 AM
To: Danielle Leal <Danielle.Leal@cambium-inc.com>
Cc: Camden Jermey <Camden.Jermey@cambium-inc.com>; Cambium Admin <file@cambium-inc.com>; Justine Lunt <j.lunt@greysauble.on.ca>; Shawn Postma <spostma@thebluemountains.ca>
Subject: RE: Proposed Terms of Reference - Lora Bay Phase 5-8 (15848-001)

Hi Danielle,

Apologies on the delayed response. I've cc'd Shawn Postma to confirm acceptability of the terms of

reference below.

Thanks,

Adam

Adam Smith
Director of Planning and Development Services
Town of The Blue Mountains, 32 Mill Street, P.O. Box 310, Thornbury, ON N0H 2P0
Tel: 519-599-3131 ext. 246| Fax: 519-599-2093
Email: asmith@thebluemountains.ca | Website: www.thebluemountains.ca

---

From: Danielle Leal <Danielle.Leal@cambium-inc.com>
Sent: April 13, 2023 1:47 PM
To: Adam Smith <asmith@thebluemountains.ca>
Cc: Camden Jermey <Camden.Jermey@cambium-inc.com>; Cambium Admin <file@cambium-inc.com>; Justine Lunt <j.lunt@greysauble.on.ca>
Subject: Proposed Terms of Reference - Lora Bay Phase 5-8 (15848-001)

Hello,

Cambium has been retained by Great Gulf to complete an Environmental Impact Study (EIS) Update for the property located at Phase 5-8 lands of the Lora Bay Development, in the Town of the Blue Mountains, County of Grey, Ontario (the Site), in support of a draft plan of subdivision application. The proposed Terms of Reference were scoped based on Section C9 of the Town of the Blue Mountains Official Plan. I have included Justine Lunt, with GSCA, however, as clarified in our recent communications regarding Phase 4B lands, GSCA's review will be limited to natural hazard and regulatory concerns.

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 and Grey Sauble Conservation Authority staff, as required, to determine their interest/concerns regarding the proposed works and scope of work requirements.
- Compile and review applicable background information and environmental mapping pertaining to the Site.
- Conduct one bat maternity roost survey during lead-off period and install bat acoustic monitors per MNRF protocol.
- 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 an aquatic habitat assessment, to identify and characterize features of significance (e.g., wetlands, seeps, springs, etc.) on the Site.
- Conduct three (3) amphibian breeding surveys, following the Marsh Monitoring Program

Participant's Handbook for Surveying Amphibians (Bird Studies Canada, 2008), to document frog and toad breeding activity, if suitable habitat is identified within the mapped unevaluated wetlands on Site.

- Conduct three (3) evening Whip-poor-will surveys, following the Survey Protocol for Eastern Whip-poor-will (*Antrostomus vociferous*) in Ontario (Ministry of Natural Resources and Forestry, 2013).
- Conduct bat acoustic monitoring, as per guidance in MECP SAR Bat Protocol (2022). Monitors will be installed for a minimum of 14 days in the month of June.
- Conduct three vascular plants surveys on the Site in spring, mid-summer and fall to provide a three-season inventory.
- Delineate any wetland boundaries following the Ontario Wetland Evaluation System (OWES) for Southern Ontario (Ministry of Natural Resources, 2013).
- 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.
- Record observations of wildlife occurrences and assess wildlife habitat function, including significant wildlife habitat on the Site. Any evidence of breeding, forage, shelter, or nesting sites, and/or travel corridors will be noted.
- Identify, assess, and include detailed descriptions of the natural features and functions identified on the Site and adjacent lands.
- Map key natural heritage and hydrologic features, vegetation communities, and other environmental features (watercourses, wetlands, areas of groundwater discharge, wildlife habitat, etc.) and proposed development on current, high quality aerial imagery. Any environmental feature/area mapping generated through the EIS work will be made available in GIS shapefile format.
- Provide an assessment of the potential impacts of the proposed development on natural features and their related ecological and hydrologic functions.
- Demonstrate conformity with the applicable policies and plans within the Beaver River watershed, including Provincial Policy Statement, 2020; Conservation Authorities Act and O.Reg. 151/06; County of Grey Official Plan; and the Town of The Blue Mountains Official Plan.
- Develop an appropriate avoidance, mitigation, and/or restoration strategy, to address the potential impacts identified.
- Complete one (1) final report with supporting figures for circulation for approval to the Town.

If you would like to discuss any of the details above, feel free to contact me directly.

Thank you,

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

Danielle Langlois

From: Travis Sandberg <tsandberg@thebluemountains.ca>
Sent: July 28, 2022 9:13 AM
To: Danielle Langlois
Cc: Adam Smith; Justine Lunt; Cambium Admin; Camden Jermey
Subject: RE: Terms of Reference - Lora Bay Phase 4B (15848-001)

Follow Up Flag: Follow up
Flag Status: Flagged

Good Morning Danielle,

The terms of reference appear to generally include evaluation of the environmental constraints outlined in the Town's Official Plan. It is recommended that further comment from the G.S.C.A. be received on the T.O.R., as the Town will rely on their review of the EIS through the development review process.

I trust that this is satisfactory. Do not hesitate to contact me should you require anything further from the Town.

My Best Regards,

Travis Sandberg
Intermediate Planner
Town of The Blue Mountains, 32 Mill Street, P.O. Box 310, Thornbury, ON N0H 2P0
Tel: 519-599-3131 ext. 283 | Fax: 519-599-7723
Email: tsandberg@thebluemountains.ca | Website: www.thebluemountains.ca

As part of providing accessible customer service, please let me know if you have any accommodation needs or require communication supports or alternate formats.

From: Danielle Langlois <Danielle.Langlois@cambium-inc.com>
Sent: July 26, 2022 1:49 PM
To: Adam Smith <asmith@thebluemountains.ca>; j.lunt@greysauble.on.ca
Cc: Cambium Admin <file@cambium-inc.com>; Camden Jermey <Camden.Jermey@cambium-inc.com>
Subject: Terms of Reference - Lora Bay Phase 4B (15848-001)

Good afternoon,

Cambium has been retained by Great Gulf to complete an Environmental Impact Study (EIS) Update for the property located at Phase 4B lands of the Lora Bay Development located at 9 East Ride Drive, in the Town of the Blue Mountains, County of Grey, 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 and GSC staff, as required, to determine their interest/concerns regarding the proposed works and scope of work requirements.
- Compile and review applicable background information and environmental mapping pertaining to the Site.
- Conduct one bat maternity roost survey during lead-off period per MNRF protocol.

- 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 an aquatic habitat assessment, to identify and characterize features of significance (e.g., wetlands, seeps, springs, etc.) on the Site.
- Conduct three (3) amphibian breeding surveys, following the Marsh Monitoring Program Participant's Handbook for Surveying Amphibians (Bird Studies Canada, 2008), to document frog and toad breeding activity, if suitable habitat is identified within the mapped unevaluated wetlands on Site.
- Conduct three (3) evening Whip-poor-will surveys, following the Survey Protocol for Eastern Whip-poor-will (*Antrostomus vociferous*) in Ontario (Ministry of Natural Resources and Forestry, 2013).
- Conduct three vascular plants surveys on the Site in spring, mid-summer and fall to provide a three-season inventory.
- Delineate any wetland boundaries following the Ontario Wetland Evaluation System (OWES) for Southern Ontario (Ministry of Natural Resources, 2013).
- 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.
- Record observations of wildlife occurrences and assess wildlife habitat function, including significant wildlife habitat on the Site. Any evidence of breeding, forage, shelter, or nesting sites, and/or travel corridors will be noted.
- Identify, assess, and include detailed descriptions of the natural features and functions identified on the Site and adjacent lands.
- Map key natural heritage and hydrologic features, vegetation communities, and other environmental features (watercourses, wetlands, areas of groundwater discharge, wildlife habitat, etc.) and proposed development on current, high quality aerial imagery. Any environmental feature/area mapping generated through the EIS work will be made available in GIS shapefile format.
- Provide an assessment of the potential impacts of the proposed development on natural features and their related ecological and hydrologic functions.
- Demonstrate conformity with the applicable policies and plans within the Beaver River watershed, including Provincial Policy Statement, 2020; Conservation Authorities Act and O.Reg. 151/06; County of Grey Official Plan; and the Town of The Blue Mountains Official Plan.
- Develop an appropriate avoidance, mitigation, and/or restoration strategy, to address the potential impacts identified.
- Complete one (1) final report with supporting figures for circulation for approval to the Town and GSC.

If you would like to discuss any of the details above, feel free to contact me directly.

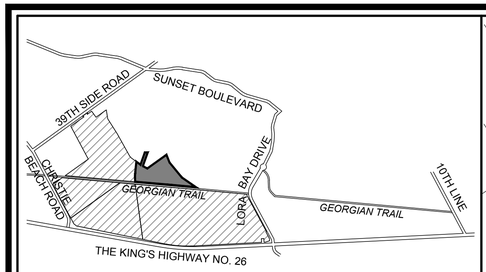
Thank you,

CAMBIUM

Danielle Langlois, B.Sc., EPt
Project Coordinator/Ecologist
Cambium - Barrie
249.359.6112
866.217.7900
cambium-inc.com

Appendix B

Conceptual Site Plans



DRAFT PLAN OF SUBDIVISION
42T-2022-XX
Lora Bay Phase 4B

PART OF BLOCK 1
REGISTERED PLAN 16M-8
(FORMERLY TOWNSHIP OF COLLINGWOOD)
TOWN OF THE BLUE MOUNTAINS
COUNTY OF GREY

OWNER'S AUTHORIZATION

I HEREBY AUTHORIZE KORSIAK URBAN PLANNING TO PREPARE AND SUBMIT THIS DRAFT PLAN OF SUBDIVISION TO THE COUNTY OF GREY FOR APPROVAL.

SIGNED _____ DATE August 4, 2022
Kathleen Schofield, President
NG Lora Bay Limited

SIGNED _____ DATE August 4, 2022
Michael Kirchmair, Treasurer
NG Lora Bay Limited

SURVEYOR'S CERTIFICATE

I HEREBY CERTIFY THAT THE BOUNDARIES OF THE LANDS TO BE SUBDIVIDED AS SHOWN ON THIS PLAN AND THEIR RELATIONSHIP TO ADJACENT LANDS ARE CORRECTLY AND ACCURATELY SHOWN.

SIGNED _____ DATE August 4, 2022
Paul R. Thomsen B.Sc., O.L.S
Zubek, Emo, Patten & Thomsen LTD.
Ontario Land Surveyors
200 Mountain Road, Unit 4
Collingwood, Ontario L9Y 4V5

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

A) SHOWN ON PLAN
B) SHOWN ON PLAN
C) SHOWN ON PLAN
D) SHOWN ON PLAN
E) SHOWN ON PLAN
F) SHOWN ON PLAN
G) SHOWN ON PLAN
H) MUNICIPAL AND PIPED WATER TO BE PROVIDED
I) SANDY SILT
J) SHOWN ON PLAN
K) SANITARY AND STORM SEWERS TO BE PROVIDED
L) SHOWN ON PLAN

LAND USE SCHEDULE

Land Use	Lots/Blocks	Lot / Block Total	Area (ha)	Units
△ Single Detached (18.3 m)	1-3, 8-17, 20, 21, 24, 25, 28-39, 42, 43	31	2.11	31
○ Single Detached (15.2 m)	4-7, 40, 41, 44, 45	8	0.51	8
⬠ Single Detached (21.3 m)	18, 19, 22, 23, 26, 27	6	0.68	6
Rowhouse (7.60 m)	46-49	4	0.44	13
Park	50, 51	2	0.85	
Servicing Block	52, 53	2	0.09	
20 m ROW (706 m)			1.44	
22 m ROW (106 m)			0.23	
Totals	1-53	53	6.35	58

DATE [D.M.Y]	REVISION	DWG	BY
03/08/2023	Second Submission	B	KC
04/08/2022	Submission	A	KC

NOTES:
- Pavement illustration is diagrammatic
- Local road/local daylight triangle = 6m x 6m

GREAT GULF GROUP OF COMPANIES

SCALE 1:1000 | August 3, 2023 | B
DRAWN BY: KC | CHECKED BY: CR

KORSIAK Urban Planning
206-277 Lakeshore Road East
Oakville, Ontario L6J 1H9
T: 905-257-0227
info@korsiak.com

S:\Korsiak & Company\GREAT GULF\Lora Bay\Phase 4B\4B - Draft Plan\2023-08\Lora Bay Phase 4B Draft Plan - Aug 03 23_kc.dwg

Appendix C

Species of Conservation Concern Screening

APPENDIX: Species of Conservation Concern - Grey County

COMMON NAME	SCIENTIFIC NAME	Federal SARA	Provincial SARO	Provincial S-RANK	SPECIES DESCRIPTION AND HABITAT REQUIREMENTS	SUITABLE HABITAT	SPECIES OBSERVATIONS	ASSESSMENT
Birds								
Bald Eagle	*Haliaeetus leucocephalus*	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	Known to occur in the general area	No further consideration required
Bank Swallow	*Riparia riparia*	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	Known to occur in the general area	No further consideration required
Barn Swallow	*Hirundo rustica*	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).	No	Known to occur in the general area	No further consideration required
Black Tern	*Chlidonias niger*	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	Known to occur in the general area	No further consideration required
Bobolink	*Dolichonyx oryzivorus*	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	Known to occur in the general area	No further consideration required
Canada Warbler	*Cardellina canadensis*	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	Known to occur in the general area	No further consideration required
Chimney Swift	*Chaetura pelagica*	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	Known to occur in the general area	No further consideration required
Common Nighthawk	*Chordeiles minor*	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).	Yes: on-site and adjacent lands	Confirmed absent through targeted surveys	No further consideration required
Eastern Meadowlark	*Sturnella magna*	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	Known to occur in the general area	No further consideration required
Eastern Whip-poor-will	*Antrostomus vociferus*	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	*Contopus virens*	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 absent through targeted surveys	No further consideration required
Golden Winged Warbler	*Vermivora chrysoptera*	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: adjacent lands only	Known to occur in the general area	No further consideration required
Grasshopper Sparrow	*Ammodramus savannarum*	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	Known to occur in the general area	No further consideration required
Henslow's Sparrow	*Ammodramus henslowii*	END	END	SHB	Henslow's Sparrow is a small, secretive bird with chestnut brown wings, a patterned olive-green head, and a black and brown streaked back. It is found in large fields with tall grass, a dense litter layer, and standing dead vegetation. They use undisturbed areas with dense living grasses, avoiding areas that have been grazed or burned. As a ground nester, continuous areas of dense, tall grasslands that have not been invaded by shrubs are required to support its population (1).	No	Known to occur in the general area	No further consideration required

Least Bittern	*Ixobrychus exilis*	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	Known to occur in the general area	No further consideration required
Loggerhead Shrike	*Lanius ludovicianus*	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	Known to occur in the general area	No further consideration required
Louisiana Waterthrush	*Parkesia motacilla*	THR	THR	S3B	The Louisiana Waterthrush is a large wood warbler with brown upper parts, cream-coloured breasts and flanks with dark streaks, and a long bill. It is typically found along fast moving streams and creeks, in deeply forested ravines. It nests along stream banks, in the roots of fallen trees, and under logs and other large woody debris. Although less frequently, the Louisiana Waterthrush has been known to inhabit heavily wooded, deciduous swamps and open water areas, In Ontario, its breeding ground is mostly found in woodlands along Lake Erie and along the Niagara Escarpment (1).	No	Known to occur in the general area	No further consideration required
Olive-sided Flycatcher	*Contopus cooperi*	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	Known to occur in the general area	No further consideration required
Peregrine Falcon	*Falco peregrinus*	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	Known to occur in the general area	No further consideration required
Red-headed Woodpecker	*Melanerpes erythrocephalus*	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 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).	Yes: on-site and adjacent lands	Confirmed absent through targeted surveys	No further consideration required
Short-eared owl	*Asio flammeus*	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	Known to occur in the general area	No further consideration required
Wood Thrush	*Hylocichla mustelina*	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	*Coturnicops noveboracensis*	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	Known to occur in the general area	No further consideration required
Fish								
American Eel	*Anguilla rostrata*	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	*Myoxocephalus thompsonii*	SC	-	S1	The Deepwater Sculpin grows tup 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
Lake Sturgeon	*Acipenser fulvescens*	No Status	END	S2	The Lake Sturgeon, a large freshwater fish, has an extended snout with four whisker-like organs hanging near the mouth and is dark to light brown or grey on its back and sides with a lighter belly. In Ontario, this fish is found in the rivers of the Hudson Bay Basin, the Great Lakes basin, and their connecting waterways. Lake Sturgeon's live almost exclusively in freshwater lakes and rivers with soft bottoms of mud, sand or gravel and are usually found at depths of 5 to 20 m. They spawn in relatively shallow, fast-flowing water or if available deeper water habitat as well (1).	No	Known to occur in the general area	No further consideration required
Nothern Brook Lamprey	*Ichthyomyzon fossor*	SC	SC	S3	The Northern Brook Lamprey is a small, elongate fish growing up to 16 cm long with a round, jawless mouth, sevel gill openings, and no pectoral or pelvic fins. This species has a larval stage, in which they require soft substrates for burrowing and typically use slow-moving portions of coolwater streams, and an adult stage, in which they are more typically associated with fast flowing ripples in coolwater strams with rock or gravel bottoms (1).	No	Known to occur in the general area	No further consideration required

Northern Sunfish (Great Lakes - Upper St. Lawrence population)	*Lepomis peltastes*	SC	SC	S3	The Northern Sunfish is a small (about 130 mm long), typical looking member of the sunfish family (Centrarchidae). It has a deep, laterally compressed and olive coloured body with bright blue and red markings. In Ontario, the Northern Sunfish lives in shallow vegetated areas of quiet, slow flowing rivers and streams, as well as warm lakes and ponds, with sandy banks or rocky bottoms. Northern Sunfish prefer to be near aquatic vegetation where they can avoid strong currents. The Great Lakes - Upper St. Lawrence Populations are found throughout southern Ontario including waters flowing into Lake Huron, Georgian Bay, Lake St. Clair, Lake Erie and Lake Ontario, as well as rivers and small lakes in eastern Ontario (1).	No	Known to occur in the general area	No further consideration required
Redside Dace	*Clinostomus elongatus*	END	END	S2	The Redside Dace is a small-bodied fish that is a member of the Minnow family. It averages about 75 milimeters in length and has a flattened body shape. Adults are colourful, with a red stripe on the front half of the body and a yellow stripe that extends almost the full length of the fish. Redside Dace prefer small streams and headwater areas with a gravel bottom. Overhanging grasses and shrubs provide ideal habitat as this species is adapted to jumping up to 10 cm out of the water to feed on insects (2).	No	Known to occur in the general area	No further consideration required
Silver Lamprey (Great Lakes - Upper St. Lawrence River population)	*Ichthyomyzon unicuspis*	SC	SC	S3	The Silver Lamprey is an eel-shaped fish growing from 9 to 39 cm long, with a sucking disc mouth and no jaws or paired fins. They can be differed from other lamprey species based on fin shapes and teeth arrangements. Their habitat requirements include clear water, the availability of fish hosts, and relatively clean beds of sand or organic debris (1).	No	Known to occur in the general area	No further consideration required
Herptiles								
Midland Painted Turtle	*Chrysemys picta marginata*	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	*Graptemys geographica*	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	*Chelydra serpentina*	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	*Clemmys guttata*	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	*Glyptemys insculpta*	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
Eastern Milksnake	*Lampropeltis triangulum*	SC	NAR	S4	The Eastern Milksnake's colouration is grey or tan with reddish alternating blotches otlines in black along its back and sides (5). It has recently been delisted from being a species at risk in Ontario (1). This species tends to use open habitats such as rocky outcrops, fields and forest edges. The preferred prey of milksnakes are mice, small rodents, and ground nesting birds which are amply found in and surrounding agricultural outbuildings. The milksnake is secretive and is not likely to be encountered during the day or at night while hunting (5).	No	Known to occur in the general area	No further consideration required
Eastern Ribbonsnake	*Thamnophis sauritus*	SC	SC	S4	The Eastern Ribbonsnake is slender with three bright yellow stripes running down its back and sides and a white crescent in front of each eye. This snake is usually found close to water as they are strong swimmers, often fleeing predators by diving into shallow water. It prefers wetland habitats where its prey species, frogs and small fish, are abundant. Over winter, they congregate in underground burrows or rock crevices to hibernate (1).	No	Known to occur in the general area	No further consideration required
Massasauga Rattlesnake (Great Lakes - St. Lawrence population)	*Sistrurus catenatus*	THR	THR	S3	The Massasauga, Ontario's venomous snake, can be identified by its rattle, vertical pupils, and triangular head. It inhabits a range of different habitats throughout Ontario, including tall grass prairies, marshes, bogs, shorelines, forests, and alvars. Within these habitats they require open areas to warm themselves in the sun (1).	No	Known to occur in the general area	No further consideration required
Jefferson Salamander	*Ambystoma jeffersonianum*	END	END	S2	The Jefferson Salamander is black or grey-brown with bluish spots. Adults live in moist, loose soil, under logs, or in leaf litter, often in ponds surrounding forests. They spend most of their time underground in burrows or under rocks and logs so are most likely to be spotted in early spring as they travel to breed. Their eggs are laid in clumps attached to underwater vegetation. In Ontario, it is mainly found along the Niagara Escarpment (1).	No	Known to occur in the general area	No further consideration required
Western Chorus Frog	*Pseudacris triseriata*	THR	-	S3	The Western Chorus Frog is small with a dark stripe running through its eye and a light stripe underneath (5). It is primarily a lowland terrestrial species that requires access to terrestrial and aquatic habitats in close proximity to one another. Relying on marshes and wooded wetlands adjacent to forested habitats, this species also requires isolated, predator free pools for breeding. Temporary pools, such as vernal pools in wooded areas, are preferred. This species hibernates terrestrially in a variety of environments, including leaf litter, wood debris, and vacant animal burrows (2).	Yes: adjacent lands only	Potential habitat on adjacent lands through targeted surveys	Consideration required under local/regional conservation objectives
Invertebrates								
Monarch Butterfly	*Danaus plexippus*	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
West Virginia White	*Pieris virginiensis*	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	*Bombus terricola*	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).	No	Known to occur in the general area	No further consideration required
Rainbow Mussel	*Villosa iris*	SC	SC		The Rainbow mussel shell exterior is yellow, green, or brown with many brokedn dark green lines while its interior is iridescent coloured. It has an elongated oval shape and grows up to 8 cm long. This species prefers small or medium rivers with a moderate to strong current. The Rainbow mussel is typically found in or near riffle areas in shallow (<1 m) water with either asandy, rocky, or gravel bottom (2).	No	Known to occur in the general area	No further consideration required
Mammals								
Tri-colored Bat	*Perimyotis subflavus*	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	Known to occur in the general area	No further consideration required
Eastern Small-footed Myotis	*Myotis leibii*	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).	No	Known to occur in the general area	No further consideration required
Little Brown Myotis	*Myotis lucifugus*	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 habitat on-site through targeted surveys	Consideration required under the ESA
Northern Myotis	*Myotis septentrionalis*	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 habitat on-site through targeted surveys	Consideration required under the ESA
Trees, plants, fungi and lichens								
American Ginseng	*Panax quinquefolius*	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	Known to occur in the general area	No further consideration required
American Hart's-tongue Fern	*Asplenium scolopendrium*	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 occurences are in maple-beech forests (1).	No	Known to occur in the general area	No further consideration required
Black Ash	*Fraxinus nigra*	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	Known to occur in the general area	No further consideration required
Butternut	*Juglans cinerea*	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).	No	Known to occur in the general area	No further consideration required
Eastern Prairie Fringed-orchid	*Platanthera leucophaea*	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	Known to occur in the general area	No further consideration required
Tuberous Indian-plantain	*Arnoglossum plantagineum*	SC	SC	S1	The Tuberous Indian-plantain, a member of the aster family, grows as a flat rosette of leaves which grow a tall flower stalk (up to 1.8 m) with a large, flat-topped closter of white flowers. The species grows in open areas within wet, calciumm-rich meadows or shoreline fens (1).	No	Known to occur in the general area	No further consideration required

References

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2. Government of Canada. (2021). Species at Risk Public Registry. Retrieved from https://species-registry.canada.ca/index-en.html#/species?ranges=5&sortBy=commonNameSort&sortDirection=asc&pageSize=10
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6. University of Michigan Museum of Zoology. (2004).
7. Ontario Breeding Bird Atlas. (2020).
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Notes

Species receives protection under the Endangered Species Act (ESA) and considerdation is required.

Species recieves protection through the Signfiicant Wildlife Habitat designations under the Provincial Policy Statement.

Species protected through other conservation objectives such as the Federal Species at Risk Act.

Appendix D

Vegetation Communities and Species List

VEGETATION COMMUNITY CLASSIFICATION: CUW

COMMUNITY #: 1

LOCATION: Lora Bay

COORDINATES: 44.58512940444052, -80.50507304258645

PROJECT NUMBER: 15848-002

DATE: September 29, 2022, May 4 and June 28, 2023

PROJECT MANAGER: Camden Jermey

FIELD STAFF: Brenden Hnatiw

FIELD SHEET – Vegetation Species List

Common Name	Scientific Name	CoW	CoC	SARA	SARO	S-Rank
Alternate-leaved Dogwood	*Cornus alternifolia*	3	6			S5
Annual Fleabane	*Erigeron annuus*	3	0			S5
Balsam Poplar	*Populus balsamifera*	-3	4			S5
Black Knapweed	*Centaurea nigra*	5				SNA
Bracken Fern	*Pteridium aquilinum*	3	2			S5
Bull Thistle	*Cirsium vulgare*	3				SNA
Canada Avens	*Geum canadense*	0	3			S5
Canada Goldenrod	*Solidago canadensis*	3	1			S5
Canada Goldenrod	*Solidago canadensis*	3	1			S5
Canada Mint	*Mentha canadensis*	-3	3			S5
Canada Thistle	*Cirsium arvense*	3				SNA
Canada Wildrye	*Elymus canadensis*	3	8			S5
Coltsfoot	*Tussilago farfara*	3				SNA
Common Apple	*Malus pumila*	5	0			SNA
Common Buttercup	*Ranunculus acris*	0	0			SNA
Common Marsh Bedstraw	*Galium palustre*	-5	5			S5
Common Self-heal	*Prunella vulgaris*	0	0			S5
Common Speedwell	*Veronica officinalis*	5				SNA
Common Timothy	*Phleum pratense*	3	0			SNA
Deptford Pink	*Dianthus armeria ssp. armeria*	5				SNA
Devil's Beggarticks	*Bidens frondosa*	-3	3			S5
Eastern Hop-hornbeam	*Ostrya virginiana*	3	4			S5
Eastern Prickly Gooseberry	*Ribes cynosbati*	3	4			S5
Eastern White Cedar	*Thuja occidentalis*	-3	4			S5
Elecampane	*Inula helenium*	3				SNA
English Hawthorn	*Crataegus monogyna*	3	0			SNA
European Buckthorn	*Rhamnus cathartica*	0				SNA

VEGETATION COMMUNITY CLASSIFICATION: CUW

COMMUNITY #: 1

LOCATION: Lora Bay

COORDINATES: 44.58512940444052, -80.50507304258645

PROJECT NUMBER: 15848-002

DATE: September 29, 2022, May 4 and June 28, 2023

PROJECT MANAGER: Camden Jermey

FIELD STAFF: Brenden Hnatiw

FIELD SHEET – Vegetation Species List

Grass-leaved Goldenrod	*Euthamia graminifolia*	0	2			S5
Hawthorn spp	*Crataegus spp*					
Heart-leaved Aster	*Symphyotrichum cordifolium*	5	5			S5
Hooked Agrimony	*Agrimonia gryposepala*	3	2			S5
Long-stalked Sedge	*Carex pedunculata*	3	5			S5
Marginal Wood Fern	*Dryopteris marginalis*	3	5			S5
Meadow Hawkweed	*Pilosella caespitosa*	5	0			SNA
Multiflora Rose	*Rosa multiflora*	3				SNA
New England Aster	*Symphyotrichum novae-angliae*	-3	2			S5
Norway Maple	*Acer platanoides*	5	0			SNA
Orchard Grass	*Dactylis glomerata*	3	0			SNA
Paper Birch	*Betula papyrifera*	3	2			S5
Poison Ivy	*Toxicodendron radicans*	0	2			S5
Purple Crown-vetch	*Securigera varia*	5				SNA
Red Ash	*Fraxinus pennsylvanica*	-3	3			S4
Riverbank Grape	*Vitis riparia*	0	0			S5
Spinulose Wood Fern	*Dryopteris carthusiana*	-3	5			S5
Spreading Dogbane	*Apocynum androsaemifolium*	5	3			S5
Staghorn Sumac	*Rhus typhina*	3	1			S5
Stinging Nettle	*Urtica dioica*	0	2			S5
Trembling Aspen	*Populus tremuloides*	0	2			S5
Tufted Vetch	*Vicia cracca*	5	0			SNA
Virginia Creeper	*Parthenocissus quinquefolia*	3	6			S4?
White Ash	*Fraxinus americana*	3	4			S4
White Clover	*Trifolium repens*	3	0			SNA
White Elm	*Ulmus americana*	-3	3			S5
White Sweet-clover	*Melilotus albus*	3	0			SNA

VEGETATION COMMUNITY CLASSIFICATION: CUW | COMMUNITY #: 1 | LOCATION: Lora Bay | COORDINATES: 44.58512940444052, -80.50507304258645

PROJECT NUMBER: 15848-002 | DATE: September 29, 2022, May 4 and June 28, 2023 | PROJECT MANAGER: Camden Jermey | FIELD STAFF: Brenden Hnatiw

FIELD SHEET – Vegetation Species List

Woodland Horsetail	*Equisetum sylvaticum*	-3	7			S5
Woodland Strawberry	*Fragaria vesca*	3	4			S5
Yellow Avens	*Geum aleppicum*	0	2			S5

September 29, 2023

VEGETATION COMMUNITY CLASSIFICATION: CUW

COMMUNITY #: 1

LOCATION: Lora Bay

COORDINATES: 44.58512940444052, -80.50507304258645

PROJECT NUMBER: 15848-002

DATE: September 29, 2022, May 4 and June 28, 2023

PROJECT MANAGER: Camden Jermey

FIELD STAFF: Brenden Hnatiw

FIELD SHEET – Vegetation Species List

May 04, 2023

VEGETATION COMMUNITY CLASSIFICATION: CUW

COMMUNITY #: 1

LOCATION: Lora Bay

COORDINATES: 44.58512940444052, -80.50507304258645

PROJECT NUMBER: 15848-002

DATE: September 29, 2022, May 4 and June 28, 2023

PROJECT MANAGER: Camden Jermey

FIELD STAFF: Brenden Hnatiw

FIELD SHEET – Vegetation Species List

June 28, 2023

VEGETATION COMMUNITY CLASSIFICATION: FOM7-2 COMMUNITY #: 2 LOCATION: Lora Bay COORDINATES: 44.58037703298032, -80.50442419946194

PROJECT NUMBER: 15848-002 DATE: September 29, 2022, May 4 and June 28, 2023 PROJECT MANAGER: Camden Jermey FIELD STAFF: Brenden Hnatiw

FIELD SHEET – Vegetation Species List

Common Name	Scientific Name	CoW	CoC	SARA	SARO	S-Rank
Alternate-leaved Dogwood	Cornus alternifolia	3	6			S5
American Black Currant	Ribes americanum	-3	4			S5
Balsam Poplar	Populus balsamifera	-3	4			S5
Basswood	Tilia americana	3	4			S5
Bracken Fern	Pteridium aquilinum	3	2			S5
Broad-leaved Enchanter's Nightshade	Circaea canadensis	3	2			S5
Broad-leaved Helleborine	Epipactis helleborine	3				SNA
Canada Goldenrod	Solidago canadensis var. canadensis	3	1			S5
Canada Thistle	Cirsium arvense	3				SNA
Chokecherry	Prunus virginiana var. virginiana	3	2			S5
Common Apple	Malus pumila	5				SNA
Common Barberry	Berberis vulgaris	3				SNA
Common Buttercup	Ranunculus acris	0	0			SNA
Common Dandelion	Taraxacum officinale	3	0			SNA
Common Lady Fern	Athyrium filix-femina	0	4			S5
Common Speedwell	Veronica officinalis	5	0			SNA
Eastern Hemlock	Tsuga canadensis	3	7			S5
Eastern Hop-hornbeam	Ostrya virginiana	3	4			S5
Eastern Prickly Gooseberry	Ribes cynosbati	3	4			S5
Eastern White Cedar	Thuja occidentalis	-3	4			S5
European Buckthorn	Rhamnus cathartica	0				SNA
Grass-leaved Goldenrod	Euthamia graminifolia	0	2			S5
Heart-leaved Aster	Symphyotrichum cordifolium	5	5			S5
Herb-Robert	Geranium robertianum	3	2			S5
Highbush Cranberry	Viburnum opulus ssp. Trilobum	-3	5			S5

VEGETATION COMMUNITY CLASSIFICATION: FOM7-2 COMMUNITY #: 2 LOCATION: Lora Bay COORDINATES: 44.58037703298032, -80.50442419946194

PROJECT NUMBER: 15848-002 DATE: September 29, 2022, May 4 and June 28, 2023 PROJECT MANAGER: Camden Jermey FIELD STAFF: Brenden Hnatiw

FIELD SHEET – Vegetation Species List

Hooked Agrimony	Agrimonia gryposepala	3	2			S5
Jack-in-the-pulpit	Arisaema triphyllum	-3	5			S5
Long-stalked Sedge	Carex pedunculata	3	5			S5
Marginal Wood Fern	Dryopteris marginalis	3	5			S5
Meadow Hawkweed	Pilosella caespitosa	5	0			SNA
New England Aster	Symphyotrichum novae-angliae	-3	2			S5
Orchard Grass	Dactylis glomerata	3	0			SNA
Panicled Aster	Symphyotrichum lanceolatum	-3	3			S5
Paper Birch	Betula papyrifera	3	2			S5
Poison Ivy	Toxicodendron radicans	0	2			S5
Red Ash	Fraxinus pennsylvanica	-3	3			S4
Red Raspberry	Rubus idaeus	3	2			S5
Riverbank Grape	Vitis riparia	0	0			S5
Soapberry	Shepherdia canadensis	5	7			S5
Spinulose Wood Fern	Dryopteris carthusiana	-3	5			S5
Sugar Maple	Acer saccharum	3	4			S5
Trembling Aspen	Populus tremuloides	0	2			S5
White Ash	Fraxinus americana	3	4			S4
White Elm	Ulmus americana	-3	3			S5
Wild Basil	Clinopodium vulgare	5	4			S5
Wild Carrot	Daucus carota	5				SNA
Woodland Sedge	Carex blanda	0	3			S5
Woodland Strawberry	Fragaria vesca	3	4			S5

VEGETATION COMMUNITY CLASSIFICATION: FOM7-2

COMMUNITY #: 2

LOCATION: Lora Bay

COORDINATES: 44.58037703298032, -80.50442419946194

PROJECT NUMBER: 15848-002

DATE: September 29, 2022, May 4 and June 28, 2023

PROJECT MANAGER: Camden Jermey

FIELD STAFF: Brenden Hnatiw

FIELD SHEET – Vegetation Species List

September 29, 20230

VEGETATION COMMUNITY CLASSIFICATION: FOM7-2

COMMUNITY #: 2

LOCATION: Lora Bay

COORDINATES: 44.58037703298032, -80.50442419946194

PROJECT NUMBER: 15848-002

DATE: September 29, 2022, May 4 and June 28, 2023

PROJECT MANAGER: Camden Jermey

FIELD STAFF: Brenden Hnatiw

FIELD SHEET – Vegetation Species List

May 04, 2023

VEGETATION COMMUNITY CLASSIFICATION: FOM7-2

COMMUNITY #: 2

LOCATION: Lora Bay

COORDINATES: 44.58037703298032, -80.50442419946194

PROJECT NUMBER: 15848-002

DATE: September 29, 2022, May 4 and June 28, 2023

PROJECT MANAGER: Camden Jermey

FIELD STAFF: Brenden Hnatiw

FIELD SHEET – Vegetation Species List

June 28, 2023

Appendix E

Bird Species List

VEGETATION COMMUNITY CLASSIFICATION: FOM7-2

LOCATION: Lora Bay

COORDINATES: 44.58316942, -80.50085904

POINT COUNT #: 1

PROJECT NUMBER: 15848-002

DATES: June 11, 2023 July 5, 2023

PROJECT MANAGER: Camden Jermey

FIELD STAFF: Kayla Vizza Mak Soden

FIELD SHEET – Bird Species List

June 11, 2023

Common Name	Scientific Name	Family	SARA	SARO	S-Rank	Breeding Evidence
American Crow	Corvus brachyrhynchos	Corvidae	-	-	S5B	H
American Goldfinch	*Spinus tristis*	Fringillidae	-	-	S5B	X
American Redstart	*Setophaga ruticilla*	Parulidae	-	-	S5B	S
American Robin	*Turdus migratorius*	Turdidae	-	-	S5B	S
Black-capped Chickadee	*Poecile atricapillus*	Paridae	-	-	S5	H
Brown-headed Cowbird	*Molothrus ater*	Icteridae	-	-	S5B	S
House Wren	*Troglodytes aedon*	Troglodytidae	-	-	S5B	S
Killdeer	*Charadrius vociferus*	Charadriidae	-	-	S5B	X
Pileated Woodpecker	*Dryocopus pileatus*	Picidae	-	-	S4S5	S
Red-eyed Vireo	*Vireo olivaceus*	Vireonidae	-	-	S5B	S
Ring-billed Gull	*Larus delawarensis*	Laridae	-	-	S5B	X
Song Sparrow	*Melospiza melodia*	Passerellidae	-	-	S5B	S

July 5, 2023

Common Name	Scientific Name	Family	SARA	SARO	S-Rank	Breeding Evidence
American Robin	*Turdus migratorius*	Turdidae	-	-	S5B	T
Black-capped Chickadee	*Poecile atricapillus*	Paridae	-	-	S5	T
Blue Jay	*Cyanocitta cristata*	Corvidae	-	-		P

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

VEGETATION COMMUNITY CLASSIFICATION:	FOM7-2	LOCATION:	Lora Bay	COORDINATES:	44.58316942, -80.50085904	POINT COUNT #:	1
PROJECT NUMBER:	15848-002	DATES:	June 11, 2023 July 5, 2023	PROJECT MANAGER:	Camden Jermey	FIELD STAFF:	Kayla Vizza Mak Soden

FIELD SHEET – Bird Species List

VEGETATION COMMUNITY PHOTOS

VEGETATION COMMUNITY CLASSIFICATION: FOM7-2 LOCATION: Lora Bay COORDINATES: 44.58163021, -80.50178767 POINT COUNT #: 2

PROJECT NUMBER: 15848-002 DATES: June 11, 2023 July 5, 2023 PROJECT MANAGER: Camden Jermey FIELD STAFF: Kayla Vizza Mak Soden

FIELD SHEET – Bird Species List

June 11, 2023

Common Name	Scientific Name	Family	SARA	SARO	S-Rank	Breeding Evidence
American Goldfinch	*Carduelis tristis*	Fringillidae			S5B	X
American Redstart	*Setophaga ruticilla*	Parulidae			S5B	S
American Robin	*Turdus migratorius*	Turdidae	-	-	S5B	S
Black-capped Chickadee	*Poecile atricapillus*	Paridae	-	-	S5	H
Black-and-white Warbler	*Mniotilta varia*	Parulidae			S5B	S
Blackburnian Warbler	*Setophaga fusca*	Parulidae			S5B	
Red-eyed Vireo	*Vireo olivaceus*	Vireonidae			S5B	H
Ruffed Grouse	*Bonasa umbellus*	Phasianidae			S5	A
Song Sparrow	*Melospiza melodia*	Passerellidae	-	-	S5B	H

July 5, 2023

Common Name	Scientific Name	Family	SARA	SARO	S-Rank	Breeding Evidence
American Robin	*Turdus migratorius*	Turdidae	-	-	S5B	T
Black-and-white Warbler	*Mniotilta varia*	Parulidae	-	-	S5B	T
Black-capped Chickadee	*Poecile atricapillus*	Paridae	-	-	S5	T
Blue Jay	*Cyanocitta cristata*	Corvidae			S5	H
Common Grackle	*Quiscalus quiscula*	Icteridae			S5B	H
Red-eyed Vireo	*Vireo olivaceus*	Vireonidae			S5B	T
Song Sparrow	*Melospiza melodia*	Passerellidae			S5B	T

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

VEGETATION COMMUNITY CLASSIFICATION: CUW

LOCATION: Lora Bay

COORDINATES: 44.58220244, -80.50399689

POINT COUNT #: 3

PROJECT NUMBER: 15848-002

DATES: June 11, 2023 July 5, 2023

PROJECT MANAGER: Camden Jermey

FIELD STAFF: Kayla Vizza Mak Soden

FIELD SHEET – Bird Species List

June 11, 2023

Common Name	Scientific Name	Family	SARA	SARO	S-Rank	Breeding Evidence
American Crow	*Corvus brachyrhynchos*	Corvidae	-	-	S5B	H
American Robin	*Turdus migratorius*	Turdidae	-	-	S5B	S
Black-capped Chickadee	*Poecile atricapillus*	Paridae	-	-	S5	S
Indigo Bunting	*Passerina cyanea*	Cardinalidae	-	-	S5B	S
Red-eyed Vireo	*Vireo olivaceus*	Vireonidae	-	-	S5B	S
Ring-billed Gull	*Larus delawarensis*	Laridae	-	-	S5B	X
Ruffed Grouse	*Bonasa umbellus*	Phasianidae	-	-	S5	A
Song Sparrow	*Melospiza melodia*	Passerellidae	-	-	S5B	S
White-throated Sparrow	*Zonotrichia albicollis*	Passerellidae	-	-	S5B	S

July 5, 2023

Common Name	Scientific Name	Family	SARA	SARO	S-Rank	Breeding Evidence
American Redstart	*Setophaga ruticilla*	Parulidae	-	-	S5B	S
House Wren	*Troglodytes aedon*	Troglodytidae	-	-	S5B	A
Northern Cardinal	*Cardinalis cardinalis*	Cardinalidae	-	-	S5	S
Red-eyed Vireo	*Vireo olivaceus*	Vireonidae	-	-	S5B	T
Song Sparrow	*Melospiza melodia*	Passerellidae	-	-	S5B	T

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

VEGETATION COMMUNITY CLASSIFICATION:	CUW	LOCATION:	Lora Bay	COORDINATES:	44.58220244, -80.50399689	POINT COUNT #:	3
PROJECT NUMBER:	15848-002	DATES:	June 11, 2023 July 5, 2023	PROJECT MANAGER:	Camden Jermey	FIELD STAFF:	Kayla Vizza Mak Soden

FIELD SHEET – Bird Species List

VEGETATION COMMUNITY PHOTOS

Appendix F

Significant Wildlife Habitat Assessment

SWH Type	Associated Species	Associated ELC Ecosites	Habitat Criteria	Presence (Y/N)	Additional Notes
Seasonal Concentration Areas of Animals					
Waterfowl Stopover and Staging Areas (Terrestrial)	Ducks	Cultural Ecosites: CUM1, CUT1	Fields that flood during spring (mid-March to May).	N	N/A
Waterfowl Stopover and Staging Area (Aquatic)	Ducks, Geese	Marshes, Swamps, Shallow Water Ecosites: MAS1,MAS2, MAS3, SAS1 SAM1, SAF1, SWD1 to SWD7,	Ponds, marshes, lakes, bays, coastal inlets, and watercourses. Sewage treatment ponds and storm water ponds **not** SWH Reservoir managed as a large wetland or pond/lake qualifies.	N	N/A
Shorebird Migratory Stopover Area	Shorebirds	Beaches, Dunes, Meadow Marshes: BBO1, BBO2, BBS1, BBS2 BBT1, BBT2, SDO1, SDS2, SDT1, MAM1 to MAM5	Shorelines of lakes, rivers and wetlands. Sewage treatment ponds and storm water ponds **not** SWH.	N	N/A
Raptor Wintering Area	Eagles, Hawks, Owls	Hawks/Owls - Combination of Forest and Cultural Ecosites: FOD, FOM, FOC, CUM, CUT, CUS, CUW Bald Eagle: Forest or swamp close to open water (hunting ground): FOD, FOM, FOC, SWD, SWM, SWC	Raptor wintering sites: >20ha, with a combination of forest and upland. Idle/Fallow/Meadow (>15ha) with adjacent woodlands. Eagle sites: open water, large trees and snags for roosting.	N	N/A
Bat Hibernacula	Big Brown Bat, Tri-coloured Bat	Caves, Crevices: CCR1, CCR2, CCA1, CCA2	Hibernacula may be found in caves, mine shafts, underground foundations and Karsts. Buildings and active mine sites **not** SWH.	N	N/A
Bat Maternity Colonies	Big Brown Bat, Silver-haired Bat	Deciduous or mixed forests and swamps: FOD, FOM, SWD, SWM	Mature deciduous and mixed forest stands with >10/ha; large trees >25 cm DBH with cavities.	N	Bat Maternity Roost Surveys determined that snag density and size was unlikely to support bat maternity colonies.
Turtle Wintering Area	Turtles	SW, MA, OA, SA, FEO, BOO	Free water beneath ice. Soft mud substrate. Permanent water bodies, large wetlands, bogs, fens with adequate DO.	N	N/A
Reptile Hibernaculum	Snakes	Habitat may be found in any ecosite other than very wet ones. Five-lined Skink: FOD and FOM, FOC1, FOC3	Below frost line in burrows, rock crevices, rock piles or slopes, stone fences, abandoned stone foundations. Conifer or shrub swamps/swales, poor fens, depressions in bedrock with accumulations of sphagnum moss or sedge hummock ground cover. Skink: mixed forest with rock outcrop openings; granite bedrock with fissures.	N	N/A
Colonially-nesting Bird Breeding Habitat (Bank and Cliff)	Cliff Swallow, Northern Rough-winged Swallow	Eroding banks, sandy hills/piles, burrow pits, steep slopes, cliff faces, bridge abutments, silos, barns. CUM1, CUT1, CUS1, BLO1, BLS1, BLT1, CLO1, CLS1, CLT1	Exposed soil banks, **not** a licensed/permitted aggregate area. Does **not** include man-made structures (bridges or buildings), or recently (2 yrs) disturbed soil areas (berms, embankments, soil/aggregate stockpiles).	N	N/A
Colonially-nesting Bird Breeding Habitat (Tree/Shrubs)	Great Blue Heron, Black-crowned Night Heron, Great Egret, Green Heron	SWM2, SWM3, SWM5, SWM6, SWD1 to SWD7, FET1	Nests in live or dead standing trees in wetlands, lakes, islands and peninsulas. Shrubs and emergents may be used. Nests in trees are 11 to 15 m from ground, near top of the tree.	N	N/A
Colonially-nesting Bird Breeding Habitat (Ground)	Herring Gull, Great Black-backed Gull, Little Gull, Ring-billed Gull, Common Tern, Caspian Tern, Brewer's Blackbird	Rocky island or peninsula in lake or river. Close to watercourses in open fields or pastures with scattered trees or shrubs (Brewer's Blackbird). MAM1 – 6; MAS1 – 3; CUM, CUT, CUS	Gulls and terns nesting on islands or peninsulas with open water or marshy areas. Brewers Blackbird colonies are found on the ground in low bushes close to streams and irrigation ditches within farmlands.	N	N/A
Migratory Butterfly Stopover Area	Painted Lady, Red Admiral, **Special Concern:** Monarch	Combination of open and forested ecosites (need one from each). Field: CUM, CUT, CUS Forest: FOC, FOD, FOM, CUP	Minimum of 10 ha, located within 5 km of Lake Ontario. Combination of field and forest, undisturbed sites, with flowering species (preferred nectar plants).	N	N/A
Landbird Migratory Stopover Areas	All migratory songbirds. All migrant raptor species.	FOC, FOM, FOD, SWC, SWM, SWD	Woodlots need to be >10 ha in size and within 5 km of Lake Ontario. If multiple woodlands are located along the shoreline, those Woodlands <2km from Lake Ontario are more significant. Include a variety of habitats; forest, grassland and wetlands.	N	N/A
Deer Yarding Areas	White-tailed Deer	FOM, FOC, SWM, SWC, CUP2, CUP3, FOD3, CUT	Stratum I: core deer yard - coniferous forest; 60% canopy cover with pine, hemlock, cedar, spruce. Stratum II: mixed or deciduous forest with plenty of browse available, may include agricultural areas.	N	N/A

SWH Type	Associated Species	Associated ELC Ecosites	Habitat Criteria	Presence (Y/N)	Additional Notes
Deer Wintering Congregation Areas	White-tailed Deer	FOC, FOM, FOD, SWC, SWM, SWD	When movement is not constrained by snow depth (20cm) Woodlots > 100 ha and used annually.	N	N/A
Rare Vegetation Communities					
Cliffs and Talus Slopes		TAO, TAS, CLO, CLS, TAT, CLT	Cliff: near vertical bedrock >3m in height; Talus Slope: coarse rock rubble at the base of a cliff	N	N/A
Sand Barren		SBO1, SBS1, SBT1	Sand Barrens >0.5 ha. Vegetation can vary from patchy and barren to continuous meadow, thicket--like, or tree covered (less than 60%). Less than 50% vegetation cover are exotic species.	N	N/A
Alvar	*Indicator species: Carex crawei, Panicum philadelphicum, Eleocharis compressa, Scutellaria parvula, Trichostema brachiatum,* Loggerhead Shrike	ALO1, ALS1, ALT1, FOC1, FOC2, CUM2, CUS2, CUT2-1, CUW2	Alvar >0.5 ha. Level, mostly unfractured calcareous bedrock with mosaic or rock pavements and bedrock overlain with thin veneer of soil. Vegetation cover varies from patchy to barren with <60% tree cover.	N	N/A
Old Growth Forest		FOD, FOC, FOM, SWD, SWC, SWM	Woodland areas 30 ha or greater or with at least 10 ha interior habitat assuming 100 m buffer at edge of forest.	N	N/A
Savannah		TPS1, TPS2, TPW1, TPW2, CUS2	No minimum size; A Savannah is a tallgrass prairie habitat that has tree cover between 25 – 60% with less than 50% cover of exotic species. Remnant sites (railway right-of-ways) are **not** SWH.	N	N/A
Tallgrass Prairie		TPO1, TPO2	No minimum size; An open Tallgrass Prairie habitat has < 25% tree cover. Less than 50% cover of exotic species. Remnant sites (railway right-of-ways) are not SWH.	N	N/A
Other Rare Vegetation Communities		Provincially Rare S1, S2 and S3 vegetation communities are listed in Appendix M of the SWHTG.	Rare Vegetation Communities may include beaches, fens, forest, marsh, barrens, dunes and swamps. Review Appendix M	N	N/A
Specialized Habitat for Wildlife					
Waterfowl Nesting Area	Ducks	Upland habitats adjacent to: MAS1 to MAS3, SAS1, SAM1, SAF1, MAM1 to MAM6, SWT1, SWT2, SWD1 to SWD4	Extends 120 m from a wetland or wetland complex. Upland areas should be at least 120 m wide. Wood Ducks and Hooded Mergansers use cavity trees (>40cm dbh) in woodlands.	N	N/A
Bald Eagle and Osprey Nesting, Foraging and Perching Habitat	Osprey, Bald Eagle	FOD, FOM, FOC, SWD, SWM, SWC directly adjacent to riparian areas	Nesting areas are associated with waterbodies along forested shorelines, islands, or on structures over water.	N	N/A
Woodland Raptor Nesting Habitat	Northern Goshawk, Cooper's Hawk, Sharp-shinned Hawk, Red-shouldered Hawk, Barred Owl, Broad-winged Hawk	All forested ELC ecosites. Forests, swamps, and conifer plantations: FOD, FOM, FOC, SWD, SWM, SWC, CUP3	Natural or conifer plantation woodland/forest stands >30 ha with > 10 ha interior habitat. Stick nests.	N	N/A
Turtle Nesting Areas	Midland Painted Turtle, Snapping Turtle, Northern Map Turtle	Exposed mineral soil (sand or gravel) areas adjacent (<100m) or within: MAS1 to MAS3, SAS1, SAM1, SAF1, BOO1	Nest sites close to water, within open sunny areas with soil suitable for digging. Sand and gravel beaches. Nesting areas on sides of roads are not SWH.	N	N/A
Seeps and Springs	Wild Turkey, Ruffed Grouse, Spruce Grouse, White-tailed Deer, Salamander spp.	Seeps/Springs are areas where ground water comes to the surface.	Any forested area (with <25% meadow/field/pasture) within the headwaters of a stream/river system.	N	N/A
Amphibian Breeding Habitat (Woodland)	Woodland Frogs and Salamanders	FOC, FOM, FOD, SWC, SWM, SWD	Wetland, pond or woodland pool of >500 m^2 within or adjacent (within 120m) to wooded areas (no min. size). Woodlands with permanent ponds or those containing water until mid-July are preferred.	N	Amphibian call surveys determined tha the Site is not considered SWH for Amphibian Breeding Habitat (woodland) .
Amphibian Breeding Habitat (Wetlands)	Toads, Frogs, and Salamanders	SW, MA, FE, BO, OA and SA. Typically isolated (>120m) from woodland ecosites, however larger wetlands may be adjacent to woodlands.	Wetlands >500m^2 isolated from woodland ecosites with high species diversity. Permanent water bodies with abundant vegetation for bullfrogs.	N	Amphibian call surveys determined tha the Site is not considered SWH for Amphibian Breeding Habitat (wetland) .

SWH Type	Associated Species	Associated ELC Ecosites	Habitat Criteria	Presence (Y/N)	Additional Notes
Woodland Area-Sensitive Bird Breeding Habitat	Birds: Yellow-bellied Sapsucker Red-breasted Nuthatch, Veery, Blue-headed Vireo, Northern Parula, Black-throated Green Warbler, Blackburnian Warbler, Black-throated Blue Warbler, Ovenbird, Scarlet Tanager, Winter Wren, Special Concern: Cerulean Warbler Canada Warbler	FOC, FOM, FOD, SWC, SWM, SWD	Large mature (>60 years) forest stands or woodlots > 30 ha. Interior forest habitat of >200 m from forest edge.	N	Breeding bird surveys determined that, while the Site contained numerous bird species, they were species relatively commin in the area. Therefore, is not considered SWH for sensitive breeding habitat.
Habitat of Species of Conservation Concern					
Marsh Bird Breeding Habitat	American Bittern, Virginia Rail, Sora, Common Moorhen, American Coot, Pied-billed Grebe, Marsh Wren, Sedge Wren, Common Loon, Sandhill Crane, Green Heron, Trumpeter Swan	MAM1 to MAM6, SAS1, SAM1, SAF1, FEO1, BOO1 For Green Heron: SW, MA and CUM1 sites.	Wetlands with shallow water and emergent aquatic vegetation.	N	N/A
Open Country Bird Breeding Habitat	Upland Sandpiper, Grasshopper Sparrow, Vesper Sparrow, Northern Harrier, Savannah Sparrow, Short-eared Owl	CUM1, CUM2	Grassland/meadow >30 ha. Not being actively used for farming. Habitat established for 5 years or more.	N	N/A
Shrub/Early Successional Bird Breeding Habitat	Brown Thrasher, Clay-coloured Sparrow, Field Sparrow, Black-billed Cuckoo, Eastern Towhee, Willow Flycatcher, Yellow-breasted Chat, Golden-winged Warbler	CUT1, CUT2, CUS1, CUS2, CUW1, CUW2	Large field areas succeeding to shrub and thicket habitats > 10 ha. Areas not actively used for farming in the last 5 years.	N	N/A
Terrestrial Crayfish	Chimney or Digger Crayfish; (*Fallicambarus fodiens*) Devil Crayfish or Meadow Crayfish; (*Cambarus Diogenes*)	MAM1 to MAM6, MAS1 to MAS3, SWD, SWT, SWM, CUM1 sites with inclusions of the aforementioned.	Wet meadow and edges of shallow marshes (no minimum size) should be surveyed for terrestrial crayfish	Y	Suspected Chimney Crayfish burrows were identified on Site . Supplemental investigations identified similar burrows throughout the greater landscape area in nearly all drainage areas and ditch features investigated, including along the ditch lines of Georgian Trail. Further discussion is provided in Section 5.1 of the EIS.
Special Concern and Rare Wildlife Species	Any species of concern or rare wildlife species (S1-S3, SH) plant and animal.	Any ELC code.	Presence of species of concern or rare wildlife species identified within 1 or 10 km grid (NHIC).	Y	See Species of Conservation Concern Screening for a list of special cocern species that may be present on the Site.