Environmental Impact Study - 80 Big Bay Point Road, Barrie, Ontario

2021-08-23

Prepared for:
Tonlu Holdings Limited

Cambium Reference No.: 10758-002

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1.0 Introduction

Cambium Inc. (Cambium) was retained by Tonlu Holdings Limited (THL) to conduct an Environmental Impact Study (EIS) for the property located at 80 Big Bay Point Road, in the City of Barrie, Ontario (Figure 1). We understand that the proposed development on the Site includes a commercial/industrial subdivision and that the EIS is required in support of a Draft Plan application. A similar development proposal was advanced on the Site approximately a decade ago; however, that proposal was abandoned and THL has since purchased the subject property which includes and abutting parcel fronting on Bayview Drive.

The Environmental Impact Study (the Study) serves to address potential negative impacts to natural heritage features identified during the preliminary development review process, as required by the Provincial Policy Statement, 2020 (PPS), Growth Plan for the Greater Golden Horseshoe, 2020 (GPGGH), Lake Simcoe Protection Plan (LSPP), and City of Barrie Official Plan. Mapped natural features on or adjacent the Site include a watercourse (Whiskey Creek), and woodlands. The Site is within Ecoregion 6E-6 of Ontario (Crins, Gray, Uhlig, & Wester, 2009) and is within the City of Barrie Settlement Area.

Furthermore, the Site is located within the jurisdiction of the Lake Simcoe Region Conservation Authority (LSRCA) and their regulated area partially overlaps the northern boundary of the Site. As the Site contains wetlands and/or watercourses, the subject Study considers 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 or threatened species and their habitats from harm or destruction. Habitat of endangered and threated species is protected under provincial natural heritage policy; however, it is also the landowner's responsibility to ensure that no harm to these species occurs on their property. This Study includes a habitat-based screening for species of conservation concern to determine if the Site has suitable habitat for any provincial or federal species at risk (SAR).

In order to address the requirements of the approval authorities and guide the planning process, Cambium has conducted this Study to provide an evaluation of reasonably anticipated ecological impacts, positive or negative, that may arise as a result of this proposed development.

1.1 Terms of Reference

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

1.2 Proposed Development and Draft Plan of Subdivision

The subject lands are located in an existing, well-established commercial/industrial area in the City of Barrie. The Site is currently undeveloped and surrounded by commercial/industrial land uses. At the time of the Study, major municipal upgrades to Big Bay Point Road were underway.

The proposed development consists of a commercial/industrial subdivision and the creation of a new street connecting to Bayview Drive. The current Draft Plan is provided in Appendix B. As noted above, the undeveloped "L-shaped" property of interest consists of two parcels located northeast of the intersection of Big Bay Point Road and Bayview Drive, with frontage on both municipal roads. As shown on the Draft Plan, the Phase 1 Lands are generally located on the 80 Big Bay Point Road parcel and Phase 2 Lands are generally located on the 315 Bayview Drive parcel. Currently, THL is proposing a phased commercial/industrial development whereby the two parcels would be developed separately and sequentially. This following EIS focuses solely on Phase 1 Lands. Accordingly, the Phase 1 Lands are considered "the Site" for the purpose of this report.

2.0 Applicable Natural Heritage Policy and Regulation

2.1 Provincial Policy Statement, 2020

Section 2.1 of the Provincial Policy Statement (PPS) (Ministry of Municipal Affairs and Housing, 2020) protects the form and function of natural heritage features as defined by the PPS. Natural heritage features included in the PPS are provincially significant wetlands (PSW), significant coastal wetlands, significant woodlands, significant valleylands, significant wildlife habitat (SWH), significant areas of natural and scientific interest (ANSI), fish habitat, and the habitat of endangered and threatened species. Given their significance, development is prohibited within PSWs in Ecoregions 5E, 6E, and 7E and within significant coastal wetlands. Development in fish habitat and the habitat of endangered and threatened species shall only be permitted in accordance with provincial and federal requirements. Development within other natural heritage features and on lands adjacent to all natural heritage features are permitted only if demonstrated that there will be no negative impacts on the feature or their ecological function. Development includes the creation of a new lot, a change in land use, or the construction of buildings and structures requiring approval under the *Planning Act*.

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 Growth Plan for the Greater Golden Horseshoe, 2020

The Greater Golden Horseshoe is one of the most dynamic and fast-growing regions in North America. To address the challenges of increased development within the area, the Growth Plan for the Greater Golden Horseshoe, 2020 (GPGGH) builds on the PPS "*to establish a unique land use planning framework for the Greater Golden Horseshoe that supports achievement of complete communities, a thriving economy, a clean and healthy environment,*

and social equity" (Ministry of Municipal Affairs and Housing, 2020). In general, the GPGGH seeks to preserve agricultural lands, water resources, and natural areas by directing growth to settlement areas as defined in municipal Official Plans. The GPGGH contains policies regarding a provincial Natural Heritage System (NHS), key hydrologic features (KHFs), key hydrologic areas (KHAs), and key natural heritage features (KNHFs) (Table 1). Policies that reference the provincial NHS apply once the municipal Official Plan has incorporated the provincial NHS into their schedules; until that time, the policies that reference the NHS will apply outside settlement areas to the natural heritage systems identified in Official Plans that were approved and in effect as of July 1, 2017. Section 4.2.3 of the GPGGH states that, outside of settlement areas, development or site alteration is generally not permitted in KNHFs that are part of the NHS or in KHFs. Section 4.2.4 states that, outside of settlement areas, a proposal for new development or site alteration within 120 metres of a KNHF within the NHS or a KHF will require a natural heritage evaluation or hydrologic evaluation that identifies a suitable vegetation protection zone (i.e., a development setback). For KHFs, fish habitat, and significant woodlands the vegetation protection zone can be no less than 30 m measured from the outside boundary of the feature.

Table 1 Protected Features of the GPGGH

Key Hydrologic Features	Key Natural Heritage Features	
Permanent Streams	Habitat of Endangered and Threatened Species	Significant Wildlife Habitat
Intermittent Streams	Fish Habitat	Sand Barrens
Inland Lakes and their Littoral Zones	Wetlands	Savannahs
Seepage Areas and Springs	Life Science Areas of Natural and Scientific Interest (ANSI)	Tallgrass Prairies
Wetlands	Significant Valleylands	Alvars
	Significant Woodlands	

2.3 Lake Simcoe Protection Plan, 2009

In response to a decline in the ecological integrity of Lake Simcoe, the Lake Simcoe Protection Act was passed in 2008 and the Lake Simcoe Protection Plan (LSPP) was established in 2009

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

Policy 6.23-DP states that development or site alteration within a key natural heritage feature, key hydrological feature, or a related vegetation protection zone is generally not permitted. An application for development or site alteration within 120 m of a key natural heritage feature or key hydrologic feature will require a Natural Heritage Evaluation to demonstrate no negative effects to the ecological function of the feature and to confirm the appropriate minimum vegetation protection zone. The minimum vegetation protection zone for key natural heritage and key hydrological features is 30 metres; however, this may be increased subject to the Natural Heritage Evaluation. This EIS is intended to address the requirements of a Natural Heritage Evaluation.

2.4 Official Plan and Zoning By-Law

According to the City of Barrie Official Plan, Schedule A, Land Use, the Site is designated as ‘General Industrial’. Schedule H (Natural Heritage Resources), identifies a Level 1 Natural Heritage Resource with Existing Development Designation within 120 m of the proposed development. Sections 3.5.3.4(a)(ii) and 3.5.2.4 (d) of the Official Plan state that an EIS is required for any development or site alteration within 120 metres of an area identified as Level 1 on Schedule H.

According to Zoning By-law 2009-141, the Site is zoned ‘General Industrial’ (GI). Zoning of surrounding properties is predominately ‘General Industrial’ (G1).

2.5 Conservation Authority Regulation

"Conservation Authorities are local watershed management agencies that deliver services and programs to protect and manage impacts on water and other natural resources in partnership with all levels of government, landowners and many other organizations" (Conservation Ontario, 2021). Conservation Authorities each have their own Ontario Regulation under the *Conservation Authorities Act, 1990*. In general, they regulate development within and adjacent to river or stream valleys, Great Lakes and inland lakes shorelines, watercourses, hazardous lands (flood, erosion, unstable soils) and wetlands.

Lake Simcoe Region Conservation Authority regulates these features under Ontario Regulation 179/06: *Regulation of Development, Interference with Wetlands and Alterations to Shorelines and Watercourses*.

2.6 Endangered Species Act, 2007

Species listed as endangered or threatened on the Species at Risk in Ontario (SARO) list are protected under the provincial *Endangered Species Act*, 2007 (ESA) (Government of Ontario, 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, a provincially protected natural heritage feature.

2.7 Species at Risk Act

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

aquatic and migratory bird species located on private property in Ontario also receive protection under the Act.

2.8 Fisheries Act

Works within and adjacent to lakes, watercourses, and other bodies of water containing fish have the potential to impact fish and/or fish habitat. As a result of amendments to the federal *Fisheries Act* in 2015 and 2019, a proponent-led self-assessment is required for any project near water that could potentially impact fish or fish habitat. The purpose of the self-assessment is to determine whether the harmful alteration, disruption, or destruction (HADD) of fish habitat, as defined by the Act, can be avoided. The Fisheries and Oceans Canada (DFO) Fisheries Protection Program provides a Decision Framework and guidance material for conducing these self-assessments (available on-line at www.dfo-mpo.gc.ca/pnw-ppe/index-eng.html). If it is determined that “HADD” may be unavoidable, the project should be submitted to DFO for review and determination of project approach and conditions of approval.

3.0 Technical Approach and Data Collection Methods

3.1 Background Information Review

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

- Natural Heritage Areas: Make-a-map and Natural Heritage Information Centre NHIC Database Records (Ministry of Natural Resources and Forestry, 2019); Accessed April 20, 2021
- Aquatic Species at Risk Maps - Ontario (Fisheries and Oceans Canada, 2018); Accessed April 20, 2021
- Aquatic Resource Area Summary Data (Government of Ontario, 2015); Accessed July 6, 2021
- Ontario Flow Assessment Tool (Ministry of Natural Resources and Forestry, 2020)
- Ontario Reptile and Amphibian Atlas (ORAA) (Ontario Nature, 2018); Accessed April 20, 2021
- Ontario Breeding Birds Atlas (OBBA) (2001-2005) (Bird Studies Canada, 2005); Accessed April 20, 2021
- Lake Simcoe Region Conservation Authority regulated area mapping
- Barrie Creeks, Lovers Creek, and Hewitt’s Creek Subwatershed Plan (Lake Simcoe Region Conservation Authority, 2012)

- Fisheries Impact Assessment Report Whiskey Creek Culvert Expansion, Bayview Drive, Barrie (Azimuth Environmental Consulting Inc., 2008)
- City of Barrie Official Plan
- Zoning By-law 2009-141

Mapped natural heritage features present in the general area of the Site are shown on Figure 1.

3.1.1 Ministry Consultation

Depending on the natural features on the Site, ministry consultation may include the Ministry of Natural Resources and Forestry (MNRF) and/or the Ministry of Environment, Conservation, and Parks (MECP), as applicable.

In early 2019, the Government of Ontario made changes to the regulating authority on matters related to SAR in the province. The Ministry of Environment, Conservation and Parks (MECP) is now 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 screening for the Study.

3.2 Field Investigations

Information gathered through the background information review was used to guide the development of the fieldwork program. The purpose of the site visit(s) was to verify information acquired through existing documentation and to gather additional site-specific information. The following sections provide the methods that were used to gather site-specific information.

3.2.1 Ecological Land Classification and Vegetation Inventory

The Ecological Land Classification (ELC) System for Southern Ontario (Lee, 1998) was used to classify vegetation communities on the Site. Definitions of vegetation types are derived from the ELC for Southern Ontario First Approximation Field Guide (Lee, 1998) and the revised 2008 tables. ELC units were initially delineated and classified by orthoimagery interpretation. Field investigations served to confirm the type and extent of communities on the Site through vegetation inventory and soil assessment with a hand auger. Where vegetation communities extend off the Site, classification is done through observation from property boundaries and publically accessible lands.

3.2.2 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, 2014). 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.

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, as specified by the Ontario Wetland Evaluation System (OWES) for Southern Ontario, 3rd Edition (Ministry of Natural Resources, 2014). 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. Where wetland communities extend off the Site, classification was done through observation from property boundaries and publically accessible lands.

3.2.3 Aquatic Habitat Assessment

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 substrates and cover features were also noted. Indicators of surface drainage, including erosion of soils, gullies, and sediment deposition areas were mapped and traced to identify sources of erosion. All watercourse and drainage feature crossings, including bridges, culverts, and bed-level crossings, were noted and georeferenced in the field.

3.2.4 Breeding Bird Surveys

Two (2) breeding bird surveys at least 7 days apart were carried out during the peak breeding season, between May 24 and July 10. Point counts were complete using components of the Ontario Breeding Bird Atlas (OBBA) Guide for Participants (Ontario Breeding Bird Atlas, 2001) and the Forest Bird Monitoring Program (Cadman, Dewar, & Welsh, 1998) based on habitat characteristics. As outlined in the OBBA protocol, point counts are to be done between dawn and five (5) hours after dawn, when wind speed is low (<19 km/h) and in the absence of rain or thick fog. All species observations (visual and auditory) were recorded during a five (5) minute period. Each species observed was classified and assigned a code based on the highest level of breeding evidence, as defined by the protocol: Confirmed, Probable, Possible or Observed.

3.2.5 Grassland Bird Surveys

Bobolink (*Dolichonyx oryzivorus*) and Eastern Meadowlark (*Sturnella magna*) are SAR listed as threatened on the SARO list. These species prefer natural grasslands and agricultural fields, including pasture, hayfields and abandoned fields (CUM vegetation type under ELC), for breeding and nesting sites. One or both of these species have been recorded in the vicinity of the Site within recent years. Bobolink is an area sensitive species that requires a minimum area of 5 ha to support breeding habitat, with larger areas generally providing additional habitat benefits (Ministry of Natural Resources and Forestry, 2018). Eastern Meadowlark are not as strongly area sensitive; however, a minimum area of 5 ha is also required to support preferred breeding habitat (Ministry of Natural Resources and Forestry, 2018).

In order to determine if the Site is being used as nesting habitat by Bobolink or Eastern Meadowlark, avian surveys were conducted following the approved MNRF protocol for Eastern Meadowlark (Ontario Ministry of Natural Resources, 2013). This protocol is suitable for use with both of these species. This method involves recording Bobolink and Eastern Meadowlark observations via both point count location(s) and traveling transects between points. The protocol requires that the Site be visited three times between May 21 and July 3 (the nesting season for both of these species). Surveys were conducted between sunrise and four hours after sunrise when wind speed was low (<19 km/h; Beaufort Wind Scale of 3 or lower) and with light or no precipitation.

3.2.6 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 (3) 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.

3.2.7 Bat 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 ≥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 significant wildlife habitat (SWH) is defined as woodlands with greater than 10 roost trees per hectare. To determine if suitable 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 treed forest or swamp ELC community types, 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. 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.

4.0 Characterization of Natural Features and Functions

Background information and field investigation data is provided in the following sections. Based on the background and field data, an assessment of significance has been completed to identify protected natural heritage features on and/or adjacent to the Site.

The following field investigations were carried out on the Site and are summarized in Table 2. Representative Site photos are included in Appendix C and locations of specific surveys are shown on Figure 2.

Table 2 Summary of Field Investigations

Date	Time On Site	Weather	Observer	Activities
2021-04-11	2015-2050	13°C, Cloud Cover: 90%, Wind: 2, Noise: 1, Drizzle	D. Langlois	Amphibian Survey #1
2021-04-13	0830-1000	9-11°C, Cloud Cover: 100%, Wind: 1. Drizzle	D. Langlois L. Wintemute	Bat Maternity Roost Habitat Survey
2021-05-18	2100-2135	20°C, Cloud Cover: 0%, Wind: 1, Noise: 1	D. Langlois	Amphibian Survey #2
2021-05-28	1300-1515	5°C, Overcast	A. Kissel	Ecological Land Classification Wetland Delineation
2021-05-31	0615-0645	16°C, Cloud Cover: 20%, Wind: 1, Noise: 2	M. Soden	Breeding Bird Survey #1 Grassland Bird Survey #1
2021-06-07	0615-0645	19°C, Cloud Cover: 10%, Wind: 1, Noise: 2	M. Soden	Breeding Bird Survey #2 Grassland Bird Survey #2
2021-06-16	1230-1300	18°C, Cloud Cover: 0%, Wind: 2, Noise: 2	D. Langlois	Aquatic Habitat Assessment
2021-06-20	2125-2155	22°C, Cloud Cover: 100%, Wind: 1, Noise: 2	D. Langlois	Amphibian Survey #3
2021-07-06	0830-1300	25-31°C, Cloud Cover: 20%, Wind: 1, Noise: 2	K. McKitterick	Ecological Land Classification Grassland Bird Survey #3

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

4.1 Landscape Position and Topography

The Site is 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, 1998).

The Site is situated in the Lake Simcoe watershed, and more specifically the Barrie's Creek subwatershed. The watercourse adjacent to the Site is locally known as Whiskey Creek. The Site slopes gradually to the north, towards the watercourse. Overland drainage on the Site is generally directed towards Whiskey Creek and eventually Lake Simcoe.

4.2 Vegetation Communities

Approximately 10 years ago, the Site was cleared and graded by a previous landowner, in preparation for commercial development that was eventually abandoned. As a result, the parcel is highly disturbed, with remnant soil stockpiles and minimal topsoil coverage. At the time of the field investigations, there was evidence of more recent vegetation clearing in the previously disturbed/cleared areas (i.e, woodchips, small stumps). Forested areas remained along the northern and southern boundaries of the Site. Note that the aerial imagery shown on Figures 2 and 3 do not accurately reflect vegetation conditions at the time of the Study.

The current vegetation communities on the Site are summarized in Table 3 and are mapped on Figure 2. A list of identified species and representative photos for each community are provided in Appendix D.

Table 3 Vegetation Communities

No.	ELC Code	Community Description	Community Type	S -Rank
1	CUM1	Cultural Meadow	Terrestrial	

2	MAMM1-2	Cattail Graminoid Mineral Meadow Marsh	Wetland	
3	FODM8-1	Fresh – Moist Poplar Deciduous Forest	Terrestrial	S5
4	FODMM2-2	Dry-Fresh White Pine - Sugar Maple Mixed Forest	Terrestrial	S5
5	CUW1	Cultural Woodland	Terrestrial	
6	MEGM3	Dry-Fresh Graminoid Meadow	Terrestrial	

A search for butternut (*Juglans cinerea*; provincially endangered) was completed as part of the vegetation survey; multiple butternut were identified on and adjacent to the Site. Further details are provided in Section 4.8.1.

4.2.1 Significant Woodlands

Significant woodlands are natural heritage features that are afforded protection under provincial policy. Currently, according to thee Official Plan Schedules, the planning authority has not explicitly defined or designated significant woodlands within their jurisdiction. In the absence of local criteria for evaluating woodlands, the Natural Heritage Reference Manual provides guidance on evaluating woodlands (Ministry of Natural Resources, 2010).

4.2.1.1 Woodland Size Criteria

The woodland size criterion is based on the scarcity of woodlands within the planning region, with different thresholds for significance depending on the percent cover of woodlands.

- Where woodlands cover: is about 5-15% of the land cover, woodlands 4 ha in size or larger should be considered significant.

The woodland communities on and adjacent to the Site would not be considered significant as they are less than 4 ha.

4.3 Wetland Delineation

A small wetland community was documented in the far northeast corner of the Site. This feature was approximately 0.05 ha in area and consisted of one distinct vegetation community (Community 2; MAMM1-2). The feature had been historically altered and was likely used for stormwater storage as a hickenbottom was observed in the northwest corner of the community. This feature was distinguished from the surrounding area based on the dominance of wetland vegetation, Narrow-leaved Cattail (*Typha angustifolia*) (>50 % relative cover).

An mapped unevaluated wetland was also documented on adjacent lands, to the west of the Site. This feature was dominated by Reed-canary Grass and is located entirely of site of the Phase 1 lands.

4.4 Surface Water and Drainage Features

Whiskey Creek, a tributary of Lake Simcoe, runs along the northern boundary of the Site, as a result of a historical channel realignment around the neighbouring facility (i.e., The Source), conveying flows northeastward.

According to the Ontario Flow Assessment Tool (Ministry of Natural Resources and Forestry, 2020) the subject tributary has an upstream drainage area of approximately 2.5 km^2 and is largely within the urban area of the City of Barrie.

No other surface water or drainage features were documented on the Site.

4.5 Fish and Fish Habitat

The subject watercourse, Whiskey Creek, has an intermittent flow regime on the Site. A Fisheries Impact Assessment Report previously completed for the reconstruction of the nearby Bayview Road crossing of Whiskey Creek (Azimuth Environmental Consulting Inc., 2008) notes that the subject watercourse originates in the Veteran’s Drive area, west of Highway 400. It exhibits a coldwater thermal regime and supports a local Brook Trout (*Salvelinus fontinalis*) population. Appendix E includes a list of fish species known to occur in Whiskey

Creek, based on the background information review, and species-specific life history information.

The subject reach (Reach A) running along the northern boundary of the Site consisted of a straightened channel. The channel and channel banks were lined with gabion baskets from the previous realignment works. Isolated pools of standing water were documented in the channel, averaging approximately 15 cm in depth and ranging from 0.80 m to 1.75 m in wetted width. Average bankfull width was estimated to be 2.5 m. In-channel substrates were dominated by fines and organic detritus.

In-water vegetation consisted mainly of Narrow-leaved Cattail (*Typha angustifolia*). The riparian vegetation on the left bank consisted of cattails and grasses, confined by a fence and driveway on the adjacent property to the north. The right bank consisted primarily of willows, providing a moderate amount of overhead cover for the channel. Riparian vegetation included willow (*Salix spp*.), Staghorn Sumac (*Rhus typhina*), Poison Ivy (*Toxicodendron radicans*), Red Osier Dogwood (*Cornus sericea*), and Reed Canarygrass (*Phalaris arundinacea var. arundinacea*).

Based on our field investigations, no portion of Whiskey Creek adjacent to the Site was suitable for Brook Trout spawning.

We note that the watercourse, its riparian buffer area, and its floodplain, are regulated by LSRCA under O.Reg. 179/06.

4.6 Wildlife Survey Results

4.6.1 Birds

Breeding bird surveys were completed as a part of the current study, as detailed in Appendix F. Bird species observed on or adjacent to the Site, breeding evidence, federal and provincial status, and s-ranks, are provided in Appendix F. The Site consists mainly of an open disturbed area with areas of woodland edge along the perimeter. A total of seven bird species exhibited probable or confirmed breeding evidence (see shaded cells in Appendix F). No area-

sensitive forest bird species, SAR grassland birds, or species of conservation concern were observed on or adjacent to the Site.

4.6.2 Amphibians

Amphibian breeding surveys were completed and a total of two frog and toad species were identified on or adjacent to the Site, as shown in Table 4. Both species were documented on the Site. No species were recorded with call level codes of 3 and no federal or provincial SAR species were documented.

Table 4 Summary of Amphibian Survey Results

Sample Point	Survey Direction	Species	Maximum Call Intensity	# of Individuals	Inside or Outside 100 m Sample Plot
MMP1	NE	**Wood Frog**	1	1	Inside
		American Toad	2	2	Inside

Notes: "-" indicates no calls heard

Based on these results, the small, historically altered wetland (Community 2) provides limited amphibian breeding habitat.

4.6.3 Mammals

Given the relatively small size of the forest communities located on the Site, the entire communities were surveyed for bats. Individual trees that offered wildlife habitat and met the candidate maternity roost criteria were marked with a hand-held GPS unit. No vegetation communities with either a moderate or high density of suitable roosting trees were documented on the Site.

Incidental terrestrial mammal observations documented during the field investigations included Eastern Cottontail (*Sylvilagus floridanus*) and Eastern Gray Squirrel (*Sciurus carolinensis*). The Site is likely used by other species urban areas, including, Red Squirrel (*Sciurus vulgaris*), Eastern Chipmunk (*Tamias striatus*) and Raccoon (*Procyon lotor*).

4.7 Significant Wildlife Habitat

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

Under existing conditions, given that the subject property (Phase 1 and Phase 2 Lands combined) is bordered on all sides by existing commercial/industrial development, local wildlife movement patterns are restricted to the Whiskey Creek corridor. This corridor provides some degree of connectivity to a larger natural area northeast of the Site. The recommended 30 m watercourse buffer with naturally self-sustaining vegetation (see Section 5.2) will serve to maintain connectivity to off-site areas and provide sufficient space for wildlife movement along this feature.

4.8 Species of Conservation Concern

A list of species of conservation concern 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 current Study, as detailed in the previous sections. Cambium has employed a habitat-based screening, supplemented with targeted field surveys when necessary, to identify suitable habitat for species located on or adjacent to the Site. A detailed habitat suitability analysis is provided in Appendix G and a discussion of the results is provided below.

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

4.8.1 Endangered and Threatened Species

Butternut trees across North America have been infected by a fungus known as butternut canker, which is usually fatal. Butternut is an endangered species and protected under Ontario's Endangered Species Act. Ontario Regulation 242/08 states that before a butternut tree can be removed or harmed, its health must be evaluated by a person designated to assess the health of butternut trees. Butternut trees are divided into three (3) categories based on their health:

- Category 1: in the advanced stages of disease as a result of butternut canker ("non-retainable")
- Category 2: the tree does not have butternut canker or the disease is not as advanced ("retainable")
- Category 3: could be useful in determining how to prevent or resist butternut canker ("achievable")

Each category of tree dictates different requirements under the ESA Ontario Regulation 242/08 Section 23.7. For Category 1 trees, an assessment report must be sent to the Ministry of Natural Resources and Forestry office 30 days before the proposed removal and ministry staff must be allowed to visit during the 30-day period, if asked. After 30 days, you can remove or harm any Category 1 trees. Up to ten (10) Category 2 trees can be removed, but registration with the Ministry of Natural Resources and Forestry is required and additional rules must be followed (i.e. plant butternut seedlings and monitoring requirements for multiple years). Category 3 trees cannot be removed.

A search for butternut (*Juglans cinerea*; provincially endangered) was completed as part of the vegetation survey; multiple butternuts were identified on and adjacent to the Site (see Figure 2).

Two Butternuts were identified in Community 4 on the Site, at the time the property was purchased by the current landowner. These butternuts were assessed at the time (June 2020) by Cambium's qualified Butternut Health Assessor and were determined to be hybrids using

the long form assessment method. The associated assessment report is provided in Appendix H. Hybrid trees are not afforded protection under the ESA. As such, these two trees have since been removed from the property.

During the 2021 field investigations, Cambium documented an additional cluster of three Butternuts on adjacent lands, approximately 3 m from the fence, along the eastern property boundary (see Figure 2). A sample was collected from one of the trees in this cluster and was submitted to Precision Biomonitoring for DNA analysis for hybridity. The DNA analysis indicated that the tree was pure butternut; therefore, all three Butternuts are assumed to be pure. Butternut Health Assessments on these trees were completed by a qualified Assessor at Strybos Barron King Ltd. (the project Arborist and Landscape Architect) in July 2021. All three trees were determined to be Category 2 trees. Copies of the assessment reports are provided in Appendix H. Impacts to and management of these trees are further discussed in Section 5.3.

Finally, a total of 10 butternut plantings (i.e., non-naturally occurring trees) were documented by the project team in Community 3, along the northern property boundary. We understand that these plantings were installed as part of compensation for historical removals by the previous landowner. All plantings were in poor health at the time of the field investigations, showing signs of canker and/or significant damage. Two of the plantings were determined to be fully deceased. The remaining plantings will be left undisturbed as they are located within the 30 m watercourse buffer.

4.8.2 Special Concern Species and Federally Listed Species

Snapping Turtle (*Chelydra serpentina*) may be present in the watercourse on and adjacent to the Site. The wetland communities on and adjacent to the Site also contained small areas of ponded water, providing aquatic habitat for turtles. Existing ground cover in open areas of the Site was dominated by meadow species, which do not provide preferred nesting habitat for turtles. Mitigation measures relating to the protection of turtles are provided in Section 5.4.

The MNRF NHIC database contains an occurrence record for Eastern Milksnake (*Lampropeltis Triangulum*; federally listed as special concern), within the 1km UTM Grid Square that overlaps

the Site (17PK0512). 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 (Ministry of Natural Resources and Forestry, 2014). The milksnake is secretive and is not likely to be encountered during the day. Mitigation measures relating to the protection of snakes are provided in Section 5.4.

5.0 Impact Assessment and Mitigation Measures

The proposed development consists of a commercial/industrial subdivision and the creation of a new street connecting Big Bay Point Road and Bayview Drive.

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:

- Wetlands
- Fish Habitat/Intermittent Watercourse
- Habitat of Endangered and Threatened Species

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

5.1 Wetlands

A wetland was identified in the northeast corner the Site. All wetlands are considered to be KNHF and KHF that are afforded protection under the GPGGH, LSPP, and Ontario Regulation (179/06). Development within 30 m of an unevaluated wetland may be permitted if it is determined that there will be no negative impact to the hydrologic function of the feature.

The wetland identified on the Site is limited in terms of its ecological function. The wetland area is relatively small (approximately 0.05 ha), has been historically altered and a hickenbottom structure was observed within the feature. The wetland appears to be fed primarily by stormwater drainage from surrounding developed areas. The current Draft Plan proposes integrating this feature into the future Stormwater Management Block, maintaining it’s hydrologic function. As such, the proposed development is not expected to result in adverse hydrologic impacts to the wetland and no additional avoidance measures or setbacks are recommended.

5.1.1 Erosion and Sediment Control

Prior to any construction activities taking place, it is essential that perimeter sediment fencing be installed around construction areas. Fencing should be properly keyed into the ground and securely fastened to vertical supports spaced ≤ 2 m apart. This key control measure will help prevent sediment from entering surface water features (i.e., wetlands and the watercourse) in the surrounding landscape. All sediment fencing should be regularly maintained and kept in good working condition, until the area has been stabilized and/or successfully revegetated. Any observed overland drainage channels originating from Site, that may or may not have arisen as a result of erosion, should be directed to a check dam structure, prior to discharging to off-site areas.

5.1.2 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. Eaves trough downspouts should be directed to vegetated areas (such as lawn, or gardens) and not onto hardened surfaces, to encourage infiltration. It is anticipated that a hydrogeological study will be prepared (i.e., required) in support of the detailed design process. This study should specifically address potential stormwater-related impacts to the hydrological regime of the surrounding wetlands, through a feature-based water balance study.

5.2 Fish Habitat/ Intermittent Streams

Fish habitat is present on and adjacent to the Site, in Whiskey Creek. A 30 m minimum vegetation protection zone (VPZ) is recommended to provide protection for this feature, as shown on Figure 3. The 30 m VPZ is considered sufficient to protect the existing form and function of the feature provided that the area be maintained as existing forest cover and be allowed to naturally self-sustain (i.e., a buffer area where no vegetation removals or grading is allowed).

Indirect impacts to fish habitat, including potential for changes to water quality, will be mitigated through appropriate Erosion and Sediment Control (ESC) measures and stormwater management as detailed in Section 5.1.1 and 5.1.2.

5.3 Habitat of Endangered and Threatened Species

Three naturally occurring Butternut trees were documented on adjacent lands, approximately 3 m from the fence along the eastern property boundary (see Figure 2). As these trees are off site, the proposed development does not require removals. Given that these trees are located on the neighbouring property, the proposed development does not require that they be removed; however, some level of disturbance within the 50 m buffers is anticipated. As such, the potential for harm to these trees can not be ruled out. A Notice of Butternut Impact form, accompanied by compensation planting/tending plans that meet regulatory requirements, are currently being prepared to address potential harm as a result of future on-site activities (e.g., grading), as per rules in Section 23.7 of O.Reg 242/08 under the ESA. This documentation will be submitted to MECP for review, prior to site alteration.

5.4 Best Management Practices

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 during construction (see Section 5.1.1) are essential to ensuring that there will be minimal impacts to the watercourse and downstream receivers. 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 turtles and snakes from inadvertently entering the construction area. During the construction phase, the development envelope should be routinely checked for the presence of wildlife.

Turtles and snakes are particularly vulnerable to construction-related impacts on sites adjacent to wetlands, watercourses, and waterbodies. As the Site is located adjacent to potential habitat

for turtles, workers should be aware of the nesting season for turtles, which extends from May 15 to August 15. All stockpiled materials should be kept inside the exclusion fencing area and ideally should be covered and well secured around the base, to prevent turtles from nesting in loose substrates. Should any nesting turtles be encountered, work should stop immediately and the turtle should be left to finish nesting undisturbed. The turtle should be photographed and the nest marked to ensure it is not disturbed during construction, or until eggs have hatched (late August – September). If a nest is laid in a stockpile or other area that requires disturbance, Cambium should be contacted to determine if the nest can be relocated. If any individuals are encountered, they should be photographed and allowed time to move out of harm's way. Species at Risk observations, including most species of snakes and turtles, should be reported to the Natural Heritage Information Centre.

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

6.0 Policy Compliance

Based on the key natural heritage and hydrologic features identified (wetlands, fish habitat, and intermittent stream) and the findings of the field investigations conducted on the Site, the proposed development was assessed for compliance with applicable policies in the PPS, LSPP, and O.Reg 179/06. Compliance with applicable natural heritage policy is summarized in Table 5. With respect to the GPGGH, given that the Site is located within the City of Barrie Settlement Area, the "no negative impact" policy test of the PPS applies.

Table 5 Policy Compliance Summary

Key Natural Heritage / Hydrologic Feature	On Site	On Adjacent Lands	Meets Associated Policy
Wetland	Yes	Yes	Yes
	Explanation: The wetland identified on the Site, is limited in size and ecological function. It has historically been altered is fed primarily by stormwater drainage from surrounding developed areas. The integration of this this feature into the future Stormwater Management Block, will maintain it's hydrologic function. Recommended restoration and enhancement of the stormwater management block with native plantings will serve to improve the ecological function of the area.		
Fish Habitat / Streams	Yes	Yes	Yes
	Explanation: No negative impacts to Fish Habitat are anticipated as a result of the proposed development. The implementation of a 30 m buffer or vegetation protection zone (VPZ) will effectively mitigate potential impacts to fish habitat and the watercourse identified on the Site. Any potential impacts resulting from new built features or site alteration should be sufficiently mitigated through the implementation of recommendations summarized in Section 8.0.		
Habitat of Threatened and Endangered Species	No	Yes	Yes
	Explanation: Potential harm to the three Category 2 Butternut trees located adjacent to the Site, along the eastern boundary, will		

	be appropriately compensated for through planting/tending plans that meeting requirements under O.Reg. 242/08.

With respect to the natural heritage policies of the LSPP, in Cambium's opinion, the proposed mitigation measures (i.e., maintenance of vegetation protection zones) satisfy the requirements of sections 6.33-dp and 6.34-dp.

7.0 Opportunities for Restoration and Enhancement

Due to the proposed alteration to the wetland community, Cambium recommends that additional enhancement measures be incorporated in the site plans. Plantings of native trees, shrubs and herbaceous plants around the proposed stormwater management block and within the 30 m watercourse buffer will increase bank stability and infiltration of run-off, improve species diversity and provide cover, shelter and nesting habitat for bird species.

Cambium also recommends applying suitable seed mixtures in areas adjacent to the proposed stormwater management pond. The Ontario Seed Company (OSC) based out of Waterloo, ON carries a variety of seed mixtures. Specialized mixtures such as an ‘erosion control mixture’ contain wildflowers and grass species, which provide rapid vegetation cover. Other seed mixtures available include an Early Successional Dry Prairie Meadow Mix and Standard OBL Wetland Mix, which would enhance the areas surrounding the stormwater management block. These mixtures contain species such as New England Aster, Black-eyed Susan, Boneset, Wool Grass, Soft Rush, Nodding Bur Marigold, Purple Stemmed Aster, Swamp Milkweed, Bebb’s Sedge and Spotted Joe-pyeweed. These mixtures provide an excellent method of rehabilitating areas with a diverse composition of plant species suitable for the conditions documented.

8.0 Summary of Mitigation, Compensation, and Best Practices

1. A 30 m minimum vegetation protection zone (VPZ) for the watercourse has been identified and mapped on Figure 3. The identified feature and the respective VPZ should be included on future Site Plans prepared for the Site, to clearly demonstrate that new structures and associated built features and hardened area are located outside these areas.
2. The 30 m minimum vegetation protection zone (VPZ) should be maintained as existing vegetative cover and be allowed to naturally self-sustain (i.e., no clearing/removal of seedling/saplings, stockpiling of material, livestock grazing, etc.).
3. No site alteration can occur within 50 m of the three pure butternut trees identified adjacent to the Site, until a Notice of Butternut Impact is submitted to MECP and the 30-day review period has elapsed, as per O.Reg. 242/08.
4. All relevant approvals and permits should be obtained, prior to any site alteration activities taking place.
5. Clearing of vegetation should occur outside of the April 15 to August 15 breeding bird timing window as per Environment and Climate Change Canada guidelines. Vegetation removal should be limited to the greatest extent possible. Any active bird nests should be left undisturbed until young have fledged or the nest is determined to be inactive.
6. Prior to the commencement of site alteration, heavy duty sediment fence should be installed around the perimeter of construction area and any proposed material stockpile locations, as per Ontario Provincial Standard Drawing (OPSD 219.110).
7. All erosion and sediment control measures should be inspected and maintained throughout the construction phase, until the Site has been fully stabilized. All temporary ESC measures should be removed following construction.
8. Machinery or construction materials should be stored within the construction area throughout the construction period.
9. Eavestrough downspouts should be directed to vegetated buffer areas or infiltration features, wherever possible.

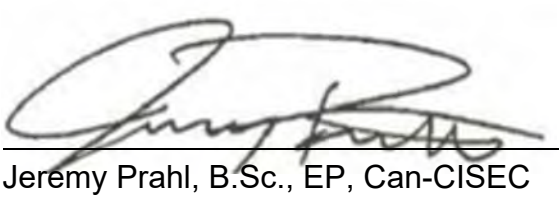
10. Should any nesting turtles be encountered during construction, work should stop immediately and the turtle should be left to finish nesting undisturbed. The turtle should be photographed and the nest marked to ensure it is not disturbed, until it has hatched (late August – September). If a nest is laid in a stockpile or other area that requires disturbance, Cambium should be contacted to determine if the nest can be relocated.
11. Any species at risk discovered on the property will be left undisturbed as required by the Endangered Species Act, 2007. If any individuals are encountered, they should be photographed and allowed time to move out of harm's way. SAR observations should be reported to the MNRF Natural Heritage Information Centre.

9.0 Closing

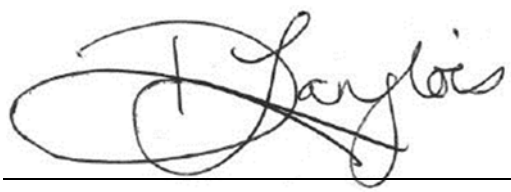
In closing, potential negative impacts associated with the proposed development and site alteration can be appropriately minimized, provided that the recommendations summarized in Section 8.0 are adhered to. The information presented herein demonstrates that the proposed development can be carried out in a way that will not adversely impact natural heritage and hydrologic features and function identified on or adjacent to the subject Site. Furthermore, the proposed development complies with applicable natural heritage policy.

Respectfully submitted,

Cambium Inc.



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



Danielle Langlois, B.Sc.
Ecological Technologist

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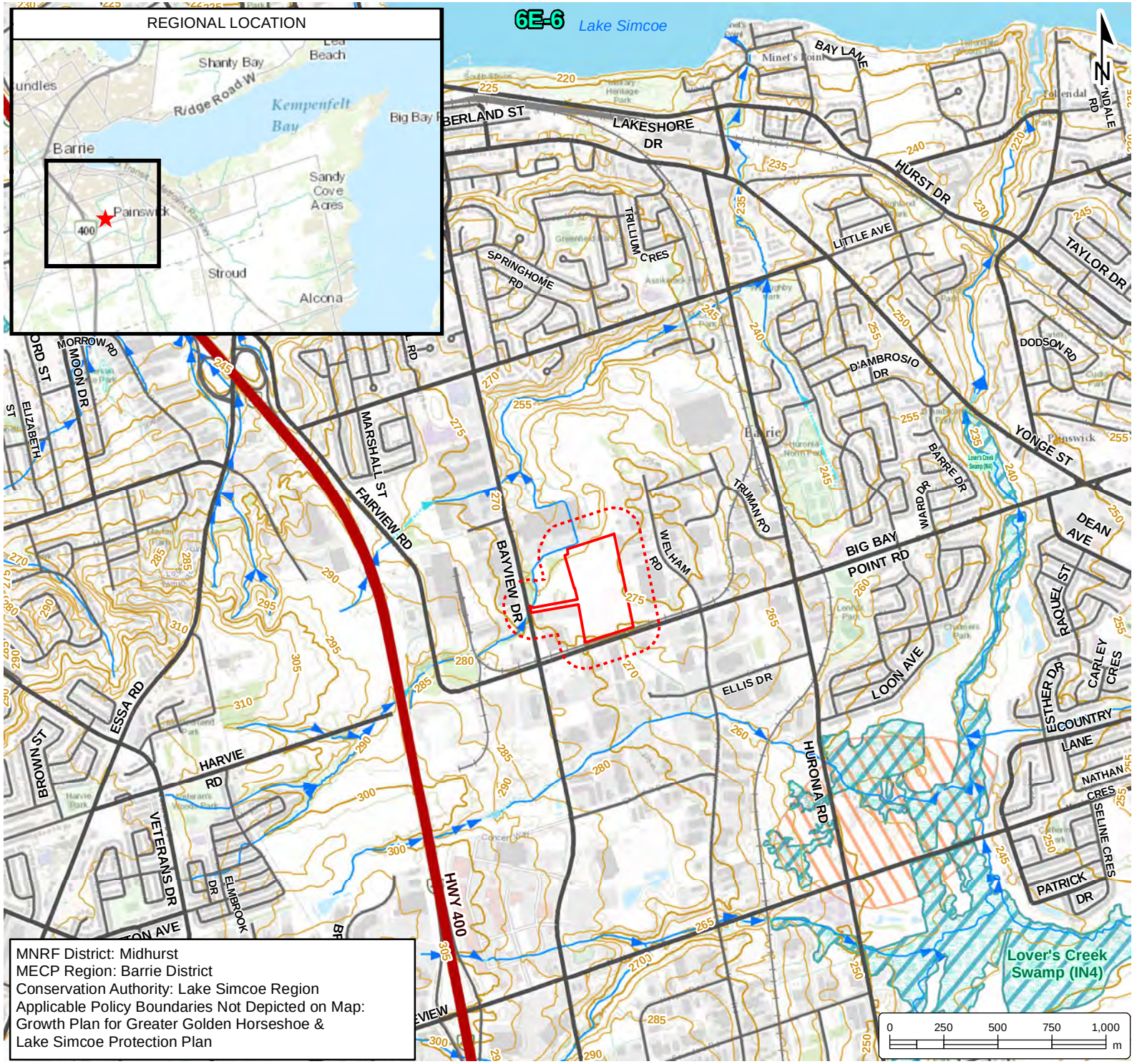
Glossary of Terms

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

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



MNRF District: Midhurst
MECP Region: Barrie District
Conservation Authority: Lake Simcoe Region
Applicable Policy Boundaries Not Depicted on Map:
Growth Plan for Greater Golden Horseshoe &
Lake Simcoe Protection Plan

ENVIRONMENTAL IMPACT STUDY

TONLU HOLDINGS LTD.
Bayview Drive and Big Bay Point Road,
Barrie, Ontario

LEGEND

- Site (Phase 1)
- 120 m Adjacent Lands
- Highway
- Major Road
- Minor Road
- Railroad
- Watercourse, Intermittent
- Watercourse, Permanent
- Contour 5m Interval (Major)
- Contour 5m Interval (Minor)
- Unevaluated Wetlands
- Provincially Significant Wetlands
- Water Area
- Deer Wintering Area (Stratum 2)
- Ecodistrict

Notes:
- Base mapping features are © Queen's Printer of Ontario, 2019 (this does not constitute an endorsement by the Ministry of Natural Resources and Forestry or the Ontario Government).
- Distances on this plan are in metres and can be converted to feet by dividing by 0.3048.
- Cambium Inc. makes every effort to ensure this map is free from errors but cannot be held responsible for any damages due to error or omissions. This map should not be used for navigation or legal purposes. It is intended for general reference use only.

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SITE LOCATION AND NATURAL HERITAGE POLICY AREAS

Project No.: 10758-002		Date: July 2021 Rev.:	
Scale: 1:25,000		Projection: NAD 1983 UTM Zone 17N	
Created by: DJL	Checked by: JPP	Figure:	1

O:\GIS\MXDs\10700-10799\10758-002 Tonlu Holdings Limited - EIS - Big Bay Point Road & Bayview Drive, Barrie\2021-07-05 FIG 1 - Site Location and Policy Areas.mxd

ENVIRONMENTAL IMPACT STUDY

TONLU HOLDINGS LTD.

Bayview Drive and Big Bay Point Road, Barrie, Ontario

LEGEND

- Site (Phase 1)
- 120 m Adjacent Lands
- Amphibian Breeding Survey Station (MMP)
- Breeding Bird Survey Station (BBS)
- Vegetation Communities
- Potential Butternut
- Butternut (Plantings)
- Field Verified Wetland
- Whiskey Creek
- Reach Break
- Culvert

VEGETATION COMMUNITIES

1: CUM1 ; Cultural Meadow
2: MAMM1-2; Cattail Graminoid Mineral Meadow Marsh
3: FODM8-1; Fresh - Moist Poplar Deciduous Forest
4: FOMM2-2; Dry - Fresh White Pine - Sugar Maple Mixed Forest
5: CUW1; Cultural Woodland
6: MEGM3; Dry-Fresh Graminoid Meadow

Notes:
- Base map underlay is from Permissible Work and Storage Area, for Boundary Road Swing Bridge Replacement Trent-Severn Waterway, by D.A. Hutcwith, dated October 10, 2019, project no. R.030025.844, drawing no. 2.
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Tel: (705) 742.7900 Fax: (705) 742.7907
www.cambium-inc.com

NATURAL HERITAGE FEATURES & SURVEY STATIONS

Project No.: 10758-002		Date: July 2021	
Scale: 1:3,064		Projection: NAD 1983 UTM Zone 17N	
Created by: DJL	Checked by: JPP	Figure:	**2**

O:\GIS\MXD\s10700-10799\10758-002 Tonlu Holdings Limited - EIS - Big Bay Point Road & Bayview Drive, Barrie\2021-06-01 FIG 2 - Natural Heritage Features & Survey Stations.mxd

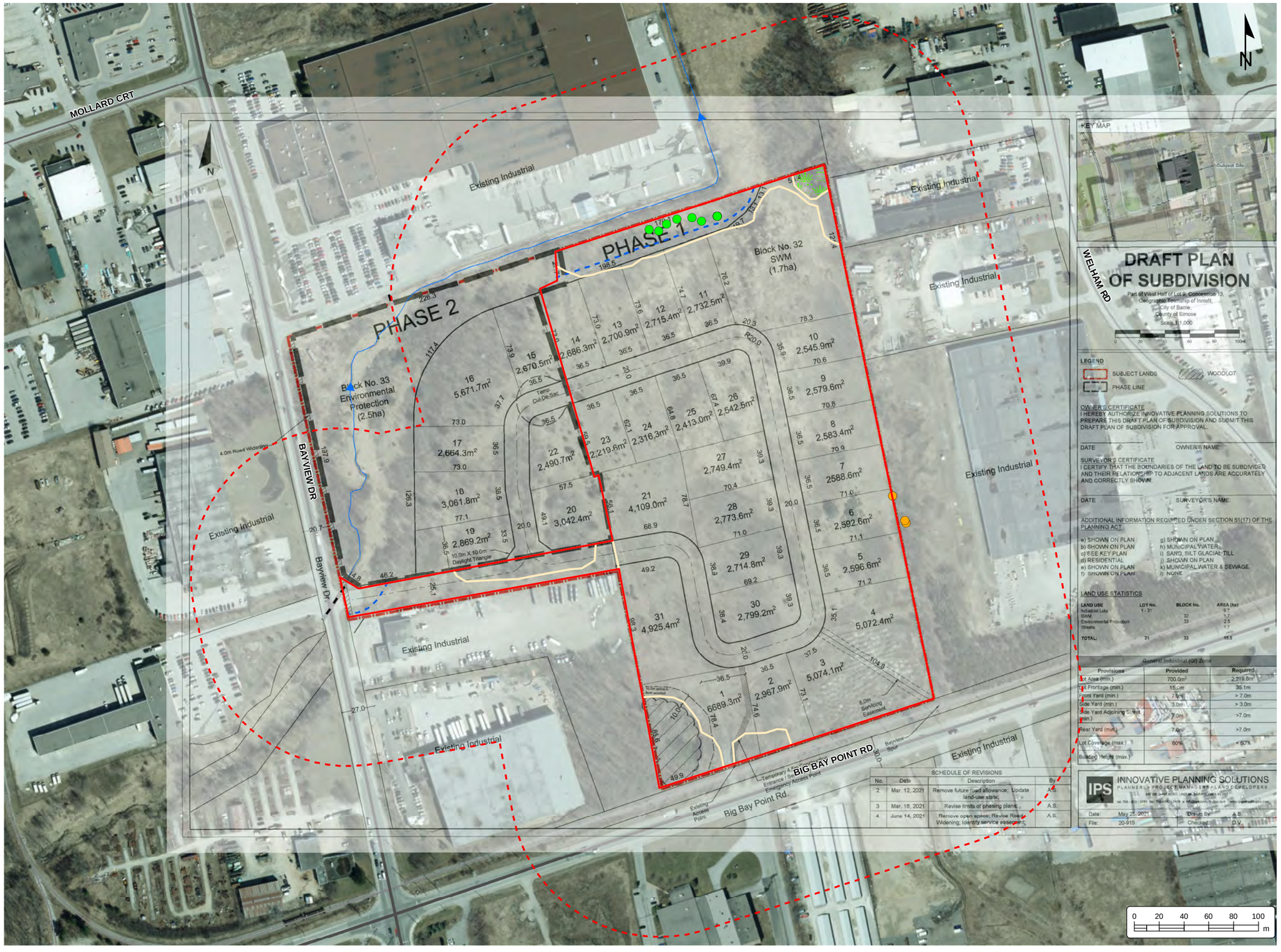
ENVIRONMENTAL IMPACT STUDY

TONLU HOLDINGS LTD.

Bayview Drive and Big Bay Point Road, Barrie, Ontario

LEGEND

- Site (Phase 1)
- 120 m Adjacent Lands
- Field Verified Wetland
- Potential Butternut
- Butternut (Plantings)
- Whiskey Creek
- Vegetation Communities
- 30 m Vegetation Protection Zone (VPZ)
- Culvert



KEY MAP

DRAFT PLAN OF SUBDIVISION

Part of West Half of Lot 9, Concession 13
Geographic Township of Innisfil
City of Barrie,
County of Simcoe
Scale 1:1,000

LEGEND
SUBJECT LANDS
PHASE LINE
WOODLOT

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

DATE OWNER'S NAME:

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

DATE SURVEYOR'S NAME:

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

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

LAND USE STATISTICS

LAND USE	LOT No.	BLOCK No.	AREA (ha)
Industrial Lots	1 - 31		9.7
SWM		32	1.7
Environmental Protection		33	2.5
Streets			1.7
TOTAL:	31	33	15.5

General Industrial (GI) Zone

Provisions	Provided	Required
Lot Area (min.)	700.0m²	2,219.6m²
Lot Frontage (min.)	15.0m	35.1m
Front Yard (min.)	7.0m	> 7.0m
Side Yard (min.)	3.0m	> 3.0m
Side Yard Adjoining Street (min.)	7.0m	>7.0m
Rear Yard (min.)	7.0m	>7.0m
Lot Coverage (max.)	60%	< 60%
Building Height (max.)	-	-

SCHEDULE OF REVISIONS

No.	Date	Description	By
2	Mar. 12, 2021	Remove future road allowance; Update land-use stats;	A.S.
3	Mar. 18, 2021	Revise limits of phasing plans;	A.S.
4	June 14, 2021	Remove open space; Revise Road Widening; Identify service easement;	A.S.

IPS INNOVATIVE PLANNING SOLUTIONS
PLANNERS | PROJECT MANAGERS | LAND DEVELOPERS

Date: May 25, 2021 Drawn By: A.S.
File: 20-915 Checked: D.V.

Notes:
- Base map underlay is from Permissible Work and Storage Area, for Boundary Road Swing Bridge Replacement Trent-Severn Waterway, by D.A. Huctwith, dated October 10, 2019, project no. R.030025.844, drawing no. 2.
- Distances on this plan are in metres and can be converted to feet by dividing by 0.3048.
- Cambium Inc. makes every effort to ensure this map is free from errors but cannot be held responsible for any damages due to error or omissions. This map should not be used for navigation or legal purposes. It is intended for general reference use only.

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NATURAL HERITAGE CONSTRAINTS

Project No.: 10758-002	Date: July 2021
Scale: 1:3,000	Projection: NAD 1983 UTM Zone 17N
Created by: DJL	Checked by: JPP
Figure: 3	

O:\GIS\MXDs\10700-10799\10758-002 Tonlu Holdings Limited - EIS - Big Bay Point Road & Bayview Drive, Barrie\2021-07-06 FIG 3 - Natural Heritage Constraints.mxd

Appendix A
Correspondence

Danielle Langlois

From: Kate Lillie <K.Lillie@lsrca.on.ca>
Sent: January 19, 2021 9:51 AM
To: Jeremy Prahl
Cc: Cambium File; Paul Neals; Darren Vella; Melinda Bessey
Subject: RE: Proposed Terms of Reference - Big Bay Point Road & Bayview Ave, Barrie - Phase 1 (10758-002)
Attachments: 2021-01-12 LTR EIS ToR Bayview Big Bay Point Barrie Phase 1.pdf

Hi Jeremy,

Thanks for your email and patience. I've reviewed the proposed Terms of Reference (attached) for an Environmental Impact Study (EIS) and have included a few additions and notes below, that will need to be addressed in the EIS as well:

- If habitat with potential to support SAR grassland birds is present, please complete a third breeding bird survey to confirm presence/absence of these species.
- If suitable amphibian breeding habitat is present, please conduct three evening amphibian surveys as per the Marsh Monitoring Protocol. I understand there may be vernal pools associated with Lover's creek on the phase 2 parcel.
- Please identify and assess functional movement corridors and linkage areas. Specifically, Level 1 features extend onto the adjacent property. The current concept would result in portions of these features being disconnected and isolated from the larger natural heritage system. Note that maintaining connectivity on the landscape will be critical for demonstrating no negative impact to these features.
- Please confirm the boundary of any wetland and/or woodland features on the property through a staking exercise with LSRCA. A site visit fee may apply.
- Any approved loss of woodland or wetland features may be subject to LSRCA's Ecological Offsetting Policy.
- Please include a figure that shows the proposed development and limit of disturbance on a current, high quality orthoimage.
- Demonstrate conformity with all applicable natural heritage legislation and policies.

If you have any questions or concerns with what I've provided, please let me know.

Kind regards,

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

Please note: the LSRCA Board of Directors approved a change to our Fee Policy. The new fees will take effect on January 1, 2021. Please click here for the new fee schedule.

Twitter: @LSRCA
Facebook: LakeSimcoeConservation

From: Jeremy Prahl <Jeremy.Prahl@cambium-inc.com>
Sent: January 12, 2021 3:42 PM
To: Kate Lillie <K.Lillie@lsrca.on.ca>
Cc: Cambium File <file@cambium-inc.com>; Paul Neals <paul@orionenvironmentalsolutions.com>; Darren Vella <dvella@ipsconsultinginc.com>
Subject: Proposed Terms of Reference - Big Bay Point Road & Bayview Ave, Barrie - Phase 1 (10758-002)

Good afternoon Kate,

Further to our recent discussion, please see attached a letter outlining our proposed Terms of Reference (ToR) for an Environmental Impact Study (EIS) on the Phase 1 lands at Big Bay Point Road and Bayview Drive, in the City of Barrie. The landowner has proposed a phased development approach whereby the parcel fronting on Big Bay Point Road would be developed separately/first. This would allow for natural heritage concerns associated with more constrained Phase 2 lands, which are bisected by Whiskey Creek, to be addressed separately while the Phase 1 development approvals proceed. Further details are provided in the attached letter.

We kindly request that you review the proposed EIS ToR for Phase 1 and provide confirmation as to whether they are consistent with LSRCA expectations. We look forward to hearing from you.

Thanks,
Jeremy

Jeremy Prahl, B.Sc., EP, CAN-CISEC
Project Manager / Senior Biologist

Cambium Inc. - Barrie
Environmental | Building Sciences | Geotechnical | Construction Monitoring
p: 705.719.0700 x 412 | **c:** 249.359.0689 | **toll:** 866.217.7900 | **w:** cambium-inc.com

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Peterborough, ON
K9H 1G5

Locations
Peterborough
Kingston
Barrie
Oshawa

Laboratory
Peterborough

Professional Engineers Ontario

APGO

January 12, 2021

Lake Simcoe Region Conservation Authority
120 Bayview Parkway,
Newmarket, ON L3Y 3W3

Attn: Kate Lillie
Natural Heritage Ecologist

Re: Proposed Terms of Reference for Environmental Impact Study at Bayview Drive and Big Bay Point Road, City of Barrie, Ontario
Cambium Reference No.: 10758-002

Dear Ms. Lillie,

Cambium has been retained by Tonlu Holdings Limited (THL) to complete an Environmental Impact Study (EIS) at an unnumbered property at the intersection of Big Bay Point Road and Bayview Drive, in the City of Barrie, Ontario (the Site). The undeveloped “L-shaped” property of interest consists of two parcels located northeast of the subject intersection, with frontage on both municipal roads (herein referred to as the Bayview parcel and the Big Bay Point parcel, based on road frontage). Currently, THL is proposing a phased commercial/industrial development whereby the two parcels would be developed separately and sequentially. A pre-consultation meeting was held with LSRCA Planning and Natural Heritage Ecology staff on November 29, 2020, to discuss the proposed development concept as it relates to existing site conditions and LSRCA review.

Consistent with the phased development approach depicted on the attached Draft Plan of Subdivision, Cambium has developed draft Terms of Reference (TOR) for an EIS on the Big Bay Point parcel (i.e., Phase 1 lands). Approximately 10 years ago, the subject parcel was cleared and graded by a previous landowner, in preparation for commercial development. As result, the parcel is highly disturbed, with remnant soil stockpiles and minimal topsoil coverage. Whiskey Creek runs along the northern boundary of this parcel, as a result of a historical channel realignment around the neighbouring facility (i.e., The Source). The following draft ToR are proposed for the EIS, which will be required in

support of future development and LSRCA Regulated Area Work Permit applications:

- Consult with City and LSRCA staff, as required, to determine their interest/concerns regarding the proposed development and study requirements.
- Compile and review applicable background information and environmental mapping pertaining to the parcel.
- Conduct a survey for SAR bat maternity roost trees, according to the current MNRF Midhurst District Protocol (2015), to assess the parcel for SAR bat habitat in treed areas during the leaf-off period.
- Conduct a two-season vascular plant survey on the parcel, in late spring and mid-summer. This includes a survey for Butternut and associated health assessments, as required.
- Classify existing vegetation communities on the parcel, according to the Ecological Land Classification System for Southern Ontario (Lee et. al., 1998), and evaluate them for sensitivity, rarity, and botanical quality.
- 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 existing conditions.
- Undertake a Species at Risk (SAR) screening (i.e., Rare, Threatened and Endangered Species Analysis) to asses for potential SAR habitat and evaluate compliance with the provincial Endangered Species Act, 2007. This includes reviewing species occurrence records as well as based on the habitat present on and adjacent to the subject property. The preliminary screening will follow the MECP Guide to Preliminary Screening for Species at Risk (May 2019). Additional surveys may be required if habitat to support certain species is identified.
- 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. Note that the feature-based water balance analysis, to be completed as part of a separate hydrogeological study, will be summarized in the EIS. Any anticipated adverse hydrologic impacts to natural heritage features will be addressed.

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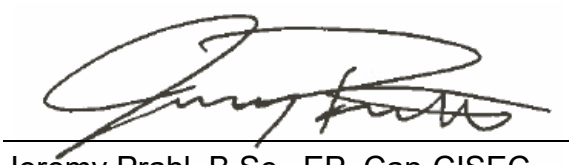
- Demonstrate conformity with the applicable policies and plans within the Lake Simcoe watershed, including: City of Barrie Official Plan, Provincial Policy Statement, 2020, Lake Simcoe Protection Act, Conservation Authorities Act, and O.Reg. 179/06.
- Develop an appropriate avoidance, mitigation, and/or restoration strategy, to address the potential impacts identified. Recommendations are to include proposed updates to Schedule H of the City of Barrie Official Plan, based on our findings.
- Circulate a final report with supporting figures to LSRCA and the City, for review and approval.

We kindly request that LSRCA review and provide comments on the above proposed EIS Terms of Reference. If you have any questions related to above, please don't hesitate to contact me directly.

Best regards,



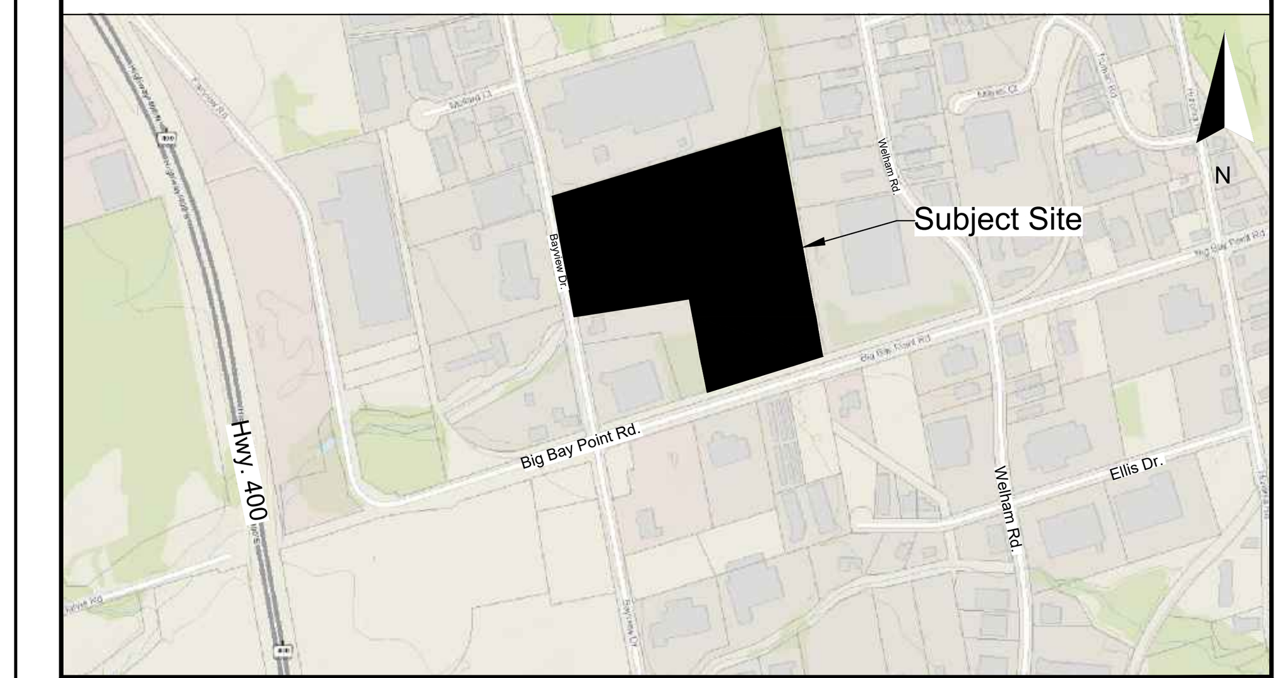
Jeremy Prahl, B.Sc., EP, Can-CISEC
Project Manager / Senior Ecologist

JPP/djl

Encl. *Draft Plan of Subdivision*

\\camfile\Projects\10700 to 10799\10758-002 Tonlu Holdings Limited - EIS - Big Bay Point Road & Bayview Drive, Barrie\Correspondence\Letters\2021-01-04 LTR EIS ToR Bayview Big Bay Point Barrie Phase 1.docx

KEY MAP



DRAFT PLAN OF SUBDIVISION

Part of West Half of Lot 9, Concession 13,
Geographic Township of Innisfil,
City of Barrie,
County of Simcoe

Scale 1:1,000

0 20 40 60 80 100m

LEGEND

SUBJECT LANDS

PHASE LINE

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

DATE

OWNER'S NAME:

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

DATE

SURVEYOR'S NAME:

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

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

LAND USE STATISTICS

LAND USE	LOT No.	BLOCK No.	AREA (ha)
Industrial Lots	1 - 34		10.0
SWM		35	0.6
Open Space		36	0.1
Environmental Protection		37	2.3
Streets			2.5
TOTAL:	**34**	**37**	**15.5**

General Industrial (GI) Zone

Provisions	Provided	Required
Lot Area (min.)	700.0m²	2,044.0m²
Lot Frontage (min.)	15.0m	28.4m
Front Yard (min.)	7.0m	> 7.0m
Side Yard (min.)	3.0m	> 3.0m
Side Yard Adjoining Street (min.)	7.0m	>7.0m
Rear Yard (min.)	7.0m	>7.0m
Lot Coverage (max.)	60%	<60%
Building Height (max.)	--	--

IPS
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647 WELHAM ROAD, UNIT 9A, BARRIE, ON, L4N 0B7
tel: 705 • 812 • 3281 fax: 705 • 812 • 3438 e: info@ipsconsultinginc.com www.ipsconsultinginc.com

Date:	December 2, 2020	Drawn By:	A.S.
File:	20-915	Checked:	D.V.

Appendix B
Draft Plan of Subdivision

KEY MAP

DRAFT PLAN OF SUBDIVISION

Part of West Half of Lot 9, Concession 13,
Geographic Township of Innisfil,
City of Barrie,
County of Simcoe

Scale 1:1,000

0 20 40 60 80 100m

LEGEND

▨ SUBJECT LANDS

▨ PHASE LINE

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

DATE

TONLU HOLDINGS INC.

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

DATE

C. WAHBA SURVEYING LTD.

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

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

LAND USE STATISTICS

LAND USE	LOT No.	BLOCK No.	AREA (ha)
Industrial Lots	1 - 31		9.7
SWM		32	1.7
Environmental Protection		33	2.5
Streets			1.7
TOTAL:	**31**	**33**	**15.6**

General Industrial (GI) Zone		
Provisions	**Provided**	**Required**
Lot Area (min.)	700.0m^2	2,219.6m^2
Lot Frontage (min.)	15.0m	35.1m
Front Yard (min.)	7.0m	> 7.0m
Side Yard (min.)	3.0m	> 3.0m
Side Yard Adjoining Street (min.)	7.0m	>7.0m
Rear Yard (min.)	7.0m	>7.0m
Lot Coverage (max.)	60%	< 60%
Building Height (max.)	--	--

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tel: 705 • 812 • 3281 fax: 705 • 812 • 3438 e: info@ipsconsultinginc.com www.ipsconsultinginc.com

Date:	August 9, 2021	Drawn By:	A.S.
File:	20-915	Checked:	D.V.

Appendix C
Photographic Log

PROJECT NUMBER: 10758-002 DATE: April – July, 2021 LOCATION: 80 Big Bay Point Road, Barrie Field Staff: Danielle Langlois

Photo Appendix

Looking southeast at area of historical fill piles

Looking north at Community 2

PROJECT NUMBER:	10758-002	DATE:	April – July, 2021	LOCATION:	80 Big Bay Point Road, Barrie	Field Staff:	Danielle Langlois

Photo Appendix

Looking southeast at the shoreline

Looking west at the Whiskey Creek riparian corridor

PROJECT NUMBER:	10758-002	DATE:	April – July, 2021	LOCATION:	80 Big Bay Point Road, Barrie	Field Staff:	Danielle Langlois

Photo Appendix

Looking west at the Whiskey Creek riparian corridor

Looking west at Whiskey Creek

Appendix D
Vegetation Species List

VEGETATION COMMUNITY CLASSIFICATION: CUM1

COMMUNITY #: 1

LOCATION: 80 Big Bay Point Road, Barrie

COORDINATES: 44.3532423, -79.6768747

PROJECT NUMBER: 10758-002

DATE: May 28, 2021 July 06, 2021

PROJECT MANAGER: Jeremy Prahl

FIELD STAFF: Alex Kissel Keegan McKitterick

FIELD SHEET – Vegetation Species List

Common Name	Scientific Name	Family	CoW	CoC	SARA	SARO	S-Rank
Alleghany Blackberry	*Rubus allegheniensis*	*Rosaceae*	3	2			S5
Annual Fleabane	*Erigeron annuus*	*Asteraceae*	3	0			S5
Balsam Poplar	*Populus balsamifera*	*Salicaceae*	-3	4			S5
Bitter Wintercress	*Barbarea vulgaris*	*Brassicaceae*	0				SNA
Black Locust	*Robinia pseudo-accacia*	*Fabaceae*	3				SNA
Black Medick	*Medicago lupulina*	*Fabaceae*	3				SNA
Black-eyed Susan	*Rudbeckia hirta var. pulcherrima*	*Asteraceae*	3	0			S5
Butter-and-eggs	*Linaria vulgaris*	*Scrophulariaceae*	5				SNA
Common Dandelion	*Taraxacum officinale*	*Asteraceae*	3				SNA
Common Motherwort	*Leonurus cadiaca*	*Lamiaceae*	5				SNA
Common Mullein	*Verbascum thapsus*	*Scrophulariaceae*	5				SNA
Common Self-heal	*Prunella vulgaris ssp. vulgaris*	*Lamiaceae*	0				SNA
Common Yarrow	*Achillea millefolium*	*Asteraceae*	3				SNA
Crested Sedge	*Carex cristatella*	*Cyperaceae*	-3	3			S5
Deptford Pink	*Dianthus armeria ssp. armeria*	*Caryophyllaceae*	5				SNA
English Plantain	*Plantago lanceolata*	*Plantaginaceae*	3				SNA
Field Horsetail	*Equisetum arvense*	*Equisetaceae*	0	0			S5
Garden Asparagus	*Asparagus officinalis*	*Liliaceae*	3				SNA
Garden Bird's-foot Trefoil	*Lotus corniculatus*	*Fabaceae*	3				SNA
Graceful Sedge	*Carex gracillima*	*Cyperaceae*	3	4			S5
Kentucky Bluegrass	*Poa pratensis*	*Poaceae*	3	0			S5
Large Bird's-foot Trefoil	*Lotus uliginosus*	*Fabaceae*					SNA
Large-toothed Aspen	*Populus grandidentata*	*Salicaceae*	5	5			S5
Orchard Grass	*Dactylis glomerata*	*Poaceae*	3				SNA
Oxeye Daisy	*Leucanthemum vulgare*	*Asteraceae*	5				SNA
Pineappleweed	*Matricaria discoidea*	*Asteraceae*	3				SNA

Red Clover	*Trifolium pratense*	*Fabaceae*	3				SNA
Red Elderberry	*Sambucus racemosa ssp. pubens var. pubens*	*Caprifoliaceae*	3	5			S5
Red Raspberry	*Rubus idaeus*	*Rosaceae*	3	2			S5
Reed Canarygrass	*Phalaris arundinacea*	*Poaceae*	-3	0			S5
Rosy Sedge	*Carex rosea*	*Cyperaceae*	5	2			S5
Sensitive Fern	*Onoclea sensibilis*	*Dryopteridaceae*	-3	4			S5
Small Hop Clover	*Trifolium dubium*	*Fabaceae*	3				SNA
Smooth Brome	*Bromus inermis*	*Poaceae*	5				SNA
Spotted Knapweed	*Centaurea stoebe*	*Asteraceae*	5				SNA
Tatarian Honeysuckle	*Lonicera tatarica*	*Caprifoliaceae*	3				SNA
Trembling Aspen	*Populus tremuloides*	*Salicaceae*	0	2			S5
White Sweet-clover	*Melilotus albus*	*Fabaceae*	3				SNA
Wild Carrot	*Daucus carota*	*Apiaceae*	5				SNA
Woodland Strawberry	*Fragaria vesca*	*Rosaceae*	3	4			S5
Yellow Trout Lily	*Erythronium americanum*	*Liliaceae*	5	5			S5

NOTES: Dominant understorey species included Trembling Aspen, Balsam Poplar and Red Raspberry. Dominant ground cover included Kentucky Bluegrass, Crested Sedge, and Orchard Grass. Single white pine left standing in Central East portion and small damp portions likely a result of poor drainage of spring thaw led to small patches of sensitive fern mixed with upland vegetation.

VEGETATION COMMUNITY PHOTOS:

VEGETATION COMMUNITY CLASSIFICATION: MAMM1-2: | COMMUNITY #: 2 | LOCATION: 80 Big Bay Point Road, Barrie | COORDINATES: 44.3548167, -79.6762265

PROJECT NUMBER: 10758-002 | DATE: May 28, 2021 / July 06, 2021 | PROJECT MANAGER: Jeremy Prahl | FIELD STAFF: Alex Kissel, Keegan McKitterick

FIELD SHEET – Vegetation Species List

Common Name	Scientific Name	Family	CoW	CoC	SARA	SARO	S-Rank
Narrow-leaved Cattail	Typha angustifolia	Typhaceae	-5				SNA
Red Maple	Acer rubrum	Aceraceae	0	4			S5
Sensitive Fern	Onoclea sensibilis	Dryopteridaceae	-3	4			S5
Trembling Aspen	Populus tremuloides	Salicaceae	0	2			S5
Bittersweet Nightshade	*Solanum dulcamara*	*Solanaceae*	0				SNA
Spotted Joe Pye Weed	*Eutrochium maculatum var. maculatum*	*Asteraceae*	-5	3			S5
Red-osier Dogwood	*Cornus sericea*	*Cornaceae*	-3	2			S5

VEGETATION COMMUNITY PHOTOS:

VEGETATION COMMUNITY CLASSIFICATION: FODM8-1 COMMUNITY #: 3 LOCATION: 80 Big Bay Point Road, Barrie COORDINATES: 44.3550958, -79.6757024

PROJECT NUMBER: 10758-002 DATE: May 28, 2021 / July 6, 2021 PROJECT MANAGER: Jeremy Prahl FIELD STAFF: Alex Kissel / Keegan McKitterick

FIELD SHEET – Vegetation Species List

Common Name	Scientific Name	Family	CoW	CoC	SARA	SARO	S-Rank
Basswood	*Tilia americana*	*Tiliaceae*	3	4			S5
Black Cherry	*Prunus serotina*	*Rosaceae*	3	3			S5
Butternut	*Juglans cinerea*	*Juglandaceae*	3	6	END	END	S2?
Canada Goldenrod	*Solidago canadensis var. canadensis*	*Asteraceae*	3	1			S5
Chokecherry	*Prunus virginiana var. virginiana*	*Rosaceae*	3	2			S5
Cottony Willow	*Salix eriocephala*	*Salicaceae*	-3	4			S5
Eastern Prickly Gooseberry	*Ribes cynosbati*	*Grossulariaceae*	3	4			S5
European Buckthorn	*Rhamnus cathartica*	*Rhamnaceae*	0				SNA
European Buckthorn	*Rhamnus cathartica*	*Rhamnaceae*	0				SNA
Field Horsetail	*Equisetum arvense*	*Equisetaceae*	0	0			S5
Garlic Mustard	*Alliaria petiolata*	*Brassicaceae*	0				SNA
Herb-Robert	*Geranium robertianum*	*Geraniaceae*	3	2			S5
Northern Red Oak	*Quercus rubra*	*Fagaceae*	3	6			S5
Paper Birch	*Betula papyrifera*	*Betulaceae*	3	2			S5
Poison Ivy	*Toxicodendron radicans*	*Anacardiaceae*	0	2			S5
Red Ash	*Fraxinus pennsylvanica*	*Oleaceae*	-3	3			S4
Red-osier Dogwood	*Cornus sericea*	*Cornaceae*	-3	2			S5
Sugar Maple	*Acer saccharum*	*Aceraceae*	3	4			S5
Thicket Creeper	*Parthenocissus vitacea*	*Vitaceae*	3	4			S5
Trembling Aspen	*Populus tremuloides*	*Salicaceae*	0	2			S5
Tufted Vetch	*Vicia cracca*	*Fabaceae*	5				SNA
White Elm	*Ulmus americana*	*Ulmaceae*	-3	3			S5
White Trillium	*Trillium grandiflorum*	*Liliaceae*	3	5			S5
Wild Lily-of-the-valley	*Maianthemum canadense*	*Liliaceae*	3	5			S5
Wild Sarsaparilla	*Aralia nudicaulis*	*Araliaceae*	3	4			S5
Yellow Trout Lily	*Erythronium americanum*	*Liliaceae*	5	5			S5

NOTES: Dominant canopy cover was Trembling Aspen. Dominant Sub-canopy and included American Basswood and White Elm.

VEGETATION COMMUNITY PHOTOS:

VEGETATION COMMUNITY CLASSIFICATION: FOMM2-2

COMMUNITY #: 4

LOCATION: Big Bay Point Rd. Barrie

COORDINATES: 44.3508986, -79.677067

PROJECT NUMBER: 10758-002

DATE: May 28, 2021 July 06, 2021

PROJECT MANAGER: Jeremy Prahl

FIELD STAFF: Alex Kissel Keegan McKitterick

FIELD SHEET – Vegetation Species List

Common Name	Scientific Name	Family	CoW	CoC	SARA	SARO	S-Rank
Black Cherry	*Prunus serotina var. serotina*	*Rosaceae*	3	3			S5
Broad-leaved Enchanter's Nightshade	*Circaea canadensis*	*Onagraceae*	3	2			S5
Eastern Prickly Gooseberry	*Ribes cynosbati*	*Grossulariaceae*	3	4			S5
Eastern White Pine	*Pinus strobus*	*Pinaceae*	3	4			S5
Garlic Mustard	*Alliaria petiolata*	*Brassicaceae*	0				SNA
Large False Solomon's Seal	*Maianthemum racemosum*	*Liliaceae*	3	4			S5
May-Apple	*Podophyllum peltatum*	*Berberidaceae*	3	5			S5
Red Baneberry	*Actaea rubra ssp. rubra*	*Ranunculaceae*	3	6			S5
Spinulose Wood Fern	*Dryopteris carthusiana*	*Dryopteridaceae*	-3	5			S5
Sugar Maple	*Acer saccharum*	*Aceraceae*	3	4			S5
White Ash	*Fraxinus americana*	*Oleaceae*	3	4			S4
White Trillium	*Trillium grandiflorum*	*Liliaceae*	3	5			S5

NOTES: Mature white pine and sugar maple, location of two removed butternut

VEGETATION COMMUNITY PHOTOS:

VEGETATION COMMUNITY CLASSIFICATION: CUW1

COMMUNITY #: 5

LOCATION: 80 Big Bay Point Rd, Barrie

COORDINATES: 44.350468, -79.6758851

PROJECT NUMBER: 10758-002

DATE: May 28, 2021 July 06, 2021

PROJECT MANAGER: Jeremy Prahl

FIELD STAFF: Alex Kissel Keegan McKitterick

FIELD SHEET – Vegetation Species List

Common Name	Scientific Name	Family	CoW	CoC	SARA	SARO	S-Rank
Black Raspberry	*Rubus occidentalis*	*Rosaceae*	5	2			S5
Broad-leaved Helleborine	*Epipactis helleborine*	*Orchidaceae*	3				SNA
Canada Goldenrod	*Solidago canadensis var. canadensis*	*Asteraceae*	3	1			S5
Chokecherry	*Prunus virginiana var. virginiana*	*Rosaceae*	3	2			S5
Common Ragweed	*Ambrosia artemisiifolia*	*Asteraceae*	3	0			S5
Eastern Bracken Fern	*Pteridium aquilinum var. latiusculum*	*Dennstaedtiaceae*	3	2			S5
Everlasting Pea	*Lathyrus latifolius*	*Fabaceae*	5				SNA
Fringed Yellow Loosestrife	*Lysimachia ciliata*	*Primulaceae*	-3	4			S5
Large-toothed Aspen	*Populus grandidentata*	*Salicaceae*	5	5			S5
Riverbank Grape	*Vitis riparia*	*Vitaceae*	0	0			S5
Staghorn Sumac	*Rhus typhina*	*Anacardiaceae*	3	1			S5
Trembling Aspen	*Populus tremuloides*	*Salicaceae*	0	2			S5

NOTES: Fairly open area dominated by both trembling and large tooth aspen

VEGETATION COMMUNITY PHOTOS:

VEGETATION COMMUNITY CLASSIFICATION: MEGM3 COMMUNITY #: 6 LOCATION: 80 Big Bay Point Road, Barrie COORDINATES: 44.3566172, -79.6833613

PROJECT NUMBER: 10758-002 DATE: May 28, 2021 PROJECT MANAGER: Jeremy Prahl FIELD STAFF: Alex Kissel

FIELD SHEET – Vegetation Species List

Common Name	Scientific Name	Family	CoW	CoC	SARA	SARO	S-Rank
Balsam Poplar	*Populus balsamifera*	Salicaceae	-3	4			S5
Black Cherry	*Prunus serotina*	Rosaceae	3	3			S5
Eastern White Pine	*Pinus strobus*	Pinaceae	3	4			S5
Kentucky Bluegrass	*Poa pratensis*	Poaceae	3	0			S5
Large-toothed Aspen	*Populus grandidentata*	Salicaceae	5	5			S5
Meadow Hawkweed	*Pilosella caespitosa*	Asteraceae	5				SNA
Orchard Grass	*Dactylis glomerata*	Poaceae	3				SNA
Red Raspberry	*Rubus idaeus*	Rosaceae	3	2			S5
Scots Pine	*Pinus sylvestris var. sylvestris*	Pinaceae	3				SNA
Trembling Aspen	*Populus tremuloides*	Salicaceae	0	2			S5
Woodland Strawberry	*Fragaria vesca*	Rosaceae	3	4			S5

NOTES: Dominant canopy cover was Balsam Poplar and Black Cherry. Sub- canopy dominants included White Pine and Trembling Aspen.

VEGETATION COMMUNITY PHOTOS:

Appendix E
Fish Species List

Table 1 - Fish Species List and Life History Information

Family	Common name	Scientific name	S-Rank	SARA	ESA	Tolerance [1]	Thermal Regime [1]	Spawning Months [1]	Spawning Habitat Preferences [2]															
									Water depth (m)				Cover		Substrate									
									0-1	1-2	2-5	5+	Submergent Vegetation	Emergent vegetation	Bedrock	Boulder	Cobble	Rubble	Gravel	Sand	Silt	Clay	Hard-pan Clay
Catostomidae	White Sucker	*Catostomus commersoni*	S5			Tolerant	Coolwater	April-June	X	X	-	-	low	low	-	-	-	med	high	med	-	-	-
Centrarchidae	Black Crappie	*Pomoxis nigromaculatus*	S4			Tolerant	Coolwater	May-June	X	X	X	-	high	high	-	-	-	-	high	high	high	-	-
Centrarchidae	Pumpkinseed	*Lepomis gibbosus*	S5			Intermediate	Warmwater	May-August	X	X	-	-	high	high	-	-	-	-	high	high	-	med	-
Centrarchidae	Rock Bass	*Ambloplites rupestris*	S5			Intermediate	Coolwater	May-June	X	X	-	-	low	low	-	-	high	high	high	med	med	med	-
Centrarchidae	Smallmouth Bass	*Micropterus dolomieu*	S5			Intermediate	Coolwater	May-June	X	X	-	-	low	low	med	-	-	high	high	ediur	-	-	-
Cottidae	Mottled Sculpin	*Cottus bairdi*	S5			Intermediate	Coolwater	April-May	X	-	-	-	-	-	-	high	high	high	high	high	-	-	-
Cottidae	Slimy Sculpin	*Cottus cognatus*	S5			Intolerant	Coldwater	April-May	X	X	X	X	-	-	-	high	high	high	high	low	low	-	-
Cyprinidae	Bluntnose Minnow	*Pimephales notatus*	S5			Intermediate	Warmwater	June-August	X	X	X	-	medium	medium	-	med	med	high	high	med	-	-	-
Cyprinidae	Creek Chub	*Semotilus atromaculatus*	S5			Intermediate	Coolwater	May-June	X	-	-	-	-	-	-	-	-	high	high	high	-	-	-
Cyprinidae	Blacknose Dace	*Rhinichthys atratulus*	S5			Intermediate	Coolwater	May-June	X	-	-	-	-	-	-	-	-	high	high	med	-	-	-
Cyprinidae	Golden Shiner	*Notemigonus crysoleucas*	S5			Intermediate	Coolwater	June-August	X	X	-	-	high	high	-	-	-	-	-	high	high	-	-
Cyprinidae	Longnose Dace	*Rhinichthys cataractae*	S5			Intermediate	Coolwater	May-July	X	X	-	-	-	-	-	-	-	med	high	high	med	-	-
Cyprinidae	Northern Redbelly Dace	*Phoxinus eos*	S5			Intermediate	Coolwater	May-July	X	X	-	-	high	-	-	-	-	-	med	high	high	-	-
Cyprinidae	Spottail Shiner	*Notropis hudsonius*	S5			Intermediate	Coolwater	May-June	X	X	X	-	medium	medium	-	-	med	med	high	high	-	-	-
Cyprinidae	Emerald Shiner	*Notropis atherinoides*	S5			Intermediate	Coolwater	June-August	-	-	-	-	low	low	-	med	med	high	high	high	-	-	-
Osmeridae	Rainbow Smelt	*Osmerus mordax*	S5			Intermediate	Coldwater	March-April	X	X	X	X	low	low	-	med	med	high	high	high	low	-	-
Percidae	Yellow Perch	*Perca flavescens*	S5			Intermediate	Coolwater	April-May	X	X	X	X	medium	medium	-	-	-	med	high	high	med	med	-
Percidae	Iowa Darter	*Etheostoma exile*	S5			Intermediate	Coolwater	April-June	X	-	-	-	medium	medium	-	-	-	high	high	high	high	-	-
Percidae	Logperch	*Percina caprodes*	S5			Intolerant	Warmwater	May-June	X	X	-	-	-	-	-	med	med	high	high	high	-	-	-
Salmonidae	Brook Trout	*Salvelinus fontinalis fontinalis*	S5			Intolerant	Coldwater	September-November	X	X	-	-	-	-	-	-	-	high	high	med	low	-	-
Umbridae	Central Mudminnow	*Umbra limi*	S5			Tolerant	Coolwater	April-May	X	-	-	-	high	high	-	-	-	-	-	-	high	-	-

Note:

A dash (-) indicated that the species was not reported to utilize a particular depth stratum, cover or substrate.

Tolerance refers to the ability of a species to adapt to environmental perturbations or anthropogenic stresses.

1 Eakins, R. J. (2018). Ontario Freshwater Fishes Life History Database. Version 4.81. Online database. (http://www.ontariofishes.ca), accessed 26 July 2018

2 Lane, J. A., Minns, C. K., & Portt, C. B. (1996). Spawning habitat characteristics of Great Lakes fishes (p. 47). Fisheries and Oceans Canada.

Appendix F
Bird Species List

VEGETATION COMMUNITY CLASSIFICATION: Cultural Meadow

LOCATION: 80 Big Bay Point Rd

COORDINATES: 44.3562929, -79.6830105

POINT COUNT #: 1

PROJECT NUMBER: 10758-002

DATES: May 31, 2021 June 07, 2021

PROJECT MANAGER: Jeremy Prahl

FIELD STAFF: Mackenzie Soden

FIELD SHEET – Bird Species List

May 31, 2021

Common Name	Scientific Name	Family	SARA	SARO	S-Rank	Breeding Evidence
American Crow	*Corvus brachyrhynchos*	*Corvidae*			S5B	X
American Goldfinch	*Spinus tristis*	*Fringillidae*			S5B	X
Baltimore Oriole	*Icterus galbula*	*Icteridae*			S4B	S
Black-capped Chickadee	*Poecile atricapillus*	*Paridae*			S5	X
Blue-headed Vireo	*Vireo solitarius*	*Vireonidae*			S5B	S
Field Sparrow	*Spizella pusilla*	*Passerellidae*			S4B	S
Gray Catbird	*Dumetella carolinensis*	*Mimidae*			S4B	S
House Finch	*Haemorhous mexicanus*	*Fringillidae*			SNA	S
House Wren	*Troglodytes aedon*	*Troglodytidae*			S5B	S
Mourning Dove	*Zenaida macroura*	*Columbidae*			S5	X
Ring-billed Gull	*Larus delawarensis*	*Laridae*			S5B,S4N	X
Song Sparrow	*Melospiza melodia*	*Passerellidae*			S5B	S
Warbling Vireo	*Vireo gilvus*	*Vireonidae*			S5B	S
Wild Turkey	*Meleagris gallopavo*	*Phasianidae*			S5	D

June 07, 2021

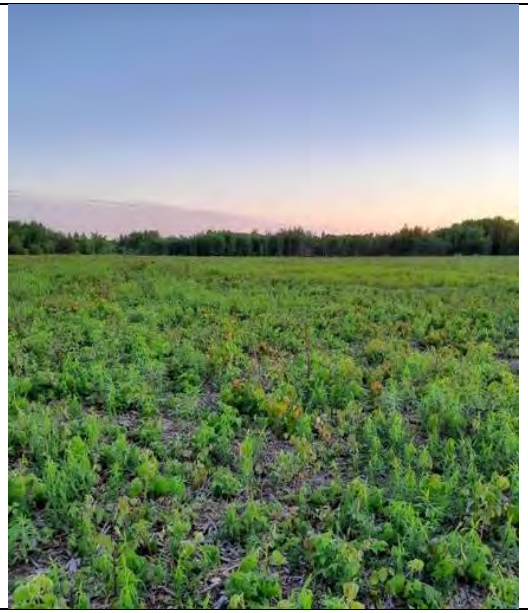
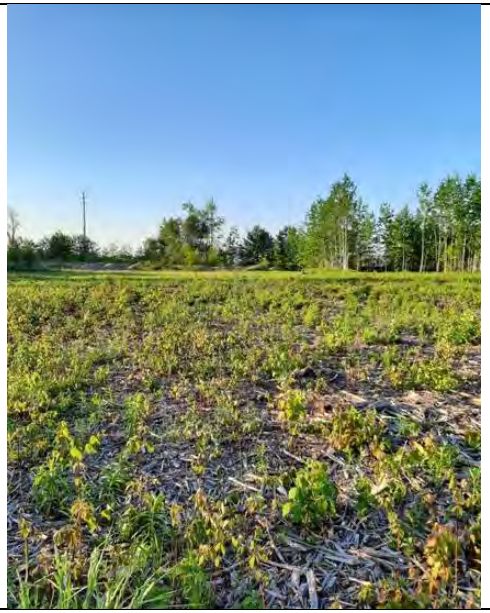
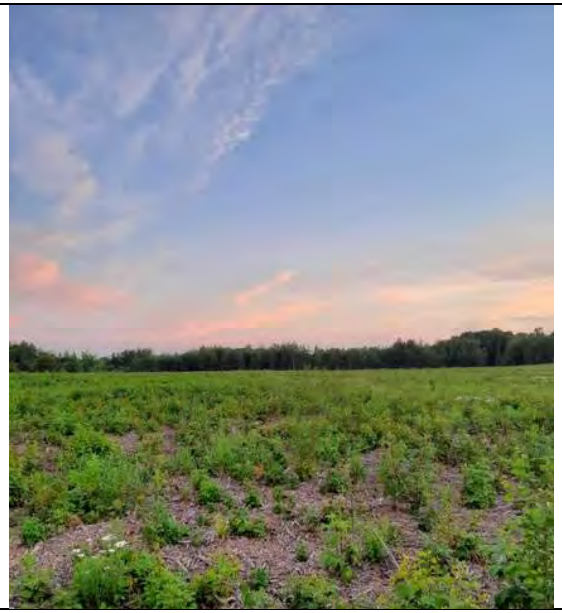
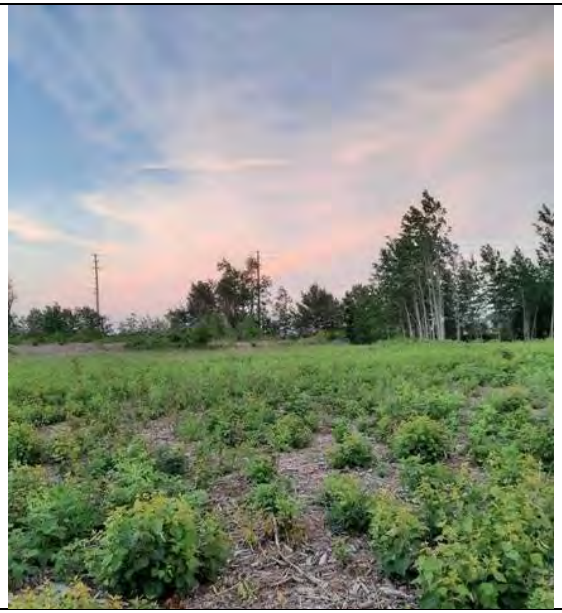
Common Name	Scientific Name	Family	SARA	SARO	S-Rank	Breeding Evidence
American Crow	*Corvus brachyrhynchos*	*Corvidae*			S5B	X
American Goldfinch	*Spinus tristis*	*Fringillidae*			S5B	H
American Redstart	*Setophaga ruticilla*	*Parulidae*			S5B	S
Black-billed Cuckoo	*Coccyzus erythropthalmus*	*Cuculidae*			S5B	S
Blue Jay	*Cyanocitta cristata*	*Corvidae*			S5	H
Brown-headed Cowbird	*Molothrus ater*	*Icteridae*			S4B	S
Eastern Phoebe	*Sayornis phoebe*	*Tyrannidae*			S5B	S
European Starling	*Sturnus vulgaris*	*Sturnidae*			SNA	H
House Wren	*Troglodytes aedon*	*Troglodytidae*			S5B	T
Ring-billed Gull	*Larus delawarensis*	*Laridae*			S5B,S4N	X
Song Sparrow	*Melospiza melodia*	*Passerellidae*			S5B	T
Warbling Vireo	*Vireo gilvus*	*Vireonidae*			S5B	T

X = Species observed in its breeding season (no breeding evidence)
H = Species observed in its breeding season in suitable nesting habitat
S= Singing male present, or breeding calls heard, in its breeding season in suitable nesting habitat
P= Pair observed in their breeding season in suitable nesting habitat
T= Permanent territory presumed through registration of territorial song on at least 2 days, a week apart, at the same place
D= Courtship or display between a male and a female or 2 males, including courtship feeding or copulation
V= Visiting probable nest site
X = Species observed in its breeding season (no breeding evidence)
CF= Adult carrying food for young
NE= Nest containing eggs

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
DD= Distraction display or injury feigning
NU= Used nest or egg shell found (occupied or laid within the period of study)
FY= Recently fledged young or downy young, including young incapable to sustain flight
AE= Adults leaving or entering nest site in circumstances indicating occupied nest
FS= Adult carrying faecal sac
NY= Nest with young seen or heard

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

VEGETATION COMMUNITY PHOTOS:

May 31, 2021	
	
June 07, 2021	
	

VEGETATION COMMUNITY CLASSIFICATION: Cultural Meadow

LOCATION: 80 Big Bay Point Rd

COORDINATES: 44.3562929, -79.6830105

POINT COUNT #: 2

PROJECT NUMBER: 10758-002

DATES: May 31, 2021 June 07, 2021

PROJECT MANAGER: Jeremy Prahl

FIELD STAFF: Mackenzie Soden

FIELD SHEET – Bird Species List

May 31, 2021

Common Name	Scientific Name	Family	SARA	SARO	S-Rank	Breeding Evidence
American Goldfinch	*Spinus tristis*	*Fringillidae*			S5B	X
Baltimore Oriole	*Icterus galbula*	*Icteridae*			S4B	S
Blue Jay	*Cyanocitta cristata*	*Corvidae*			S5	X
Blue-winged Teal	*Anas discors*	*Anatidae*			S4	S
Brown-headed Cowbird	*Molothrus ater*	*Icteridae*			S4B	H
Clay-colored Sparrow	*Spizella pallida*	*Passerellidae*			S4B	S
Eastern Phoebe	*Sayornis phoebe*	*Tyrannidae*			S5B	S
Field Sparrow	*Spizella pusilla*	*Passerellidae*			S4B	S
Gray Catbird	*Dumetella carolinensis*	*Mimidae*			S4B	S
Great Crested Flycatcher	*Myiarchus crinitus*	*Tyrannidae*			S4B	H
House Wren	*Troglodytes aedon*	*Troglodytidae*			S5B	S
Red-winged Blackbird	*Agelaius phoeniceus*	*Icteridae*			S4	H
Ring-billed Gull	*Larus delawarensis*	*Laridae*			S5B,S4N	X
Savannah Sparrow	*Passerculus sandwichensis*	*Passerellidae*			S4B	S
Song Sparrow	*Melospiza melodia*	*Passerellidae*			S5B	S
Warbling Vireo	*Vireo gilvus*	*Vireonidae*			S5B	S

June 07, 2021

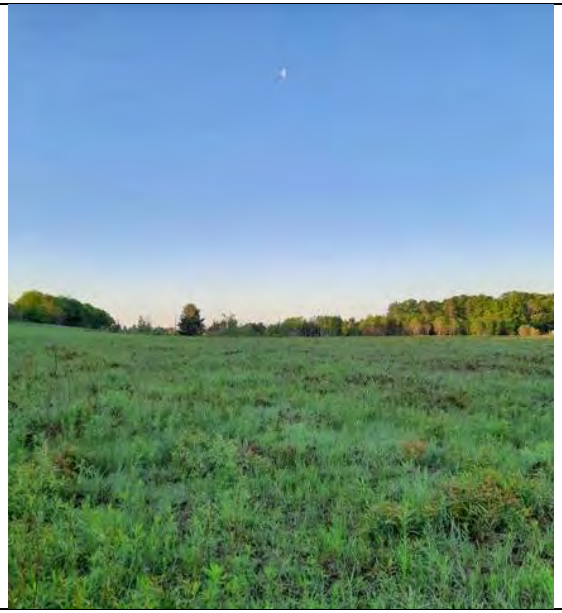
Common Name	Scientific Name	Family	SARA	SARO	S-Rank	Breeding Evidence
American Goldfinch	*Spinus tristis*	*Fringillidae*			S5B	H
Baltimore Oriole	*Icterus galbula*	*Icteridae*			S4B	T
Blue Jay	*Cyanocitta cristata*	*Corvidae*			S5	H
Cedar Waxwing	*Bombycilla cedrorum*	*Bombycillidae*			S5B	H
Chestnut-sided Warbler	*Setophaga pensylvanica*	*Parulidae*			S5B	S
Eastern Kingbird	*Tyrannus tyrannus*	*Tyrannidae*			S4B	P
House Wren	*Troglodytes aedon*	*Troglodytidae*			S5B	T
Killdeer	*Charadrius vociferus*	*Charadriidae*			S5B,S5N	H
Red-winged Blackbird	*Agelaius phoeniceus*	*Icteridae*			S4	S
Savannah Sparrow	*Passerculus sandwichensis*	*Passerellidae*			S4B	P
Song Sparrow	*Melospiza melodia*	*Passerellidae*			S5B	T
Warbling Vireo	*Vireo gilvus*	*Vireonidae*			S5B	T
Yellow Warbler	*Setophaga petechia*	*Parulidae*			S5B	S

X = Species observed in its breeding season (no breeding evidence)
H = Species observed in its breeding season in suitable nesting habitat
S= Singing male present, or breeding calls heard, in its breeding season in suitable nesting habitat
P= Pair observed in their breeding season in suitable nesting habitat
T= Permanent territory presumed through registration of territorial song on at least 2 days, a week apart, at the same place
D= Courtship or display between a male and a female or 2 males, including courtship feeding or copulation
V= Visiting probable nest site
X = Species observed in its breeding season (no breeding evidence)
CF= Adult carrying food for young
NE= Nest containing eggs

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
DD= Distraction display or injury feigning
NU= Used nest or egg shell found (occupied or laid within the period of study)
FY= Recently fledged young or downy young, including young incapable to sustain flight
AE= Adults leaving or entering nest site in circumstances indicating occupied nest
FS= Adult carrying faecal sac
NY= Nest with young seen or heard

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

VEGETATION COMMUNITY PHOTOS:

May 31, 2021	
	
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	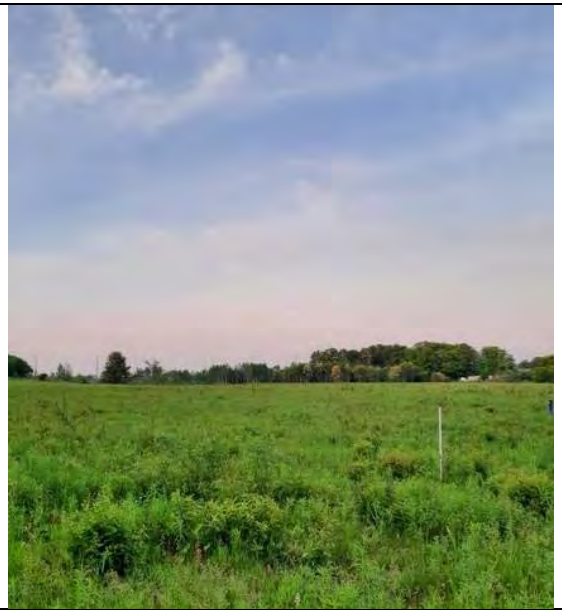

Appendix G

Species of Conservation Concern Screening

APPENDIX: Species of Conservation Concern - Simcoe 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	Confirmed absent through targeted surveys	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).	Yes: on-site and adjacent lands	Confirmed absent through targeted surveys	No further consideration required
Cerulean Warbler	*Setophaga cerulea*	END	THR	S3B	The Cerulean Warbler, a small songbird, is blue-green with white eyebrows and two prominent white wing bars (1). It requires relatively large tracts of mature deciduous forest (>100 ha), and nests in older, second-growth deciduous forests. During breeding season, it is found in relatively large tracts of mature deciduous forests that feature large, tall trees and an open understorey (4).	Yes: on-site and adjacent lands	Confirmed absent through targeted surveys	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).	No	Known to occur in the general area	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	Confirmed absent through targeted surveys	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).	No	Known to occur in the general area	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
Evening Grosbeak	*Coccothraustes vespertinus*	No Status	SC	S4B	The Evening Grosbeak is a large songbird with a thick greenish bill. It is a social bird that is often found in flocks, particularly during the winter months. Their preferred habitat is thick coniferous forest. During their breeding season, they are generally found in open, mature mixed forests dominated by Firs, White Spruce, or Trembling Aspen (1).	No	Known to occur in the general area	No further consideration required

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COMMON NAME	SCIENTIFIC NAME	Federal	Provincial		SPECIES DESCRIPTION AND HABITAT REQUIREMENTS	SUITABLE HABITAT	SPECIES OBSERVATIONS	ASSESSMENT
		SARA	SARO	S-RANK				
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: on-site and adjacent lands	Confirmed absent through targeted surveys	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
King Rail	*Rallus elegans*	END	END	S2B	The King Rail is a large bird, standing at around 40 cm tall, with a long, curved bill, orange chest and neck, and black sides with vertical white bars. This species prefers densely vegetated freshwater marshes with open shallow water and shrub thicket areas. Current records for Ontario suggest that these birds prefer sites within coastal marshes of the Great Lakes. Most breeding pairs left in Ontario are found in wetlands bordering Lake St Clair or coastal marshes along Lakes Erie and Ontario (1).	No	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
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).	Yes: on-site and adjacent lands	Confirmed absent through targeted surveys	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
Piping plover	*Charadrius melodus*	END	END	S1B	The Piping Plover is a small shorebird with light colouring, a stubby orange bill and orange legs. This species almost exclusively nests on dry sandy or gravelly beaches above the high-water mark to avoid waves. It can be found pecking the sand, searching for small pools of water for insects and small crustaceans to consume. Although not particularly common in Ontario, it is found along the shores of the Great Lakes, and in the Lake of the Woods in northwestern Ontario (1).	No	Known to occur in the general area	No further consideration required
Red-headed Woodpecker	*Melanerpes erythrocephalus*	THR	SC	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								

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COMMON NAME	SCIENTIFIC NAME	Federal SARA	Provincial SARO	Provincial S-RANK	SPECIES DESCRIPTION AND HABITAT REQUIREMENTS	SUITABLE HABITAT	SPECIES OBSERVATIONS	ASSESSMENT
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
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
Herptiles								
Blanding's Turtle	*Emydoidea blandingii*	THR	THR	S3	Blanding's Turtles are identifiable by their bright yellow throat and chin and domed shell. They spend the majority of their life cycle in the aquatic environment, usually in large wetlands or shallow lakes with high densities of water plants (1). These turtles prefer shallow, nutrient rich water with organic sediment and dense vegetation. They use terrestrial sites for travel between habitat patches and to lay clutches of eggs, often going hundreds of meters from their nearest water body. Blanding's Turtles nest in dry coniferous and mixed forest habitats, as well as fields and roadsides (2). From late October until the end of April, they hibernate in the mud at the bottom of permanent water bodies (1).	No	Known to occur in the general area	No further consideration required
Eastern Musk Turtle	*Sternotherus odoratus*	SC	SC	S3	The Eastern Musk Turtle is small with a narrow carapace, a dark brown body and two light stripes on each side of their head (5). It is a small freshwater turtle found primarily in slow moving water bodies with abundant emergent vegetation and mucky bottoms along the southern edge of the Canadian Shield within which they burrow into overwinter. Nesting sites vary, but must be close to the water and exposed to direct sunlight (1).	No	Known to occur in the general area	No further consideration required
Midland Painted Turtle	*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).	Yes: adjacent lands only	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).	Yes: adjacent lands only	Known to occur in the general area	Potential significant wildlife habitat on adjacent lands
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 Fox Snake (Georgian Bay GLSL Population)	*Pantherophis gloydi*	END	THR	S3	The Eastern Foxsnake has a rusty orange head and a golden-brown body with dark blotches. The Georgian Bay population predominantly uses open habitats along shorelines (e.g., coastal rock barrens and meadow marshes) as habitat during the active season. The foxsnakes inhabiting this coastline do not venture far inland, restricting the majority of their activity to within 150 m of the water (4). The females require rotten logs, stumps, compost or decaying leaf piles for incubating their eggs (5).	No	Known to occur in the general area	No further consideration required
Eastern Hog-nosed Snake	*Heterodon platirhinos*	THR	THR	S3	The Eastern Hog-nosed Snake can be a variety of colours and patterns so is most easily identified by its flattened, upturned nose. They prefer sandy well-drained habitats such as beaches and dry forests because they lay their eggs, hibernate and burrow in these areas. The main diet of this snake is toads and frogs, so they usually stay close to water including marshes and swamps, where they have an increased chance of finding their preferred prey (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).	Yes: on-site	Known to occur in the general area	Consideration required under local/regional conservation objectives
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

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COMMON NAME	SCIENTIFIC NAME	Federal	Provincial		SPECIES DESCRIPTION AND HABITAT REQUIREMENTS	SUITABLE HABITAT	SPECIES OBSERVATIONS	ASSESSMENT
		SARA	SARO	S-RANK				
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
Common Five-lined Skink (Southern Shield Population)	*Plestiodon fasciatus*	SC	SC	S3	The Common Five-lined Skink is Ontario's only lizard species. Its Southern Shield population can be found underneath rocks on open bedrock in forests and like to bask on sunny rocks and logs. They hibernate in crevices among rocks or buried in the soil (1). They hibernate in groups under rocks and tree stumps or in rotting wood (5).	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: on-site and adjacent lands	Confirmed absent through targeted surveys	No further consideration required
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 Viginia 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
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).	No	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).	No	Known to occur in the general area	No further consideration required
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).	No	Known to occur in the general area	No further consideration required
Algonquin Wolf	*Canis lycaon*	SC	THR	S4	Formerly called the Eastern Wolf, this canine was recently renamed the Algonquin Wolf. In the southern portion of the province, this species prefers deciduous and mixed forest landscapes while their northern range include mixed and coniferous forests. It is most prevalent in areas with abundant prey species which include Beaver, White-tailed Deer and Moose. Dens sites are usually found in coniferous forests with easily excavated soil types like sand and close to a permanent water source (1).	No	Known to occur in the general area	No further consideration required
Trees, plants, fungi and lichens								
American Ginseng	*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		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
Broad Beech Fern	*Phegopteris hexagonoptera*	SC	SC	S3	The Broad Beech Fern can grow to a height of 50 cm or more and has a creeping, scaly root (2). The fern has large divided leaves called fronds which grow from 25 to 75 cm long and triagular leaf blades. The Broad Beech Fern perfers rich, moist soils in deciduous forests, usually in full shade and often dominated by Maple and Beech trees. In Ontario, it is found in southern Muskoka, along Lake Erie, and in the eastern Lake Ontario - St Lawrence River region (1).	No	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).	Yes: on-site	Incidental observation on-site	Consideration required under the ESA

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COMMON NAME	SCIENTIFIC NAME	Federal	Provincial		SPECIES DESCRIPTION AND HABITAT REQUIREMENTS	SUITABLE HABITAT	SPECIES OBSERVATIONS	ASSESSMENT
		SARA	SARO	S-RANK				
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
Purple Twayblade	*Liparis liliifolia*	THR	THR	S2	The Purple Twayblade is a small orchid with two broad, shiny leaves at the base of the plant and a single stem from which mauve-purple flowers cluster. It can be found in a variety of habitats including open woodlands, mixed deciduous forests, shrub thickets, deciduous swamps, and coniferous plantations. It requires partial, but can not tolerate full, shade and therefore depends on natural disturbances to keep its habitat relatively open (1).	No	Known to occur in the general area	No further consideration required

References

1. Ministry of Environment, Conservation and parks. (2019). Species at risk in Ontario. Retrieved from https://www.ontario.ca/page/species-risk-ontario
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6. University of Michigan Museum of Zoology. (2004).

Appendix H
Butternut Health Assessments

CAMBIUM

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Geotechnical

Building Sciences

Construction Monitoring

Telephone
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(705) 742.7900

Facsimile
(705) 742.7907

Website
cambium-inc.com

Mailing Address
P.O. Box 325
52 Hunter Street East
Peterborough, ON
K9H 1G5

Locations
Peterborough
Kingston
Barrie
Oshawa

Laboratory
Peterborough

Professional Engineers Ontario

APGO

June 23, 2020

Tonlu Holdings Ltd.
111 Strada Drive,
Woodbridge, ON L4L 5V9

Attn: Richard Faccio

Re: Butternut Health and Hybridity Assessment Report – 80 Big Bay Point Road, Barrie ON
Cambium Reference # 10758-001

Dear Mr. Faccio,

As you are aware, Cambium Inc. (Cambium) was retained to conduct Butternut Health Assessments on two potential Butternut trees identified on the property at 80 Big Bay Point Road in the City of Barrie, Ontario (the Site). Butternut Health Assessments were completed by our certified Butternut Health Assessor on June 10th, 2020, under the assumption that both trees were pure Butternut (i.e., non-hybrids) protected under the Endangered Species Act, 2007 (ESA). Based on our assessments, the tree closer to Big Bay Point Road (#001) was classified as Category 1 (non-retainable; likely removable) and the multi-stem tree further from the road (#002) was classified as Category 3 (retainable; non-removable). However, given the relatively large size (i.e., diameter at breast height; dbh) of the subject trees, we suspected that they may be hybrids. Butternuts readily hybridize with other trees in the walnut family and hybrids are not afforded protection under the ESA.

Leaf and branch samples were collected from each tree by an arborist on June 26th, 2020 and provided to Cambium for review. Our Butternut Health Assessor applied the Field Key for Identification of Butternut Hybrids to both samples, to assess hybridity (“Long Form” documentation attached). This key generally requires an assessment of five individual characteristics based on a standardized scoring system. According to our hybridity assessment, both trees scored a “5”, indicating hybridity. Given these results, and the fact that pure butternut do not generally grow to be so large (61 cm and 170 cm dbh, respectively), we have determined that the trees are not protected under the Endangered Species Act,

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June 23, 2020

2007. As such, we can advise that the subject trees can be removed. If you plan to proceed with vegetation removals prior to August 15th, we would recommend having the area surveyed for nesting birds in compliance with regulation under the Migratory Birds Convention Act, 1994.

If you have any questions, please do not hesitate to contact the undersigned at (705) 719-0700.

Best regards,

Cambium Inc.

Ernie Silhanek, Dipl. F&W
Senior Ecologist
BHA #688

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

JPP/es/djl

Encl.
BHA Assessments
Field Key for Identification of Butternut Hybrids (Long Forms)

Butternut Data Collection Form 1 - 2010 Edition

Surveyor ID or BHA #: 688

(PLEASE USE BLOCK LETTERS)

Date (dd/mm/yyyy): 10 - 06 - 2020

Shaded fields are mandatory for Butternut Health Assessments

Surveyor Contact

First: ERNIE Last: SILHANEK

Email: Ernie.Silhanek@cambium-inc.com

Telephone: (705) 3 Telephone Other: ( ) - X

Property Owner (check if same as surveyor) ☐

First: Last:

or Company: RINOMATO GROUP

Email: richard@rinomatogroup.com

Telephone: ( ) Telephone Other: ( ) - X

Property Owner's Mailing address

Address: 111 STRADA DRIVE Postal Code: L4L 5V9 Prov.: ON

City: WOODBRIDGE

Tree Location (if different from mailing address)

Address/(911#): 80 BIG BAY POINT RD

Township: INNISFIL Lot: 09 Con: 13

City: BARRIE

Directions:

☐ Yes ☐ No Can Share Location Information with other Butternut Recovery Organizations?

☐ Yes ☐ No Site visits OK? (prior arrangments will always be made for a site vist)

> (Greater than)
< (Less than)

Butternut Trees Tally by Diameter Class

(Do a dot tally in blank space; write total# in box for each)

Tree Condition	< 3 cm	3-15 cm	16-30cm	>30 cm
Vigorous: > 50% Live Crown Minor or no cankers				1
Poor Vigor: <50% Live Crown or >50% Live Crown + heavily cankered stem				1
Dead				

Historically, do some trees produce seeds? ☐ Y ☐ N ☒ Unkown

Estimated area containing butternut for properties > 1 acre (0.4 hectares): 1 ☐ Acres ☒ Hectares

Overall Property Description (area(s) containing Butternut)

☐ Rolling Upland ☐ Bottomland
☐ Valley Slope ☐ Variable
☒ Tableland ☐ Unknown

Vegetation Community/ies

☐ Open ☐ Fencerow
☐ Shrubland ☐ Roadside
☒ DeciduousForest ☐ Quary
☐ ConiferForest ☐ UrbanYard
☐ MixedForest ☐ UrbanPark

Other:

Soil Drainage

☐ Well Drained
☐ Moderately Drained
☐ Poorly Drained
☒ Unknown

Soil Texture

☐ Clay ☐ Sand
☐ Clay Loam ☐ Variable
☐ Loam ☐ Unknown
☒ Loamy Sand

Soil Depth

☐ > 1metre
☐ 30 - 99cm
☐ < 30cm
☐ Variable
☒ Unknown

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Butternut Data Collection FORM 2 (2010 Edition) (PLEASE USE BLOCK LETTERS)

Shaded fields are mandatory for Butternut Health Assessments

Fill when Form 1 indicates canker is well established. The information opn Form 2 must be filled out for all trees when doing a Butternut Health Assessment.

Site Code(A,B,...Z, AA...): AA

Surveyor ID or BHA #: 688

Date (dd/mm/yyyy): 10-06-2020

Surveyor Last Name: SICHANEK

Tree ID Numbering: 1,2,3,...Starting from 1 for each site

Field	Tree 1	Tree 2	Tree 3	Tree 4	Tree 5
Tree #	001	002			
Zone	17	17	1	1	1
Easting	605434	605432			
Northing	4911698	4911723			
Crown Class	2	2			
Live Crown %	50	100			
Main Stem Length(m) Below crown	8	10			
Twig Dieback	☒	☒	☐	☐	☐
Branch Dieback	☒	☒	☐	☐	☐
Defoliation	☐	☐	☐	☐	☐
Discolouration	☐	☐	☐	☐	☐
#Stems	2	4			
DBH(cm)	61	170 +			
Butternut Origin	☒ Natural	☒ Natural	☐ Natural ☐ Planted ☐ Unknown	☐ Natural ☐ Planted ☐ Unknown	☐ Natural ☐ Planted ☐ Unknown
Seed Signs	☒ None	☒ None	☐ Male Flowers ☐ Female Flowers ☐ Seed Set ☐ None	☐ Male Flowers ☐ Female Flowers ☐ Seed Set ☐ None	☐ Male Flowers ☐ Female Flowers ☐ Seed Set ☐ None
Assess below live crown: #Epic-Live	0	0			
#Epic-Dead	1	0			
Bark Type	D	D			
# Callused Wounds	2	4			
Root #Open / #Sooty	1 / 4	3 / 7			
=<2m #Open / #Sooty	0 / 3	0 / 5			
>2m #Open / #Sooty	0 / 0	0 / 0			
Metres from badly cankered tree	☒ < 40	☒ < 40	☐ < 40 ☐ > 40 ☐ None Found	☐ < 40 ☐ > 40 ☐ None Found	☐ < 40 ☐ > 40 ☐ None Found
Competing Species	MH, PW	MH			
Notes	WP 302	WP 303 # Suspect hybrid lg leaves, subterminal leaflets			

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Natural Heritage Review
Rinomato Group
Big Bay Point Rd. & Bayview Dr.
Barrie, ON

Legend

- Butternut
- 50m Butternut Setback
- LSRCA Regulated Area (To Be Confirmed)
- Watercourse
- 30m Watercourse Setback
- Preliminary Potential Developable Area (11.96 ha)
- Site (approximate)

Notes:
- Base mapping features are © Queen's Printer of Ontario, 2019 (this does not constitute an endorsement by the Ministry of Natural Resources or the Ontario Government).
- Distances on this plan are in metres and can be converted to feet by dividing by 0.3048.
- Cambium Inc. makes every effort to ensure this map is free from errors but cannot be held responsible for any damages due to error or omissions. This map should not be used for navigation or legal purposes. It is intended for general reference use only.

CAMBIUM
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www.cambium-inc.com

PRELIMINARY NATURAL HERITAGE CONSTRAINTS

Project No.:	Date:
10758-001	April 2020
	Rev.:
Scale:	Projection:
1:3,000	NAD 1983 UTM Zone 17N
Created by: JP	Checked by: PN
	Figure: 1

C:\Users\jeremy_prahl\Desktop\10758-001 Rinomato Group - Due Diligence NH Review\2020-03-26 FIG 1 - Preliminary Constraints.mxd

Table 4: Data Sheet for Field Identification of Butternut Hybrids

BHA name:	Ernie Silhanek	Tree ID #:	Tree ID #:	Tree ID #:	Tree ID #:	Tree ID #:	Tree ID #:
BHA ID #:	688.						
BHA Report #:	—	001	002.				
Assessment Date(s):	JUNE 10/20						
Tree location (site address):	80 BIG BAY POINT RD, BARRIE						
Client name:	RINOMATO GROUP.						
Traits (must evaluate at least five traits):		Score Assigned:	Score Assigned:	Score Assigned:	Score Assigned:	Score Assigned:	Score Assigned:
Leaf Retention		—	—				
Dormant Terminal Bud		—	—				
Dormant Twigs		1	1				
Lenticel Shape on New Twigs		1	1				
Pith Color of 1-Year Twig		1	1				
Leaf Scar		0	0				
Leaf Length		1	1				
Color of Bark Fissures on Mature Trees		1	1				
Green Hull Characteristics		—	—				
Nut Shape		—	—				
Catkin Length When Fully Extended and Shedding Pollen		—	—				
How to interpret total score: *0 to 3 = Butternut;* *4 or greater = Hybrid*	**Total:**	5	5				

0cm 3cm 15cm

Butternut Data Collection Form 1 - 2010 Edition

Surveyor ID or BHA # 447

(PLEASE USE BLOCK LETTERS)

Date (dd/mm/yyyy) 06 - 07 - 2021

Shaded fields are mandatory for Butternut Health Assessments

Surveyor Contact

First MATTHEW Last GEHRES

Email maehresestrbos.com

Telephone (416) 453-6771 Telephone Other (416) 695-4949 x228

Property Owner (check if same as surveyor) ☐

First Last

or Company TONLU HOLDINGS LIMITED

Email isabel@erinomatogroup.com

Telephone ( ) - Telephone Other (905) 851-6616 x1801

Property Owner's Mailing address

Address 401 VAUGHAN VALLEY BLVD. Postal Code L4H3B5 Prov. ON

City WOODBRIDGE

Tree Location (if different from mailing address)

Address/(911#) 80 BIG BAY POINT ROAD

Township Lot Con

City BARRIE ONTARIO

Directions

☒ Yes ☐ No Can Share Location Information with other Butternut Recovery Organizations?

☐ Yes ☐ No Site visits OK? (prior arrangments will always be made for a site vist)

> (Greater than)
< (Less than)

Butternut Trees Tally by Diameter Class

(Do a dot tally in blank space; write total# in box for each)

Tree Condition	< 3 cm	3-15 cm	16-30cm	>30 cm
Vigorous: > 50% Live Crown Minor or no cankers			1	2
Poor Vigor: <50% Live Crown or >50% Live Crown + heavily cankered stem				
Dead				

Historically, do some trees produce seeds? ☐ Y ☐ N ☒ Unkown

Estimated area containing butternut for properties > 1 acre (0.4 hectares): ☐ Acres ☐ Hectares

Overall Property Description (area(s) containing Butternut)

☐ Rolling Upland ☐ Bottomland
☐ Valley Slope ☐ Variable
☐ Tableland ☐ Unknown

Vegetation Community/ies

☐ Open ☐ Fencerow
☐ Shrubland ☐ Roadside
☐ DeciduousForest ☐ Quary
☐ ConiferForest ☐ UrbanYard
☐ MixedForest ☐ UrbanPark

Other

Soil Drainage

☐ Well Drained
☐ Moderately Drained
☐ Poorly Drained
☒ Unknown

Soil Texture

☐ Clay ☐ Sand
☐ Clay Loam ☐ Variable
☐ Loam ☒ Unknown
☐ Loamy Sand

Soil Depth

☐ > 1metre
☐ 30 - 99cm
☐ < 30cm
☐ Variable
☒ Unknown

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Butternut Data Collection FORM 2 (2010 Edition) (PLEASE USE BLOCK LETTERS)

Shaded fields are mandatory for Butternut Health Assessments

Fill when Form 1 indicates canker is well established. The information opn Form 2 must be filled out for all trees when doing a Butternut Health Assessment.

Site Code(A,B,...Z, AA...) | Surveyor ID or BHA # 447

Surveyor Last Name: GEHRES

Date (dd/mm/yyyy): 06 - 07 - 2021

Tree ID Numbering: 1,2,3,...Starting from 1 for each site

Tree # 267 | **Zone** 1 | **Easting** 605620 | **Northing** 4911896

Crown Class: 2 | Live Crown %: 95 | Main Stem Length(m) Below crown: 6

Twig Dieback: ☒ | Branch Dieback: ☒ | Defoliation: ☐ | Discolouration: ☐

#Stems: 2 | DBH(cm): 28

Butternut Origin: ☐ Natural ☐ Planted ☒ Unknown

Seed Signs: ☐ Male Flowers ☐ Female Flowers ☒ Seed Set ☐ None

Assess below live crown: #Epic-Live: 3 | #Epic-Dead: 5 | Bark Type: S | # Callused Wounds: 6

	#Open	#Sooty
Root	2	2
=<2m	3	
>2m		2

Metres from badly cankered tree: ☐ < 40 ☐ > 40 ☒ None Found

Competing Species: ELM; MANITOBA MAPLE

Tree # 268 | **Zone** 1 | **Easting** 605616 | **Northing** 4911906

Crown Class: 2 | Live Crown %: 98 | Main Stem Length(m) Below crown: 4

Twig Dieback: ☒ | Branch Dieback: ☒ | Defoliation: ☐ | Discolouration: ☐

#Stems: 3 | DBH(cm): 40

Butternut Origin: ☐ Natural ☐ Planted ☒ Unknown

Seed Signs: ☐ Male Flowers ☐ Female Flowers ☒ Seed Set ☐ None

Assess below live crown: #Epic-Live: 7 | #Epic-Dead: 7 | Bark Type: S | # Callused Wounds: 2

	#Open	#Sooty
Root		3
=<2m		1
>2m		

Metres from badly cankered tree: ☐ < 40 ☐ > 40 ☒ None Found

Competing Species: ELM; MANITOBA MAPLE

Tree # 269 | **Zone** 1 | **Easting** 605614 | **Northing** 4911916

Crown Class: 2 | Live Crown %: 98 | Main Stem Length(m) Below crown: 4

Twig Dieback: ☒ | Branch Dieback: ☒ | Defoliation: ☐ | Discolouration: ☐

#Stems: 1 | DBH(cm): 43

Butternut Origin: ☐ Natural ☐ Planted ☒ Unknown

Seed Signs: ☐ Male Flowers ☐ Female Flowers ☒ Seed Set ☐ None

Assess below live crown: #Epic-Live: 10 | #Epic-Dead: 4 | Bark Type: S | # Callused Wounds: 2

	#Open	#Sooty
Root		2
=<2m		1
>2m		

Metres from badly cankered tree: ☐ < 40 ☐ > 40 ☒ None Found

Competing Species: MANITOBA MAPLE

Tree # | **Zone** 1 | **Easting** | **Northing**

Crown Class | Live Crown % | Main Stem Length(m) Below crown

Twig Dieback: ☐ | Branch Dieback: ☐ | Defoliation: ☐ | Discolouration: ☐

#Stems | DBH(cm)

Butternut Origin: ☐ Natural ☐ Planted ☐ Unknown

Seed Signs: ☐ Male Flowers ☐ Female Flowers ☐ Seed Set ☐ None

Assess below live crown: #Epic-Live | #Epic-Dead | Bark Type | # Callused Wounds

	#Open	#Sooty
Root		
=<2m		
>2m		

Metres from badly cankered tree: ☐ < 40 ☐ > 40 ☐ None Found

Competing Species

Tree # | **Zone** 1 | **Easting** | **Northing**

Crown Class | Live Crown % | Main Stem Length(m) Below crown

Twig Dieback: ☐ | Branch Dieback: ☐ | Defoliation: ☐ | Discolouration: ☐

#Stems | DBH(cm)

Butternut Origin: ☐ Natural ☐ Planted ☐ Unknown

Seed Signs: ☐ Male Flowers ☐ Female Flowers ☐ Seed Set ☐ None

Assess below live crown: #Epic-Live | #Epic-Dead | Bark Type | # Callused Wounds

	#Open	#Sooty
Root		
=<2m		
>2m		

Metres from badly cankered tree: ☐ < 40 ☐ > 40 ☐ None Found

Competing Species

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BHA Tree Analysis (version: December 2013)

This table is to be completed by a designated Butternut Health Assessor (BHA).

BHA Report #		Assessment Date(s)	06-Jul-21	Total # Butternut Trees in BHA Report	3
BHA ID #	447	BHA Name	MATTHEW GEHRES (STRYBOS BARRON KING LTD.)		
Landowner / Client Name			TONLU HOLDINGS LIMITED		
Property Location			80 BIG BAY POINT ROAD, BARRIE, ONTARIO		

input field data										automatic calculations from field data						Categories: 1: non-retainable, 2: retainable, 3: archivable				
			# bole cankers				# root flare (RF) cankers													
Tree #	Live Crown %	Tree dbh (cm)	sooty (S) (will be assigned 2.5 cm per canker)		open (O) (will be assigned 5 cm per canker)				<40 m from cankered tree? (Y or N)	Circ. (cm) = Pi x dbh	total bole canker width (sooty x 2.5 + open x 5)	total RF canker width (sooty x 2.5 + open x 5)	bole canker % of circ.	RF canker % of circ.	total bole & root canker % of 2xCirc	LC% >/= 50 & BC% = 0	LC% >70 & BRC % <20	LC% >70 & BC % <20	Preliminary tree call	FINAL TREE CALL a Cat 2, dbh>20cm <40m from a Cat 1
			S <2 m	S >2 m	O <2 m	O >2 m	RF S	RF O		Circ (cm)	BC (cm)	RC (cm)	BC%	RC%	BRC%					
267	95	28	2			3	2	2	N	87.92	20.0	15.0	**22.7**	**17.1**	**19.9**	1	2	1	**2**	**2**
268	98	40	1				3		N	125.6	2.5	7.5	**2.0**	**6.0**	**4.0**	1	2	2	**2**	**2**
269	98	43	1				2		N	135	2.5	5.0	**1.9**	**3.7**	**2.8**	1	2	2	**2**	**2**