# Environmental Impact Study-
# Long Point Road

**Report Prepared for**:
**Terra Brook Homes**
**Concord, Ontario**

Report prepared by:
**Neil Morris, Consulting Ecologist**
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# *Executive Summary*

This EIS has been prepared in regard to two contiguous lots located on Long Point Road, Town of the Blue Mountains, Ontario (see Figure 1). The combined lots are approximately 2.2 hectares (ha), and for the purposes of this report, the two lots are treated as a single property and are referred to herein as the "Long Point Property", or simply the "Property".

Environmental Constraints

The Grey Sauble Conservation Authority (GSCA) has indicated that there are three issues that trigger the need for the EIS and which should be the basis for developing the EIS scope. These are

1. the presence of "Significant Woodlands throughout almost the entire Property,
2. the presence of a Provincially Significant Wetland (PSW) (Silver Creek Wetland Complex) within 120 m of the Property, and
3. the close proximity of the Property to a watercourse (Watercourse #1) that is reported to provide fish habitat.

The scope and content of this EIS are site-specific and have been developed so that concerns regarding the environment and natural heritage features are addressed to the satisfaction of approval authorities and other concerned agencies. The core environmental issues of potential concern associated with the Long Point Property include:

1. potential impacts that site development might have on watercourses which flow within or near to the Property (i.e., Watercourse 1 near the southeast corner of the property, and the municipal drain that flows just inside the western perimeter of the Property),
2. potential impacts that site development might have on Significant Woodlands within and adjacent to the Property, and their various functions;
3. potential impacts that site development might have on wetlands (and their functions) located to the west of the Property; and
4. potential impacts on Priority Species, including species of conservation concern (SOCC) and legislated species at risk (SAR), or otherwise significant wildlife or significant wildlife habitat (SWH), that might be present on or near the Property.

Existing Conditions

The Long Point Property is occupied primarily by a few types of deciduous forest communities that are relatively young and comprised of plant species which are

provincially and regionally common. Overall, the terrestrial ecological functions supported within the Property are neither significant nor sensitive, nor are they vital to overall ecosystem integrity on a local or regional scale. In relative terms, the 0.35 ha of Birch-Poplar forest community at the west end of the Property (see Figure 5) has the highest potential for ecological benefits of the four forest communities within the Property.

There are two watercourses that pass through or near the Property. The municipal drain that runs along the western perimeter of the Property is a man-made stormwater conveyance feature that exhibits intermittent, event-based flow. This watercourse is lacking in natural characteristics and serves minimal ecological function, and does not appear to function as direct fish habitat. Watercourse #1 flows along the west side of Long Point Road and crosses the road by culvert about 40 m south of the Property. This stream exhibits consistent flow that supports populations of fish typical of warm-water or cool-water communities.

The Property also encompasses several very small ephemeral pools and a drainage swale, located within the western half of the Property. Examination of these features reveals some core characteristics consistent with wetland conditions. However, due in part to their small size (<0.02 ha) their environmental functions are very limited and not meaningful in regard to local ecosystem function and integrity.

Analysis of Impacts

The current Draft Plan of subdivision identifies a total of 22 residential lots distributed along a central cul-de-sac access road. A forested Open Space block of approximately 0.55 ha has been retained at the west end of the Property, bordering adjacent lands to the west that are also vacant and forested. In considering the scenario without accounting for any planning adjustments or mitigating measures, the maximum theoretical impacts include the following;

- loss or impairment of cultural meadow, up to a maximum of approximately 0.2 ha,
- loss or impairment of Significant Woodlands, to a maximum of approximately ~1.4 ha,
- encroachment within the "adjacent lands" (120 m) of a PSW located just west of the Property, and possible impairment of that PSW,
- disturbance or impairment of two nearby watercourses, and
- direct harm or habitat loss of three SOCC that have been identified as present within or near the Property.

Through detailed assessment, the likely risks of meaningful impacts to the natural heritage features of concern are as follows:

- Priority Species - There is no meaningful presence of SAR within or near the Property. Of the three SOCC that have been observed, only Black Ash exhibits a presence that warrants consideration as a potential constraint. The limited number of young specimens of Black Ash are confined to a portion of the Property (i.e., Block 25) that will be retained as open space, and thus no trees will be adversely affected. Otherwise, in absence of any likelihood of meaningful presence of other Priority Species within the Property, measurable impacts resulting from possible development activity are considered to be very unlikely, and would be very limited in terms of frequency and numbers affected. The overall risk of the proposed development in regard to Priority Species is deemed to be low.
- Watercourses - There is no expectation of any adverse effects of development on Watercourse #1. There is a limited potential for impacts on water quality in the municipal drain at the west end of the Property, but the implications are inherently limited owing to the fact that the drain does not serve as fish habitat or otherwise exhibit much ecological function. The overall risk of the proposed development in regard to watercourses is deemed to be low.
- Provincially Significant Wetlands - There is an absence of ecological or hydrological connectivity between the Property the Silver Creek PSW. Accordingly, residential development as proposed for the Long Point Property poses no meaningful risk of impacts on the PSW or its functions.
- Wetlands within the Property - There are no features within the Property that warrant identification as wetlands following standard conventions. There are a few very small ephemeral pools and a remnant drainage swale that exhibit some basic wetland characteristics. The loss or impairment of the small features within the Property is not expected to equate to meaningful loss of ecological function in the local natural heritage system. The overall risk of the proposed development in regard to the on-site ephemeral pools and drainage swale is deemed to be low.
- Significant Woodlands - The woodlands within the Property are neither significant nor sensitive in terms of their various characteristics and functions. This inherently limits the implications of any possible loss or impairment of these communities as a result of proposed development. In strict consideration of the ecological features and functions ascribed to woodlands within the Property, any loss or impairment of these woodlands would not be considered significant.

Recommendations

Regardless of the relatively low level of risk, there should be efforts to further mitigate the risk of any impacts potentially associated with proposed development of the Property.

Recommendations are provided herein to avoid, limit or otherwise mitigate the potential impacts that have been identified. The recommendations are summarized as follows:

- To minimize the potential for any effects of development on local watercourses, and also wetlands, plans for grading and stormwater management should seek to maintain existing drainage patterns to the extent feasible.
- During any eventual construction or landscape alteration, an Erosion and Sediment Control (ESC) plan should be developed and implemented in accordance with established best practices.
- For the municipal drain that flows across the western perimeter of the Property, a set-back of 10 m is recommended.
- Removal/filling of any of the small pools should occur outside the time when amphibians are most likely to be present at these features (April to July).
- The Property should be developed so as to minimize the loss of any tree cover within the Property, with highest priority given to the Birch/Poplar forest at the west end of the Property.
- Consideration should be given to the establishment of requirements for Tree Preservation Plans (TPP) for all lots within the development, to the extent that engineering requirements (e.g. grading and stormwater management plans) allow.
- Clearing of forested areas within the Property should be timed to avoid the active bird nesting period (i.e., from May to August) and the period when roosting bats might be present (May to September).

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# Acronyms and Abbreviations

| | |
|---|---|
| ANSI | Area of Natural and Scientific Interest |
| BBS | Breeding Bird Survey |
| CCSS | Craigleith Camperdown Subwaterhsed Study |
| COSEWIC | Committee on the Status of Endangered Wildlife in Canada |
| COSSARO | Committee on the Status of Species at Risk in Ontario |
| DBH | Diameter (of a tree) at breast height |
| EAB | Emerald Ash Borer |
| EIS | Environmental Impact Study |
| ELC | Ecological Land Classification |
| ESA | Endangered Species Act (Ontario) |
| ESC | Erosion and Sediment Control |
| GSCA | Grey Sauble Conservation Authority |
| ha | hectare(s) |
| masl | meters above sea level |
| MECP | Ministry of Environment Conservation and Parks |
| MNRF | Ministry of Natural Resources and Forestry |
| NEP | Niagara Escarpment Plan |
| NHS | Natural Heritage System |
| NHIC | Natural Heritage Information Centre |
| OBBA | Ontario Breeding Bird Atlas |
| OP | Official Plan |
| PSW | Provincially Significant Wetland |
| SAR | Species at Risk |
| SARA | Species at Risk Act (Canada) |
| SOCC | Species of Conservation Concern |
| SWH | Significant Wildlife Habitat |
| SWM | Stormwater Management |
| TOBM | Town of the Blue Mountains |
| TPP | Tree Preservation Plan |
| UTM | Universal Transverse Mercator |

# 1.0 INTRODUCTION

## 1.1 Background

Property Description:

This EIS has been prepared in regard to two contiguous lots located on Long Point Road, Town of the Blue Mountains, Ontario (see Figure 1). The combined lots are approximately 2.2 hectares (ha) in area and are legally known as Plan 529 E, Part Lot 85 RP;16R2186, Parts 4 & 8 and Parts 5 & 9. For the purposes of this report, the two lots are treated as a single property and are referred to herein as the "Long Point Property", or simply the "Property".

The Town-of-the-Blue Mountains (TOBM) Official Plan (OP) and Grey County OP land-use designations for the Property are "Residential Recreational Area" and "Recreation Resort Area", respectively. The Property lies within the Niagara Escarpment Plan (NEP) area, and is designated "Escarpment Recreation Area" under that plan.

The Property is bordered by Long Point Road on its eastern perimeter, single-family residential lots to the immediate north and south, and vacant forested land to the west. Lands immediately opposite the Property on the east side of Long Point Road are also occupied by single detached residential homes, backing onto undeveloped land that is largely forested.

The Property itself is currently vacant and undeveloped. A draft plan of subdivision has been developed for the Property, proposing a total of 22 residential lots distributed along a central cul-de-sac access road. A copy of the Draft Plan is provided as Appendix A of this report.

Environmental Constraints

The current understanding of environmental issues of concern associated with the Property is based in part on a pre-consultation meeting with Grey Sauble Conservation Authority (GSCA) on 31 March 2017. The GSCA has indicated that there are three issues that trigger the need for the EIS and which should be the basis for developing the EIS scope. These are;

1. the presence of Significant Woodlands throughout almost the entire Property,
2. the presence of a Provincially Significant Wetland (PSW) (Silver Creek Wetland Complex) within 120 m of the Property, and
3. the close proximity of the Property to a watercourse (Watercourse #1) that is reported to provide fish habitat.

There are no Areas of Natural or Scientific Interest (ANSI) or Significant Wildlife Areas, as identified in current OP or Ministry of Natural Resources and Forestry (MNRF) mapping, in meaningful proximity to the Property.

Figure 2 depicts the environmental features that have been identified as possible constraints for the Property. The presence of Significant Woodlands within and adjacent to the Property and the presence of the PSW within 120 m of the Property serve as formal triggers for the EIS. The "adjacent lands" of the PSW (i.e., the 120-m set-back) effectively corresponds to the area that is under the regulatory authority of the GSCA and also the area designated as "Hazard" in the Town of the Blue Mountains (TOBM) Official Plan (OP).

## 1.2 Scope of Work

The scope and content of this EIS are site-specific and have been developed so that concerns regarding the environment and natural heritage features are addressed to the satisfaction of approval authorities and other concerned agencies.

The scope and content of the Long Point Road EIS were developed to be consistent with the general requirements specified in Section 2.8.7 and 6.19 of the Grey County OP (2013) and Section C9 of the TOBM OP (2016).

For this EIS, the core environmental issues of potential concern associated with the Long Point Property include:

1. Potential impacts that site development might have on watercourses which flow within or near to the Property (i.e., Watercourse 1 near the southeast corner of the Property, and the municipal drain that flows just inside the western perimeter of the Property),
2. Potential impacts that site development might have on Significant Woodlands within and adjacent to the Property, and their various functions;
3. Potential impacts that site development might have on wetlands (and their functions) located to the west of the Property; and
4. Potential impacts on species of conservation concern (SOCC) or legislated species at risk (SAR), or otherwise significant wildlife or wildlife habitat that might be present on or near the Property.

The EIS addresses, at a minimum, the potential impacts of any eventual site alteration or development on these features and functions. The coverage and level of detail of on-site surveillance that has been undertaken are intended to allow adequate description of the general natural environment, and also allow focused assessment of potential effects on site features and functions of concern. Accordingly, the core efforts for the Long Point Property include the following:

- General characterization of the physical and ecological features and functions within and immediately adjacent to the Property,
- Detailed characterization (physical and ecological) of Watercourse #1 and the municipal drain,
- Determination of the presence and status of wildlife (woody and non-woody vegetation, amphibians, reptiles, mammals, birds and invertebrates) on and near the Property, and
- Characterization of the wooded areas within and adjacent to the Property.

The characterization of the Long Point Property and relevant features is based primarily on direct field-level surveillance. To effectively address the identified EIS requirements, this field surveillance has included:

- Direct examination of slope/topography, conveyance features (ditches, swales, streams), and overburden characteristics within and adjacent to the Property, to understand hydrological processes and connectivity between the Property and associated aquatic features.
- Detailed inventories of terrestrial biota with a focus on identification of SAR or SOCC that may be present. This includes;
    - a botanical survey, conducted over three seasons following a wandering transect approach,
    - a breeding bird survey (BBS), following the standard point-count approach of the Ontario Breeding Bird Atlas (OBBA) and also a wandering transect approach, and
    - an amphibian survey, conducted in the spring following the protocol of the Marsh Monitoring Program (MMP).
- In addition to the focused wildlife monitoring noted above, general surveillance of animal and plant communities throughout the entire Property.
- Direct assessment of wooded areas within and near the Property, including community composition, forest strata characteristics (e.g. species, age/size class, relative density), soil characteristics, and wildlife presence and utilization.

The information acquired through the site-specific surveillance has been combined with previously compiled information for the local area to complete the required site characterization. Further details of ecological monitoring methods are provided in Section 2.

# 2.0 METHODOLOGY

The work undertaken to allow the preparation of this EIS Report has included two main components;

1. a desktop review of previously recorded information regarding the characteristics of the Property and adjacent lands, and
2. focused on-site monitoring of the Property.

The assessment herein collectively considers the findings of the desktop review and the on-site monitoring in a weight-of-evidence manner, with primary emphasis on site-specific data.

The following sections describe the methods employed in conducting the various components of environmental monitoring for the purposes of this EIS. In summary, the methodology adopted for the monitoring documented herein was developed to provide results appropriate to the stated objectives, and is based on standard accepted protocol.

A handheld GPS unit (Garmin model "GPSmap 76") was used to delineate key features, to measure areas of features, and to provide the geographic coordinates of monitoring locations or key natural heritage features of relevance. All coordinates have been obtained and reported using the Universal Transverse Mercator (UTM) coordinate system and NAD83 datum.

## 2.1 Review of Existing Information

A review of existing information of relevance to the Long Point Property was completed prior to completion of direct field assessment. Several sources of information were consulted for this purpose, including:

- Grey County's web-based interactive GIS mapping tool,
- the Natural Heritage Information Centre (NHIC) on-line database,
- the Ontario Breeding Bird Atlas (OBBA) (Cadman et al, 2007) and associated database (Bird Studies Canada (BSC) *et al*., 2018),
- the Soil Survey of Grey County (Richards and Gillespie, 1954),
- the Craigleith Camperdown Subwatershed Study (CCSS) (Gore and Storrie, 1993)
- the Ontario Reptile and Amphibian Atlas on-line database (Ontario Nature, 2018),
- the Ontario Butterfly Atlas (Toronto Entomologists Association, Ontario Nature, 2019),

- the Ontario Mammal Guide (iNaturalist, 2019), and
- Environmental Impact Studies for other properties in general proximity to this Property (e.g. Hensel, 2009, Azimuth, 2016, Morris, 2012)

The information obtained in this review has served in part to determine certain ecological characteristics of the Property, and also in part to identify possible features to receive focus during on-site monitoring efforts.

In addition to the fixed information sources noted above, enquiries were made to the Ministry of Environment Conservation and Parks (MECP) in October 2019 to determine any specific concerns in regard to Species at Risk on or near the Property. At the time of preparation of this EIS report, no response had been received.

## 2.2 On-Site Monitoring

On-site monitoring was intended to provide a sufficient understanding of all relevant characteristics of the Property. Elements of the monitoring program were focused on the priority endpoints, including the two streams and the possible presence of species of conservation concern (SOCC) or legislated species at risk (SAR) in the general vicinity of the Property.

The core campaign of on-site surveillance was conducted during seven separate visits to the Property over the period of late April to September of 2017. The site was re-visited in May and August of 2018, October 2019 and August 2020 to confirm and/or expand upon findings of surveillance in 2017. The timing of site visits allowed for appropriate seasonal coverage for the various specific monitoring efforts.

### 2.2.1 Avian Monitoring

A focused survey of birds was completed at the Long Point Property during the breeding season of 2017. The Breeding Bird Survey (BBS) used a combination of two methods; 1) the point-count method, and 2) incidental surveillance. The point-count method was implemented following protocol consistent with that employed for the Ontario Breeding Bird Atlas (OBBA) (Cadman et al., 2007) and the Marsh Monitoring Program (BSC, 2003).

For breeding bird point-count surveys, each individual bird heard or seen within a 100 meter radius (3.142 ha) of a fixed location was recorded over two successive five-minute periods (10 continuous minutes per survey episode). The distance from the observation point was approximated for each individual bird occurrence. Breeding evidence for each bird species was documented using OBBA Evidence Codes.

A total of two point-count stations were established at the Long Point Property for BBS purposes. Following OBBA protocol, the preferred station separation distance is 250 m

for wooded areas. Under this convention, only a single BBS station would be established within the Property. For the purpose of this EIS, two stations were established within the Long Point Property with only about 120 m separation of the centre points. It should also be noted that the 100-m radius of each point-count station extends beyond the Property boundary. The implications of theses factors (station overlap, extension beyond the property boundary) are taken into consideration in the interpretation of the results of the BBS (see Section 4.4).

The location of BBS point-count stations is depicted in Figure 3, and GPS coordinates and station descriptions are provided in Table 2. The habitat representation of the two established stations was effectively the same (i.e., primarily wooded). Station PC1 encompassed forest cover on the west end of the Property that was relatively more mature than forest cover within the radius of coverage of Station PC2.

Incidental surveillance was also conducted throughout the Property, noting all individual bird occurrences and breeding evidence while traversing the Property throughout day and evening hours. Incidental surveillance was used to augment the temporal and spatial coverage of point-count monitoring and to provide a more complete assessment of avian diversity. The habitat and location of each bird observed during transect surveys was noted, along with notes regarding activity (foraging, in flight, singing, etc.).

Point-count monitoring was conducted on two occasions; 1) 19 June, and 2) 10 July 2017. Point-count monitoring was conducted between sunrise and 10:00 a.m.. Incidental surveillance was completed on these same dates, and also on all other days on which the Property was visited. Avian monitoring efforts gave focused attention to any indications of the possible presence of SOCC or SAR.

### 2.2.2 Amphibian Monitoring

The amphibian monitoring protocol established for the Marsh Monitoring Program (MMP) (BSC, 2003) was applied for the purpose of this EIS. A single amphibian point-count monitoring station was established at the Long Point Property, effectively overlapping with the BBS point-count station PC1 at the west end of the Property (see Figure 3). The associated 100-m radius encompassed small wetland features on the Property where standing water was present on occasion in the spring. All amphibian species that were heard or seen at the monitoring locations were recorded, indicating a Call Level Code and the general abundance of individuals calling, where possible. Monitoring in this manner was conducted at least 30 minutes after sunset on the nights of 18 April, 18 June and 25 July 2017. These nights were selected in part to reflect the standard conditions defined in the protocol, relating largely to night-time temperature thresholds and an absence of wind and precipitation.

It should be noted that relatively cool and wet conditions were experienced throughout the region in 2017, leading to some delays in the typical progression of onset of breeding calls of various species. The conditions encountered on the noted dates of monitoring are

specified in the completed survey forms, provided in Appendix B. Timing also reflected the broader activity trends observed in southern Ontario through the spring and early summer of 2017. Overall, the timing of successive monitoring events at the Long Point Property has been based on a combination of factors. This includes several relevant meteorological factors (temperature, wind, rain) and also the general regional occurrence of vocalizations of various amphibian species as indicators of the onset of sequential stages in the progression of the breeding season.

In addition to point-count monitoring, instances of any amphibian seen or heard at any location or time were recorded throughout the full period of study. Features with standing water were subject to direct surveillance for the presence of adult amphibians, egg masses or larval stage amphibians.

### 2.2.3 Mammal Surveillance

During all site visits, all observations of mammals on or near the Long Point Property were recorded, along with all other evidence of mammal presence (e.g. foot prints, scat, and burrows).

In addition, specific attention was paid to the possible presence of bats in flight around the Property after sunset on the evenings of 18 June and 25 July 2017. The Property was also surveyed for the presence of features that might provide habitat for bats (e.g. dead or dying trees possibly providing hollows or bark crevices for roosting or hibernating).

### 2.2.4 Reptile Surveillance

The Long Point Property was monitored for any evidence of the presence of reptiles during all site visits. This included turning of larger rocks or logs to detect possible snake presence within the Property. The Property does not encompass aquatic features that might serve as habitat for turtles, precluding any need to conduct basking surveys. Watercourse #1 was also subject to limited visual surveillance along its length between Hwy 26 and the point of crossing of Long Point Road. The surveillance was conducted to determine if any turtle specimens were present, or whether suitable habitat for turtles was present

### 2.2.5 Botanical Inventory

Surveillance of terrestrial vascular plant species was completed following a basic "wandering transect" approach to determine the presence and general distribution of plant species within the Long Point Property. The vascular plant inventory was conducted to provide coverage of each of the distinct ecological communities delineated within the Property (see Section 2.2.6 and Figure 5). Three-season botanical surveillance was conducted over the full period of study (i.e., from late April to September).

### 2.2.6 Ecological Land Classification

The Long Point Property has been assessed following the Ecological Land Classification (ELC) methodology described by Lee *et al*. (1998). This approach generates classification and mapping of ecological communities down to a size of approximately 0.5 hectares or less, and allows much more detailed classification of communities than broad scale Landsat imagery. ELC of the Property was completed through the following general task sequence:

- Initial site reconnaissance to ascertain major community types, topography, and soil characteristics (completed in April 2017)
- Subsequent delineation of community distribution using satellite imagery and aerial photos for a first approximation of ELC.
- Further detailed site monitoring to refine initial ELC approximation. Each distinct community was examined to determine soil characteristics and to determine the major woody and non-woody plant species present.

To facilitate characterizations of soil conditions (texture, moisture regimes) vertical soil profiles were completed in multiple locations in each distinct ecological unit. Soil profiles were completed to a depth of approximately 0.5 to 1 m below ground surface (bgs) using a hand-auger.

The detailed site monitoring included examination of physiographic attributes such as topography/slope, surface soil profiles, and the possible presence of elevated water table. Within each identified unit, the following information regarding vegetation cover was recorded:

- Relative species composition and percent cover of trees and shrubs, where present
- Caliper and height range of trees in wooded units, and
- General under-storey characteristics and non-woody species composition.

Copies of the completed ELC data sheets for the Long Point Property are provided in Appendix B.

### 2.2.7 Aquatic Features

The on-site surveillance of the Long Point Property included direct examination of all identified aquatic features on or near the Property. To generate an understanding of hydrological characteristics, this includes all streams, ponds, defined drainage features, and also wetlands (see Section 3.3 and Figure 4).

In regard to streams, surveillance included the municipal drain that traverses the western perimeter of the Property, and also the watercourse referred to as "Watercourse 1" in the

CCSS (Gore and Storrie, 1993). Examination included the visual assessment of several standard habitat variables (substrate type, in-stream and riparian cover, channel morphology), and the presence of aquatic biota (macrophytes, invertebrates, fish, amphibians).

Aquatic surveillance was also conducted on several small ephemeral ponds within or immediately adjacent to the Property, as well as diffuse (non-channelized) but discernable drainage features within or adjacent to the Property. These features were examined in regard to their source, the persistence and spatial extent of standing water, the degree of collation of flow, and the nature of ground surface within the feature (substrates, vegetation, soil type). The mapped wetlands to the west of the Property were also subject to brief direct visual surveillance to develop a general understanding of their hydrological characteristics and functions. The capacity to assess these wetlands was constrained due to the fact that they are situated on private property outside of the bounds of the Long Point Property.

For the purposes of this EIS, the hydrology of the site has been examined with particular attention paid to the hydrological connectivity between potential development areas within the Property and the noted aquatic features.

# 3.0 PHYSICAL CHARACTERISTICS

## 3.1 Topography

The Long Point Property is in close proximity to the shoreline of Georgian Bay. The Property is relatively flat, with elevation generally in the range of 178 to 181 meters above sea level (masl). The Property generally slopes from south to north, and there is also a shallow depression in the centre of the Property that is a low point on the east-west axis. Within the overall low relief, there are zones of complex micro-topography, most notably in the western half of the Property. In this area, there are small lateral ridges and adjacent depressions scattered throughout the forested area.

## 3.2 Soils and Geology

Bedrock Geology of the Long Point property consists of the Lindsay formation of the Simcoe Group, which is comprised of grey crystalline limestone. Overburden consists of well-sorted outwash materials developed on the calcareous bedrock.

According to the Grey County soil survey (Gillespie and Richards, 1954), the soil encountered within and around the Long Point Property is Granby Sand. This soil type exhibits a sandy rooting zone up to 20 cm below ground surface (bgs) sourced from lacustrine sandy outwash. This soil unit is reported to be poorly drained, with water table generally close to surface, largely as a result of factors other than soil texture (i.e., topography, proximity to the lake).

Observations from a series of 3 borehole installations as part of hydrogeological investigation of the Property (see Rether, 2019) indicate the presence of a dark topsoil to about 20 to 30 cm bgs, overlying a layer composed primarily of fine sand to a depth of about 1.5 m bgs, then silt sand to about 4 to 5 m bgs, where bedrock is encountered.

Soil profiling conducted throughout the Property as part of this EIS has confirmed the wide-spread presence of the sand or sandy-loam surface soil throughout the Property. The typical profile consists of a dark layer of sandy topsoil, abruptly transitioning to fine beige sand at 20 to 40 cm bgs, and typically exhibiting a gradual transition to grey sand by 60 to 90 cm. In low-lying wet pockets, the topsoil layer tended to be shallower and also contained a bit more organic matter, and the transition to grey sand was closer to surface. A notable layer of grey clay was encountered at about 20 cm bgs in a small ephemeral pool in the west half of the Property. This area also exhibited a thin (<10 cm) layer of fibrous organic matter at the soil surface. This was the only location within the Property where a layer of organic matter and relatively impermeable sub-soil were encountered within 1 m of surface.

## 3.3 Hydrology

Hydrological characteristics of the Long Point Property have been determined on the basis of direct visual surveillance and also in consideration of information obtained from previously completed studies (e.g., Gore and Storrie, 1993). The various features that have been identified for discussion are depicted in Figure 4.

The general hydraulic gradient in the area around the Property is approximately south to north. There are two small watercourses that flow through or near the Property along this general gradient. This includes a municipal drain that flows along the western perimeter of the Property, eventually traversing Brophy's Lane and feeding to a drainage ditch that flows along the western side of Long Point Road. This ditch eventually discharges to Georgian Bay at the road's end.

To the east of the Property, there is a stream that was previously identified as "Watercourse 1" in the Craigleith Camperdown Subwatershed Study (CCSS - Gore and Storrie, 1993). This same naming scheme is applied in this EIS. Watercourse 1 flows north from Highway 26 along the western edge of Long Point Road, and is conveyed by culvert across the road at a point that is separated by about 40 m from the southeast corner of the Property. Watercourse 1 continues north and east for approximately 900 m before its discharge point along the shore of Georgian Bay.

The overwhelming majority of flow in both of the noted streams originates from lands up-gradient of the Property. The municipal drain is characterized by intermittent, event-based flow. There is effectively no flow through much of the growing season except short duration flow following significant precipitation events. Watercourse 1 exhibits permanent flow, partly as a result of groundwater inputs, but is still fairly responsive to precipitation events.

In addition to the two noted streams, there is a narrow drainage feature in the approximate centre of the Property where there is seasonal presence of water at or above the ground surface. This feature is identified as a "stream" in the TOBM OP (Appendix 1 - Constraints), but is not identified as such in GSCA mapping, the Grey County OP, nor MNRF base mapping. Within the Long Point Property, this feature does not exhibit well-defined channeling or the presence of various typical stream attributes (aquatic substrates, aquatic macrophytes). It is occupied entirely by vegetation comprised of herbaceous terrestrial plant species. While there appears to be capacity for some occasional movement of surface water or shallow groundwater toward the north, there is no apparent surface hydrological connection that conveys any water north of Brophy's Lane. The feature follows a very straight path on a roughly south-to-north alignment, whereas other narrow wetland features in the area (see Figures 2 and 4) are consistently aligned from southwest-to-northeast (see Figures 2 and 4). These characteristics suggest that the feature is probably man-made, likely to facilitate local drainage. For the purpose of this EIS, this feature is identified and discussed as a drainage swale.

In addition to the narrow drainage swale described above, there is a less-discernable drainage path along the northern boundary of the Property. There is evidence of intermittent movement of surface runoff along this path, but otherwise there are no characteristics of a true watercourse. Any water that moves along this path is directed westward toward the central drainage swale. This appears to be a source of hydrological input to a small ephemeral pool on the northern perimeter of the Property (see Section 4.2.3).

During soil profiling conducted in 2017 for the purpose of this EIS, the water table was observed to be near (within 50 cm bgs) or at surface in a number of locations throughout the Property during the spring period and/or after significant precipitation events. With the exception of the areas described as ephemeral pools, the water table declined to >50 cm bgs throughout the Property as the growing season progressed. Hydrogeological investigation of the Property (Rether, 2019) has revealed water levels in ranges as follows:

- about 60 to 80 cm bgs in June 2018,
- 13 to 59 cm bgs in December 2018, and
- 3 to 43 cm bgs in April 2019.

Overall, the Property is characterized as having a shallow water table, which is reflected in the presence of moist forest communities throughout most of the Property.

# 4.0 ECOLOGICAL CHARACTERISTICS

The following sections describe the ecological characteristics of the Long Point Property. A description of the regional ecology is provided for context. Results of on-site monitoring are summarized in Tables 1 to 5, and additional detailed results are provided in Appendix B.

## 4.1 Regional and Local Ecology

The Long Point Property is situated within the Mixedwood Plains *Ecozone*, and more specifically it is within the Manitoulin – Lake Simcoe *Ecoregion*, equivalent to Site Region 6E under Provincial classification. This Ecoregion is characterized by warm summers, mild winters, and relatively abundant precipitation (700 to 1000 mm/a) that is evenly distributed throughout the year. The dominant land cover is cropped land with significant areas of mixed forest. Climax vegetation is characterized by mixed hardwoods, including Sugar Maple, American Beech, Eastern Hemlock, Red Oak, and Basswood. Pioneer species include White Pine, Paper Birch, and Trembling Aspen. Yellow Birch, White and Slippery Elm, Red Maple, Black Ash and White Cedar are typical forest cover species in depressions and moist areas. Wetlands account for only about 3.5% of the total land area within this Ecoregion.

On a more local scale, the Long Point area north of Hwy 26, bisected by Long Point Road, sits in a low flat area in proximity to the Georgian Bay shore, and as a result is characterized by a considerable presence of wetlands. Much of the wetlands are part of the 166-ha Silver Creek Wetland Complex (a.k.a. Collingwood Shores Wetland Complex), which is made up of large significant coastal wetlands and a series of inland swamps. This is a Provincially Significant Wetland (PSW) complex that serves important ecological function, such as habitat for numerous wildlife species (including rare species), water quality improvement, groundwater discharge and recharge, and mitigation of sedimentation to the Bay. Those areas that are not wetland *per se* still tend to be characterized by the presence of relatively wet soils, and exhibit natural vegetation communities that tend to be dominated by species tolerant of damp or wet conditions. The area has been subject to clearing in the past and the existing woodlands tend to be relatively young and comprised of early succession species.

## 4.2 Ecological Communities

The delineation of ecological communities completed for the Long Point Property is intended to identify vegetation communities at a scale that has meaning and relevance to the overall objectives of the EIS.

The ecological communities currently encountered within the Long Point Property reflect the fact that the Property has been subject to past anthropogenic alteration, and that the Property lies within an area that is low and relatively wet.

Following the ELC system of Lee *et al.* (1998), there are five distinct community types present within the Long Point Property. Figure 5 depicts the distribution of these communities within the Property. Each community type and its ecological functions are briefly described in the following sections.

### 4.2.1 Meadow Communities

Mineral Cultural Meadow (CUM1)

The Cultural Meadow (CUM) community accounts for only about ~0.2 ha (~9%) of the Property in total. This includes a ~0.1 ha meadow in the core of the eastern half of the Property. This meadow is dominated by a mix of graminoid plants (orchard grass, fescue, smooth brome), abundant field horsetail, and a variety of common forbs (e.g. asters and goldenrod species, vetches, Wild Bean, Common Buttercup, Sweet Pea). The plant community includes many species typical of open disturbed areas, and includes numerous non-native species, some of which are considered invasive (e.g. Wild carrot, Birdfoot Trefoil). A few specimens of non-native tree species (Scots Pine, Norway Spruce) have recently established within the core of this meadow area, and there are common shrubs (e.g. Red-osier Dogwood) present at the interface of the meadow and surrounding woods.

There is also a long narrow strip of cultural meadow at the western edge of the Property, occupying the clearing associated with municipal drain. Inclusive of the drain channel, the area has width in the range of 10 to 15 m between the edges of bordering woodlands, and measures about 0.07 ha. The species composition of this meadow area differs from that of the central meadow, and the groundcover is also more sparse in this location. This is likely owing to more narrow dimensions, the presence of sandier and more well drained soil, and a more recent history of disturbance. There is a moderate presence of grasses and sedges, and a variety of forb species typical of disturbed sites (e.g. Birdfoot Trefoil, Wild Carrot, Silverweed, Common Yarrow, Black Medic, Brown Knapweed).

There are also very small pockets of meadow habitat at the front of Property, bordering Long Point Road. The plant community here is a mix of common grasses and forbs, similar to the central meadow but with a greater presence of plants typical of disturbed sites and commonly found along road corridors.

The ecological function of the Cultural Meadow community is likely limited primarily to supporting a relatively low abundance and diversity of common and unspecialized wildlife. The area of meadow is too small to be functional for any grassland-specialist species of bird or mammal. The results of direct wildlife surveillance support this characterization. There are no plant species which are considered to be of conservation concern in the meadow habitat.

### 4.2.2 Forest Communities

About 90% of the Long Point Property is currently under deciduous forest cover, comprised of several specific community types. Table 1 provides a summary of key characteristics of these forest types.

FOD3-2: Dry-Fresh White Birch-Poplar Deciduous Forest

This community type occupies an area of about 0.35 ha along the western end of the Property, bordering the clearing for the municipal drain. White Birch and Trembling Aspen co-dominate the canopy, which is about 90% closed. A few mature specimens of Sugar Maple, Basswood, and Black Cherry are also present in the canopy. This forest community is still relatively young and most trees are less than 30 cm DBH, with a few scattered specimens (mostly Trembling Aspen) in the range of 30-35 cm DBH.

The sub-canopy is reasonably well-developed and consists mainly of Green Ash, a few White Ash, and younger Aspens. A few scattered individual or small clusters of Eastern White Cedar are also present as part of the sub-canopy, mostly in lower spots.

The under-story is relatively dense, consisting of young ash, Round-Leaved and Alternate-leaved Dogwood, and some scattered clusters of Red-osier Dogwood. A few European Buckthorn are also present, mainly close to the forest edge bordering the municipal drain clearing.

The extent of ground cover within this forest community is variable, ranging from about 50 - 70%, generally becoming less dense toward the western perimeter of the Property. The ground layer is composed of species that are generally typical of deciduous forest communities in the Ecoregion. A fairly wide variety of mostly shade-tolerant species is present (e.g. Plantain-leaved Sedge, Bracken Fern, Sarsaparilla, Dog Violet, White and Red Baneberry, Colts-foot, Woodland Agrimony, False Solomon's Seal, White Rattlesnake-root, etc.). The distribution of several of these forest floor plants within the Property is confined to this particularly forest community type. This forest community occupies a portion of the Property characterized by complex micro-topography, leading to small scattered pockets where soil is relatively moist and where hydrophytic plant species (e.g. Boneset, Spotted Joe-pye Weed, various sedges) are part of the ground cover.

While this forest community is still a relatively young, it exhibits the highest diversity of tree species and the most well-developed forest structure of the different forest types occurring within the Property. In terms of ecological function, this forest appears to support a moderate diversity of birds, including several species with forest habitat preferences, but no *interior* forest species (see Table 4). Regionally common mammals are also present, but there is no indication of significant habitat function for fauna of any type. The only habitat function of note is associated with observations of Eastern Wood-pewee in or near this forest type within the Property. The Eastern Wood-pewee is an

SOCC, and the Birch-Poplar forest type could be considered as candidate Significant Wildlife Habitat (SWH) (see further discussion in Section 4.9).

FOD7-2 - Fresh-Moist Ash Deciduous Forest

This deciduous forest community type occupies most of the front (east) half of the Property, and accounts for about 20% of the Property in total. Tree species composition varies slightly within this community, but Green Ash is dominant throughout, with White Ash also present. Scattered young specimens of Trembling Aspen, White Elm, White Birch and Balsam Poplar are also found in the canopy, but in low numbers and never as a dominant element of the canopy. The vast majority of trees are <20 cm DBH, and many are < 10 cm DBH. Only a few isolated tree specimens are in the range of 30-35 cm DBH, mostly Trembling Aspen.

The spacing of trees in the Ash forest community is tight, but because the trees are young and small, the canopy is still thin and scattered and there is very limited forest structure. At present, there is simply a vertical gradation of older to younger ash. At the lowest level, there are also a few other shrub species including Red-osier Dogwood, and non-native honeysuckle.

As a result of the sparse canopy, there is considerable light penetration and ground cover is abundant (>90%). The dense layer of herbaceous cover is composed of a mix of graminoid plants and forbs, including many species typically found in disturbed areas (e.g. Common Dandelion, Forget-me-not, Common Strawberry, Common Yarrow, vetches, asters). There is a notable presence of species often found in association with moist soil conditions (Canada Mayflower, Poison Ivy, various sedges). There are small scattered low spots within this community type where water is present at or near soil surface in the early spring and/or after significant precipitation events.

FOD7 - Fresh-Moist Lowland Deciduous Forest

In the south-west portion of the property, there is a small (~ 0.1 ha) pocket of lowland deciduous forest. The species composition of the canopy is more variable in this location than in the main area of lowland ash forest. While Green Ash is a still a component of the canopy, Sugar Maple, Red Maple, White Birch and Basswood are also present. Most trees are in the range of 20 to 30 cm DBH, with a small number in the 30-35 cm range. Adjacent to a small pool feature, several specimens of Black Willow are present including one specimen measuring ~60 cm DBH and a few smaller specimens in the range of 25 - 30 cm DBH. The larger willow is by far the largest tree on the Property.

The sub-canopy in this area is reasonably well-developed, and includes mostly younger specimens of Green Ash, but also Maples and a few scattered Black Ash. The under-story is fairly dense and includes numerous Alternate-leaved Dogwood, some Pin Cherry, scattered specimens from the genus *Ribes*, and also an abundance of vine species (Wild Grape, Virginia Creeper, Poison Ivy).

Ground cover is dense (>90%) and includes horsetails, clusters of Bracken Fern, and various forbs commonly found in moist woodlands (Coltsfoot, Canada Mayflower, Sarsaparilla, Woodland Agrimony, Zig-zag Goldenrod).

The western half of the Property where this forest community is located is characterized by complex micro-topography, resulting in small moist depressions where hydrophilic plant species are part of the ground cover. There is also a single ephemeral pool near the north edge of this community that is distinctly larger than the other scattered small depressions, and where standing water in excess of 10 cm deep is present for some duration during the spring. The pool is still relatively small (<100 $m^2$) and occupies a sharply defined depression that is about 70 to 80 cm below surrounding grade, with distinct uniform mounds on the outer edge. These characteristics suggest that this feature may have originated as a man-made excavation. The tree cover in immediate proximity to this pool includes a few specimens of hydrophilic species (Red and Black Ash, Peach-leaf Willow).

This forest type is generally expected to function as supportive to small numbers of regionally common wildlife. The key function of interest relates to the presence of some young specimens of Black Ash. This species has recently been categorized as "Vulnerable" in Ontario (i.e., Provincial Rank = S3). Accordingly, the Black Ash is considered as an SOCC, and this forest community could be considered as SWH (see further discussion in Section 4.9).

Fresh-Moist Poplar Deciduous Forest Type (FOD8-1)

About half of the Property is occupied by this deciduous forest type, including an isolated area of about 0.24 ha in the southeast corner of the Property and a large swath that covers much of the core of the Property (see Figure 5).

Trembling Aspen is the dominant canopy species through most of this community, although Balsam Poplar is notably present in certain parts (i.e., immediately north of the central cultural meadow). The canopy is patchy and relatively open in spots, with total canopy cover estimated to be about 70-80% on average. The dominant canopy trees range in size from 20 to 40 cm DBH. Ring counts from recently cut stumps of trees in this size class indicate that they are approximately 30 years old.

It should be noted that the block of Poplar forest occupying the south-east corner of the Property suffered a loss of a significant number of larger Trembling Aspen as a result of a wind storm in late 2016. Similar uprooting occurred in the stand dominated by Balsam Poplar on the northern perimeter of the Property. The uprooting of mature canopy trees has resulted in atypical canopy structure in these locations.

In the main core of this community, there are a few scattered Green Ash and also some White Ash that approach 30 cm DBH and are minor elements of the canopy. A few Basswood and White Birch are also present, but these specimens are mostly <20 cm

DBH and are primarily a component of the sub-canopy. In most locations, the sub-canopy is relatively sparse and dominated by Green Ash with younger Aspen and some Balsam Poplar as secondary components. Scattered specimens of Serviceberry are also found in the sub-canopy along with a cluster of young White Spruce near the southern Property line.

The relatively open nature of the canopy allows for high light penetration which in turn leads to high shrub and ground cover and species richness. The under-story includes young ash, Alternate-leaved and Round-leaved Dogwood, scattered small clusters of Red-osier Dogwood, and Choke Cherry. There are numerous vine species (Wild Grape, Virginia Creeper, Poison Ivy) present, particularly in lower portions of this forest community. Ground cover is variable but relatively dense throughout this forest community, ranging between 60 and 90%. The ground cover is composed of mixed patches of graminoids (sedges and grasses), ferns (mainly Bracken Fern) and various common woodland forbs (e.g. Canada Anemone, False Solomon's Seal, Colts Foot, Northern Bedstraw, Wild Bean). Most of the ground layer plants are typical of moist woodlands in the Ecoregion.

In parts of this forest community, various factors result in relatively wet soils and the presence of hydrophilic plant species. This includes very small patches associated with complex micro-topography, and a roughly 400 $m^2$ area occupied by a drainage swale, as described in Section 3.3. It also includes a few discernable ephemeral pools, with areas in the range of approximately 50 to 150 $m^2$. The characteristics of these pools are largely consistent with the Green Ash Mineral Deciduous Swamp (SWD2-2) community type described in Section 4.2.3. The approximate location of the ephemeral pools is depicted in Figure 4.

In terms of ecological function, the available information suggests that the Poplar forest community supports a modest abundance and diversity of relatively common fauna species with secure populations. There is no evidence of the presence of SAR, SOCC or SWH function associated with this forest type within the Property.

### 4.2.3 Wetland Communities

The Long Point area north of Hwy 26, bisected by Long Point Road, is situated in a low flat area bordering Georgian Bay, and as a result the presence of wetlands is key aspect of the local natural heritage system.

Green Ash Mineral Deciduous Swamp Type (SWD2-2)

There are a series of narrow sloughs to the west of the Property that are part of the Silver Creek PSW complex (see Figures 2 and 3). The nearest of the sloughs west of Property was directly examined for the purpose of this EIS, and determined to be occupied by Green Ash Mineral Deciduous Swamp community type. These wetland units are fully forested, with Green Ash dominating the canopy and Swamp Maple being a secondary

component. Most of the trees comprising the swamp forests are <30 cm DBH, indicative of a relatively young community.

In the early spring, the swamp is occupied by 10-15 cm of standing water, becoming dry by early summer. The flooded area is generally devoid of vegetation, except for a few small scattered clumps of sedges. On the perimeter, ground cover includes typical species of wet woodlands, such as Sensitive Fern, Dwarf Raspberry, Coltsfoot, and Meadow Horsetail.

The SWD2-2 community also occurs as very small inclusions within woodland communities located in the immediate confines of the Property. Specifically, this community is associated with the four discernable ephemeral pools within the Property (see Figure 4). In all cases, the proximate forest cover is dominated by Green Ash. Larger Green Ash (up to 25 cm DBH) occupy the perimeter of these ponds, while young specimens (<5 cm DBH) are establishing in spots within the flooded zone. The young ash are typically accompanied by Red-osier Dogwood and a few willow shrubs in some instances. The flooded area is generally devoid of herbaceous plants, while various hydrophilic plants occupy the perimeter (e.g. Water-horehound, Sensitive Fern, Bladder Sedge, Fringed Loosestrife, Woundwort). It should be noted that the ephemeral pools do not exhibit significant accumulation of an organic layer at the soil surface. The presence of such an organic layer is generally regarded as a characteristic feature of the swamp community.

For the purpose of this EIS, the pools are too small to warrant mapping as distinct wetland features, regardless of the presence of conditions indicative of wetlands (i.e., hydric soils and hydrophilic plants). Because of their small size, these features are considered as inclusions and isolated features within the surrounding forest communities.

In regard to ecological function, the small ephemeral pools do not have significant associations of fauna with specific preferences for wetland habitat. A few specimens of common amphibians have been observed at or near these features, but not in significant number and without any evidence of breeding activity (see Section 4.5). Hydrologically, these features appear to function as small recharge features and are not sources of hydrological input to streams or rivers. The presence of pooled water is seasonal, and the ponds were observed to be without standing water by mid-to-late June. The hydrological balance of these small ephemeral pools appears to be maintained primarily by elevated water table in the spring. The two features near the northern boundary of the Property also appear to be maintained in part by surface water runoff that is intermittently conveyed along drainage paths along the northern perimeter.

The characteristics of the noted pools are <u>not</u> consistent with the typical characteristics of what are often referred to as "vernal pools". Two of the four pools within the Property have discernable points of surface water inflow, and none of the pools were found to support plant or animal species which are considered to be indicative of vernal pools. Specifically, the pools were not found to support fairy shrimp (*Eubranchipus* spp.),

salamanders (*Ambystoma* spp.) or Wood Frog (*Lithobates sylvaticus*). These species were not observed at any location within or near the Property.

Mineral Meadow Marsh (MAM2)

The central drainage swale described in Section 3.3 is fully vegetated and lacks the fundamental characteristics of a stream. Based on soil and plant community characteristics, this feature could be described as a Mineral Meadow Marsh in the ELC context. This community type is typically the interface between a water body and adjacent upland habitat. In this instance, there is no water body present, but the feature itself appears to have functioned as an intermittent watercourse, at least historically.

The area in question is a narrow band occupying the low centre of the Property, measuring under 0.05 ha within the Property boundary. Typical of the Meadow Marsh community, the area is fairly rich in grass and sedge species (e.g. Water Sedge, Awl Fruited Sedge, Fowl Blue Grass, Common Three-square, Soft-stemmed Bulrush, Crested Sedge). There is also an abundance and diversity of hydrophilic forbs (e.g. Swamp Aster, White Turtlehead, Harlequin Blue Flag, Boneset, Spotted Joe-pye Weed, Broadleaf Cattail, Purple Loosestrife). Woody vegetation consists of a few scattered Red-osier Dogwood and willow shrubs, mostly on the periphery near the interface with adjacent forested areas.

The ecological function of this small area of marsh habitat appears to be minor and non-critical habitat for fauna that are regionally common and abundant. There is no evidence of the presence of fauna with specific preferences for marsh or other wetland habitat. The narrow band of marsh does not appear to be hydrologically connected to any river or stream at present, and likely functions as a local recharge feature.

For the purpose of this EIS, this feature is described as a "drainage swale" and is assessed in consideration of its observed characteristics and functions.

## 4.3 Vascular Plants

The detailed plant species list for the Long Point Property is provided in Appendix B (Table B1). This list reflects three-season monitoring through the period of April to September 2017. A total of 147 vascular plant species have been identified within the Property. Of those that are native to Ontario, all but one are ranked as “Secure” (S5) or “Apparently Secure” (S4) in the Province. The lone exception is Black Ash (*Fraxinus nigra*), which has a recently revised Provincial Rank of "Vulnerable" (S3). In November 2018, COSEWIC released their assessment of Black Ash and recommended a status of *Threatened* for this still relatively common tree species. Black Ash has not yet been added to Schedule 1 of the Federal Species at Risk Act (SARA), and has not yet been assessed by the Province of Ontario. The presence of this tree as a *Priority Species* is discussed further in Section 4.8. None of the other plant species observed within the

Long Point Property have been subject to assessment by either COSEWIC or COSSARO as possible Species at Risk (SAR).

The terrestrial plants found within the Long Point Property consist of a mix of native and non-native species, many of which are typical of sites that have been subject to anthropogenic disturbance. About one-third of the plant species identified within the Property are non-native. At least 20 of the vascular plant species identified at the Long Point Property are considered by various sources to be invasive in Ontario.

There are only a few tree species that exhibit meaningful abundance and/or distribution within the Property. This includes primarily ash and aspens/poplars that are early-succession species. Scattered specimens of several non-native tree and shrub species (e.g. Scots Pine, Norway Spruce, Common Lilac, non-native Honeysuckle, and European Buckthorn) are present. Regional climax tree species (Beech, Sugar Maple, Ironwood) are not a meaningful component of forest cover within the Property. Overall, the number, abundance and distribution of species typically encountered in mature forest conditions is very limited within the Property.

About 20% of the vascular plant species encountered within the Property are species which grow primarily in wet conditions. The presence of these hydrophytes partly reflects the relatively wet nature of the Property. These plants are largely associated with topographical depressions, including the drainage swale that bisects the Property and the few small ephemeral pools found within the Property. Hydrophilic plant species are also present in scattered fashion in the channel of the municipal drain that traverses the western perimeter of the Property.

## 4.4 Birds and Bird Habitat

A breeding bird survey (BBS) has been completed at the Long Point Property, based on focused point-count census in June and July 2017. More general surveillance of birds within and adjacent to the Property was also conducted throughout the full monitoring period (April to September). These monitoring efforts provide a reasonably reliable indication of the status of the Property in terms of avian presence and the provision of habitat for breeding and non-breeding purposes (e.g. foraging, staging). The basic characteristics of the BBS point-count stations are summarized in Table 2, and station locations within the Property are depicted in Figure 3. Detailed results of the point-count monitoring program are provided Appendix B, and a summary of the results of the point-count inventory is provided in Table 3. A full list of all bird species observed at the Property throughout the full monitoring period is provided in Table 4.

The Long Point Property lies close to the boundary between Ontario Breeding Bird Atlas (OBBA) squares 17NK52 and 17NK53. Data have been obtained for these squares and considered as regional context for the Property (see Appendix B). The local breeding status determined through the OBBA is included as context in Table 4. The OBBA surveillance of squares 17NK52/53 has identified 130 species of bird with some evidence

of breeding within the 20-km$^2$ area of those squares. Of these species, 22 have been subject to assessment by COSEWIC and/or COSSARO. As of the date of this report, nine of the 22 have been deemed to be *Not at Risk*. The 13 species on record for the area in question that are currently identified as either *Endangered*, *Threatened* or *Special Concern* include the Alder Flycatcher, Bank Swallow, Barn Swallow, Bobolink, Canada Warbler, Chimney Swift, Common Nighthawk, Eastern Meadowlark, Eastern Wood-pewee, Golden Winged Warbler, Louisiana Waterthrush, Red-headed Woodpecker, and Wood Thrush. The OBBA data indicate most of these species are either "possible' or "probable" breeders in the squares in question, and several have no breeding evidence on record in one or both squares for the last atlas period (2001-2005). The Eastern Wood-pewee was the only one of these 13 species that was observed during the surveillance of the Property and adjacent lands in 2017/18. On a few occasions, adult males were heard calling from the Property immediately to the west. Calling adults were also observed on two occasions within the confines of the Property, in association with the Birch-Poplar forest area at the west end.

OBBA point-count station #5 (square 17NK53) was established along Long Point Road immediately adjacent to the Property. The data for this station are directly reflective of the avian community that resides in and around the Property. A total of 19 species were recorded during OBBA surveillance at point-count station #5 (see Appendix B). These species are all common in Ontario and Grey County, and none are currently considered to be an SOCC or SAR. All but two of the 19 species observed at OBBA PC-5 were encountered during monitoring conducted at the Property in 2017. The two species in question are the Common Yellowthroat and Yellow Warbler, both of which are regionally and provincially common and not of any conservation concern. It is considered quite possible that either of these species could be present at times within the confines of the Property, particularly in the younger and more open habitats in the front (east) half of the Property.

In total, 31 species of birds have been observed within or in immediate proximity to the Property over the period of study. All of these species are on record for the relevant OBBA squares. Only six species were confirmed as breeding within the Property boundary, and another nine species were indicated as "probable" breeders. The Property was surveyed for the presence of stick nests in early spring prior to the emergence of deciduous foliage, and no stick nests were observed. Two species (Ruby-crowned Kinglet and White-throated Sparrow) were only observed in late April and not during the breeding season. These are considered to be migrants with low likelihood of breeding presence within the Property.

The Provincial ranking of 27 of the species observed is "secure" (S5), and the remaining four species are ranked as "apparently secure" (S4). Only one of the species observed (the Eastern Wood-pewee) is considered to be Species of Conservation Concern (SOCC) (see further discussion in Section 4.8).

In summary, the bird community encountered at the Long Point Property consists of a moderately diverse mix of relatively common species that represent a mixture of habitat

preferences. More than half of the species encountered are considered as generalists or early succession species, and about one-third are considered forest species. The forest species occurrences were mainly in association with the Birch/Poplar forest cover at the west end of the Property and also west of the municipal drain. None of the forest species observed are considered to be forest *interior* species.

## 4.5 Amphibians

During focused amphibian monitoring and broader general surveillance of the Long Point Property and adjacent lands, the presence of five amphibian species was evidenced, as follows:

- Grey Treefrog (*Hyla versicolor*) - heard calling off property in association with wetland areas to the north west. There were no occurrences of this species within the confines of the Property.

- American Toad (*Anaxyrus americanus*) - an adult specimen was observed in association with the municipal drain on the western periphery of the Property.

- Northern Leopard Frog (*Lithobates pipiens*) - an adult specimen was observed in upland habitat (cultural meadow) near front of Property.

- Green Frog (*Lithobates clamitans*) - a single adult specimen was observed near a small wetland pocket in the western end of the Property.

- Western Chorus Frog (*Pseudacris maculata*) - a single observation of an adult in upland habitat (Ash forest) near the front of the Property.

Other than low frequency calls of Grey Treefrogs occurring outside of the Property boundary, no breeding vocalizations of any of the noted amphibian species were heard within or near the Property. Small ephemeral pockets of standing water within the Property were subject to direct visual surveillance in the spring and early summer of 2017 and 2018 and no amphibian egg masses or larvae were observed.

The populations of four of the five noted species in Ontario are considered "secure" (S Rank = S5), and these species are not considered to be species of conservation concern. The Western Chorus Frog has a provincial status of "vulnerable" (S3). This species has been designated by COSEWIC as "Threatened", but is currently considered by COSSARO to be "Not at Risk". The Chorus Frog is discussed further in Section 4.8.

Overall, there are a few amphibian species present in relatively low abundance within the Property, but there is no evidence of meaningful amphibian reproduction occurring within the Property. Amphibian breeding is likely precluded by the fact that only very small and shallow pockets of standing water occur within the Property, and these have been observed to dry out by early or mid summer.

## 4.6 Other Fauna

### 4.6.1 Reptiles

During monitoring conducted in 2017, no reptile species were detected either within or adjacent to Property. The nature of the Property is such that locally common snakes (e.g. Eastern Gartersnake) might be present from time to time. In absence of permanent standing water within the Property, the likelihood of presence of any species of turtles is considered to be very low.

There are previously compiled records of other species of reptile occurring in relatively close proximity to the Property. This includes Blanding's Turtle and Eastern Milksnake, both of which are considered herein as *Priority Species* and are discussed further in Section 4.8. The occurrences of these two species are reported in an EIS for lands immediately to the west of the Long Point Property. The EIS report (Hensel, 2009) describes occurrences of single specimens of both Blanding's Turtle and Eastern Milksnake in proximity to the intersection of Long Point Road and Hwy 26. The Blanding' Turtle had been reported to the ecologist conducting the previous EIS by a resident living on Long Point Road. During the current EIS for the Long Point Property, a brief discussion was had with the same resident about the turtle sighting, allowing confirmation of location and timing. During current surveillance of the Long Point Property, neither Blanding's Turtle nor Eastern Milksnake were observed within or near the Property.

In regard to Blanding's Turtle, the single record of occurrence does not suggest that this species is present in proximity to the Property for nesting or over-wintering purposes. The nearest wetlands with persistent standing water and which might sustain local populations of Blanding's Turtle are over 200 meters away from the Long Point Property, and functionally isolated by the road corridors (Hwy 26 and Long Point Road).

### 4.6.2 Mammals

Ecological monitoring of the Long Point Property revealed direct evidence of the presence of six mammal species, as follows:

- White-tailed Deer (*Odocoileus virginianus*)
- Coyote (*Canis latrans*),
- Eastern Cottontail (*Sylvilagus floridanus*)
- Northern Raccoon (*Procyon lotor*)
- Grey Squirrel (*Sciurus carolinensis)*)
- Unidentified bat species

It is considered likely that a number of other species of regionally common mammals could be present at the Property from time to time. Recent inventories in reasonable proximity to the Property (AEC, 2016, Morris, 2012) have indicated at least occasional local presence of eight species of mammal. In addition to the species evidenced at the Long Point Property, the local list includes the Meadow Vole (*Microtus pennsylvanicus*), Muskrat (*Ondatra zibethicus*), and the Red Squirrel (*Tamiasciurus hudsonicus*). There is a reasonable likelihood that the Red Squirrel and Meadow Vole could be encountered within the Property at times, but the presence of the Muskrat is unlikely owing to an absence of suitable aquatic habitat.

With the exception of unspecified bat species, none of the mammals evidenced in the general vicinity of the Long Point Property are considered to be SOCC or SAR. All of these mammal species are ranked as "secure" (S5) in the province of Ontario and are common in Grey County.

In regard to bats, there was a single occasion when 2 or 3 bat specimens were engaged in aerial foraging over the clearing associated with the municipal drain. The bats appeared to be specimens of Little Brown Myotis (*Myotis lucifugus*), but this was not confirmed. The bats appeared to use the full length of the clearing from Hwy 26 to Brophy's Lane, with no specific association with the Long Point Property. The forest communities found within the Property are relatively young, and there is an absence of larger dead or dying trees that might contain hollows, cavities, large bark flakes and crevices that could function as roosting or hibernation sites. Rock outcrops, caves or other sites that could serve as hibernation sites are not found on or near the Property. The presence of bats is discussed further as a potential element of SWH in Section 4.9.

Overall, the likelihood of presence within the Property of mammal species that are of conversation concern is considered to be very low, and not likely to be meaningful to the viability of the local or regional population.

### 4.6.3 Invertebrates

Visual surveillance of the Property did not reveal any evidence of the presence of invertebrates typically associated with wetlands (e.g. Odonata, Daphnia) in or near the small ephemeral pools or the drainage swale.

No significant presence of butterflies or moths was observed during the period of on-site monitoring. Review of the Ontario Butterfly Atlas indicates an expected presence of about 80 to 90 species in the area of the Property (Square 17NK52), none of which are considered rare. The Monarch Butterfly (*Danaus plexippus*), which is currently classed as *Special Concern* in Ontario, is certainly present in the Long Point area. Occasional presence of a limited numbers of Monarchs in the small Cultural Meadow areas associated with Property is certainly possible, but none were observed during the period of study.

## 4.7 Aquatic Ecology

The characteristics and functions of aquatic features associated with the Long Point Property are based partly on direct surveillance completed in 2017/18, and partly on existing information and documents.

### 4.7.1 Municipal Drain

The municipal drain that flows along the western perimeter of the Property is an engineered feature with various characteristics that generally limit its ecological function. It has a bankfull channel width of about 4 m and an active channel width of about 2.5 m. The channel exhibits a completely straight alignment and passes through an area cleared of vegetation other than very low ground cover. As a result, there is an absence of riparian vegetative cover.

The vast majority of the channel is lined with artificial rip rap substrate. There is a limited presence of some algal cover and limited pockets of fine sediment deposition in the drain, but overall there is a functional absence of natural substrates. There is a moderate presence of herbaceous vegetation that has established within the channel, but aquatic macrophytes are effectively absent. The plants that are present are terrestrial species, including a variety of common species that are hydrophytic or tolerant of wet conditions (e.g. Curly Dock, Narrow-leaf Cattail, Canada Bluejoint, Meadow Horsetail, Colts Foot, Pennsylvania Bittercress).

The flow regime is intermittent, appearing to consist of short-term flows that follow significant snow-melt or precipitation events. There is no evidence of sustained base-flow in this watercourse.

The available information suggests that the drain is not likely to function as direct fish habitat, and certainly no fish were observed in the drain during the period of study. The drain does eventually discharge to Georgian Bay, so it may have some limited function as indirect fish habitat at the point of discharge. Based on the flow regime and the various aspects of the flow path (straight, low gradient, multiple culverts), it is likely that hydrological connectivity with the waters of Georgian Bay is not conducive to migration of fish from the Bay to the stretch of the drain adjacent to the Property. No aquatic fauna were observed in association with the municipal drain during the EIS study period.

### 4.7.2 Watercourse 1

Watercourse 1 exhibits a well-defined, straight, open channel on the west side of Long Point Road from Hwy 26 north to a point just to the south of the Property. The channel banks are lined with abundant herbaceous riparian vegetation cover, but there is no woody riparian cover in this stretch. This portion of the watercourse consists primarily of pool habitat (estimated at about 80% of total habitat) with some run and very little riffle.

The substrate consists mainly of fine sediment with some presence of gravel and occasional cobbles.

This watercourse is conveyed via culvert across Long Point Road at a point that is about 40 m from the south-east corner of the Property (see Figures 2 and 4). East of Long Point Road, the watercourse exhibits a more natural channel form relative to the west side of the road. There is natural meander, coarser substrate, less pool habitat, and full woody riparian cover. From Long Point Road, the watercourse traverses a mix of woodlands and open fields before eventually discharging approximately 850 m downstream into Georgian Bay.

Watercourse 1 exhibits year round flow. In terms of fish community, it has been previously designated by the GSCA as a *cold water* stream. The length of Watercourse 1 north of Hwy 26 has been subject to fish community surveillance in previous studies, most recently in 2008 (Hensel, 2009). The previous fish community surveillance indicates the presence of a relatively diverse community (11 species total). The fish species observed are typical warm/cool water fish species that are widely distributed within Ontario, and most are warm-water forage species. There is moderate connectivity with Georgian Bay which likely enables the migration of fish into and out of this watercourse. This is evidenced by the detection of Rainbow Trout and White Sucker during the previous surveillance of this reach of the watercourse, likely migrating up from the Bay. None of the fish species on record are considered as sensitive to environmental change, and none are considered to be SOCC or SAR.

## 4.8 Priority Species

For the purpose of this EIS, the term "Priority Species" includes:

1. any species with a provincial (sub-national) conservation status rank (SRank) of S1, S2, S3 or SH, or otherwise considered rare in Ontario, and
2. any species that has been designated as either *Endangered*, *Threatened*, or *Special Concern* by either the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) or the Committee on the Status of Species at Risk in Ontario (COSSARO).

The term "Species at Risk" (SAR) is applied to those included in regulatory listings as *Threatened* or *Endangered*, and thus subject to certain regulatory prohibitions. The term "Species of Conservation Concern" (SOCC) is generally applied to species other than those legally designated as *Threatened* and *Endangered.*

Species of any of the noted designations are all tracked by the Natural Heritage Information Centre (NHIC). Historic records from the NHIC include records of nine species in proximity to the Long Point Property. The NHIC Element Occurrence (EO) records include any species that are considered herein as Priority Species. NHIC EO

records were obtained for the 1-km grid segments encompassing or immediately adjacent to the Long Point Property (four squares in total). A summary of the EO listings for these squares is provided in Table 5. A total of six species are listed. Species with observation records in the last 25 years include the Snapping Turtle, Blanding's Turtle, and the Threespine Stickleback. The Blanding's turtle occurrence was an adult male observed in or near Watercourse 1 just north of Hwy 26. The Blanding's Turtle is the only species subject to legislative protection as a provincial and/or federal SAR.

Other studies conducted in proximity to the Property in recent years have identified the presence of a number of Priority Species in the area (within 10 km), including some that are listed by the NHIC and several others that are not. The various Priority Species for which there are recent records of occurrence, aside from NHIC EO records, within a few km of the Property are as follows:

- Monarch Butterfly (*Danaus plexippus*) - *Endangered* federally and *Special Concern* provincially - provincially ranked as "Apparently Secure" (S4).
- Eastern Wood-pewee - *Special Concern*, both federally and provincially - provincially ranked as "Apparently Secure" (S4).
- Bobolink (*Dolichonyx oryzivorus*) - *Threatened,*, both federally and provincially, provincially ranked as "Apparently Secure" (S4).
- Eastern Meadowlark (*Sturnella magna)* - *Threatened,*, both federally and provincially - provincially ranked as "Apparently Secure" (S4).
- Butternut (*Juglans cinerea*) - *Endangered*, both federally and provincially - provincially ranked as "Vulnerable" (S3)
- Barn Swallow (*Hirundo rustica*) - *Threatened,* both federally and provincially - provincially ranked as "Apparently Secure" (S4).
- Western Chorus Frog (*Pseudacris triseriata)* - *Threatened* federally, *Not at Risk* provincially - provincially ranked as "Vulnerable" (S3)
- Eastern Milksnake (*Lampropeltis triangulum*)- *Special Concern* both provincially and federally - provincially ranked as "Vulnerable" (S3)

Direct surveillance of the Property in 2017 and 2018 included a series of specific monitoring efforts that address the possible presence of the above-noted Priority Species. Through site surveillance, the presence of only two of these species was indicated within or immediately adjacent to the Property; 1) the Eastern Wood-pewee and 2) the Western Chorus Frog.

The Eastern Wood-pewee was observed on a few occasions singing or foraging in or near Birch/Poplar forest habitat (ELC designation FOD3-2) near the Property's western periphery. This included male vocalizations originating off Property in wooded areas to the immediate west of the Property. Although this species may nest in many types of wooded habitats, it is most commonly associated with the mid-canopy layer in forest

stands of intermediate age and in mature stands with little under-story vegetation. These conditions only occur near the western end of the Property.

There was also a single observation of an adult Western Chorus Frog in upland habitat within the front half of the Property. This species is considered to be relatively widespread and common in southern Ontario, but population declines along the St. Lawrence and in southern Quebec have led to the federal SAR listing. The preferred breeding habitat for this frog species is fishless ponds with at least 10 cm of permanent standing water. This habitat is not present within or immediately adjacent to the Property, and there was no evidence of breeding presence of this species within the Property during the 2017/2018 surveillance (see Section 4.5).

In December 2018, subsequent to the completion of the core EIS monitoring effort at the Long Point Property, the Provincial Status of Black Ash (*Fraxinus nigra*) was changed from S4 (Apparently Secure) to S3 (Vulnerable). During ELC monitoring in 2017, this species was found in association with the Lowland Forest community (FOD7) in the west half of the Property. A brief survey of the Property in October 2019 and again in August 2020 confirmed the presence of a limited number of young specimens of Black Ash in the area of the FOD7 community. Black Ash were not observed elsewhere in the Property.

In regard to general concerns regarding species-at-risk bats, there are several bat species that can be found, at least on occasion, in Grey County. This includes four that are listed as Endangered: Tricolored Bat (*Perimyotis subflavus*), Little Brown Myotis bat (*Myotis lucifugus*), Northern Myotis (*Myotis septentrionalis*), and the Eastern Small-footed Myotis (*Myotis leibii*). The Northern Myotis is generally encountered in coniferous forest, while the three other species-at-risk bats are each common to deciduous or mixed forest habitat, and could theoretically be found within or immediately adjacent to the Property. As noted in Section 4.6.2, several specimens of what appeared to be Little Brown Myotis were observed on one occasion, engaged in aerial foraging along the length of the municipal drain that runs along the western perimeter of the Property. There was no clear association between the bats and the adjacent forest cover within the Long Point Property. The likelihood of presence of maternal colonies is dependent on the local abundance of large **(**≥25 cm DBH) snags/cavity trees. Within the confines of the Long Point Property, there are very few tree specimens that could be regarded as favorable snag trees. The density of snag trees does not meet the density requirement for high quality maternity roost habitat (i.e., >10 snags/hectare). The Property does not encompass or border any occurrences of Cliff-Cave ecosites and does not contain any features (caves, crevices) that could serve as hibernacula. Overall, there is some possibility of occasional and intermittent presence of species-at-risk bats within or near the Long Point Property, but there is no reason to expect the concentrated presence of bats for hibernation or maternal roosting purposes.

Other than the three noted SOCC (Western Chorus Frog, Eastern Wood-pewee, Black Ash), all flora and fauna observed on or near the Long Point Property are from relatively secure populations and do not warrant any consideration as conservation concerns. The

other Priority Species on record within the general area have not been observed within the Property, and the preferred habitats of most of these species are generally not present within the Property.

## 4.9 Significant Wildlife Habitat

For planning purposes in Ontario, Significant Wildlife Habitat (SWH) is defined as habitat that is "*ecologically important in terms of features, functions, representation or amount, and contributing to the quality and diversity of an identifiable geographic area or Natural Heritage System*".

The information available for the purpose of this EIS, as presented above, has been reviewed in specific consideration of the potential presence and implications of SWH within the Long Point Property. The analysis of potential SWH presence and impacts is based on guidance provided by the MNRF (MNR 2000, MNRF 2015). There are several categories and specific types of designated SWH, which are addressed below. These various categories have generally recognized associations with a number of the ELC community types that have been identified within the Property. The presence of these communities does not necessarily equate to the presence of SWH. The determination of SWH habitat is ultimately based on direct evidence of presence of the class of wildlife in question.

### 4.9.1 Seasonal Concentration Areas

The life cycle of various animal species finds them present in certain areas at certain times in notably concentrated numbers. Usually the location is characterized by a relative abundance of food, shelter/cover or conditions required for breeding purposes. There are a variety of established types of seasonal concentration areas, a number of which could be supported by the plant communities found in the area of the Property. The status of the candidate seasonal concentration areas considered is discussed below.

Deer wintering yards:

There are no deer wintering yards that have been identified in the vicinity of the Property, nor is suitable habitat (primarily coniferous cover) available for this type of seasonal concentration area.

Concentration areas for waterfowl and shorebirds:

There is no evidence that any of the wetlands or other habitat types found within or near the Property support concentrated breeding or migratory activity of waterfowl or shorebirds. Direct surveillance indicates that these bird groups are absent from the Property and immediately adjacent lands.

Bat hibernacula and maternity colonies:

As discussed in Section 4.6.2, a few foraging bats were observed in the open area associated with the municipal drain along the western perimeter of the Property. There was no evidence of maternal roosting of bats within the wooded portions of the Property during the surveillance period. The Property also generally lacks the attributes that would be conducive to the presence of hibernacula or maternal colonies (i.e., relatively large snag trees).

Turtle wintering areas:

Monitoring has not produced direct evidence of turtle presence within or near the Property, nor are there water bodies present which could serve as turtle wintering areas. The small ephemeral ponds found within the Property do not provide water depth or duration or suitable substrates to support over-wintering turtles.

### 4.9.2 Rare Vegetation Communities

As per the MNRF (2015) there are a number of vegetation communities that can be considered as rare in Ecoregion 6E, including alvars, dunes, prairies, barrens, cliffs and old growth forest. These community types are not found within the Long Point Property (see Section 4.2). The communities found within the Property all have a Provincial Rank of S4 (Apparently Secure) or S5 (Secure).

### 4.9.3 Specialized Habitat for Wildlife

There are numerous species of wildlife that require substantial areas of certain habitat(s) that support critical stages of their life history in order for the local population to be sustainable.

Waterfowl Nesting Area:

The Property does not contain habitat elements that are generally recognized as potential waterfowl nesting area (i.e., wetlands adjacent to open uplands). The breeding bird survey (BBS) conducted throughout the Property in 2017 (see Section 4.4) did not yield any indication of the presence of any nesting waterfowl on or near the Property.

Woodland Raptor Nesting Habitat:

The Property does contain various areas of forested habitat that generally are recognized as potential nesting habitat for woodland raptor species. However, no raptor species were observed during the BBS conducted in all habitats within the Property, and no stick nests were observed during surveillance conducted in the early spring before leaf-out.

Turtle Nesting Habitat:

The Property does not contain any significant areas of exposed mineral soil (sand or gravel), except for the clearing associated with the municipal drain at the western edge of the Property. Very small patches of open sand are present in this area, and could be considered as appropriate substrate for turtle nesting. This area is not close to any open waters that could support adult turtles, and it is considered to be very unlikely that turtle nests would occur in this location.

Amphibian breeding habitat:

The Property contains several very small ephemeral pools within the forested area that could potentially function as breeding habitat for amphibians. However, these ponds are very small in size (<0.02 ha each) and tend to completely dry out by late spring or early summer. Surveillance conducted at the Property indicates a general absence of amphibian breeding activity in association with the ponds or any other parts of the Property (see Section 4.5). Overall, there is no evidence to indicate that any part of the Property functions as significant breeding habitat for amphibians.

Area-Sensitive Bird Breeding Habitat:

The forest cover within the Property is relatively immature and part of larger block with dimensions such that it does not meaningfully provide suitable forest interior habitat (i.e., >200 m from forest edges). During breeding bird surveillance (BBS) of the Property in 2017, the presence of only one species listed by the MNRF as an indicator species was evidenced. This consisted of the presence of a single nesting pair of Yellow-bellied Sapsuckers in the Birch-Poplar forest area at the back end of the Property, in relatively close proximity to the larger forested area immediately to the west of the Property.

### 4.9.4 Habitat for Species of Conservation Concern

In this context, SOCC include wildlife species that are listed as *Special Concern* or rare, but excludes those listed as *Endangered* or *Threatened* species.

Marsh Breeding Bird Habitat:

Suitable marsh habitat is not present within the Property, and none of the indicator species specified by the MNRF were observed during the BBS conducted throughout the Property in 2017.

Open Country Bird Breeding Habitat:

The Property does contain areas of cultural meadow habitat, but these are too small to function as breeding habitat for open country birds. None of the specified indicator species were observed during the BBS conducted throughout the Property in 2017.

Shrub/Early Successional Bird Breeding Habitat:

None of the Property is characterized as shrub/early successional habitat, and none of the indicator species specified for this habitat were observed during surveillance conducted throughout the Property in 2017.

Special Concern and Rare Wildlife Species

As discussed in Section 4.8, there are three species Provincially designated as *Special Concern* and/or with a Provincial Rank of S3 that are known to be present in or near the Long Point Property. This includes the Western Chorus Frog (S3), Black Ash (S3), and the Eastern Wood-pewee (Special Concern).

Focused monitoring of the Property revealed a single occurrence of the Western Chorus Frog in an upland location. Available information indicates that the Property does not support a meaningful number of Western Chorus Frogs or a meaningful level of reproductive activity by this or other amphibian species.

The Eastern Wood-pewee was observed in association with the Birch-Poplar deciduous forest type (FOD3-2) at the west end of the Property, but this species was present in very low abundance and there was no evidence to confirm nesting activity within the Property.

Young specimens of Black Ash occur in limited number in association with the Lowland Forest community (FOD7) at the west end of the Property. There is no known presence of this species elsewhere within the Property. Black Ash is the only species in this specific SWH category (i.e., "special concern or rare wildlife") with a meaningful presence within the Long Point Property, and for which consideration of the possible implications of proposed development is warranted.

### 4.9.5 Animal Movement Corridors

Amphibian Movement Corridors:

Corridors that facilitate movement of select amphibians between aquatic breeding habitat and terrestrial habitat, usually woodlands, can be specified as SWH. The woodlands and small wetland features within the Property have been surveyed and found not to constitute significant breeding habitat. Regular surveillance of the Property has indicated a relatively low abundance and diversity of amphibians (see Section 4.5), and has not reveal any evidence of substantial migratory movement of amphibians.

Deer Movement Corridors:

Areas of continuous and appropriate vegetation cover may serve as corridors that facilitate movement of deer to and from wintering yards may constitute SWH. There are no known deer wintering areas within or near the Property.

# 5.0 ANALYSIS OF POTENTIAL IMPACTS

The current Draft Plan of subdivision (see Appendix A) identifies a total of 22 residential lots distributed over the full length of the Property along a central access road terminating in a cul-de-sac. In combination, the road and residential lots account for about 1.7 ha, or 79% of the Property. In considering the scenario without accounting for any planning adjustments or mitigating measures, the maximum theoretical impacts include the following;

- loss or impairment of cultural meadow, up to a maximum of approximately 0.2 ha,
- loss or impairment of Significant Woodlands, to a maximum of approximately ~1.4 ha,
- encroachment within the "adjacent lands" (120 m) of a PSW located just west of the Property, and possible impairment of that PSW,
- indirect disturbance or impairment of two nearby watercourses, and
- direct harm or habitat loss of three Priority Species that have been observed within or near the Property.

The following analysis further examines the potential impacts listed above. For each of the specific natural features of concern (i.e., Significant Woodlands, Provincially Significant Wetlands, streams, and SOCC/SAR), the likelihood and significance of adverse effects due to potential development of the Property are qualitatively assessed. The assessed potential for adverse effects is based in part on the characteristics and functions of the features themselves. The assessment considers aspects of development as proposed in the current Draft Plan (Appendix A), including the extent of site alteration and various conditions that might be encountered within the Property both during and after construction.

Conclusions and recommendations drawn from this analysis, including mitigation recommendations, are provided in Section 6.

## 5.1 Priority Species

There are a total of 11 Priority Species (*i.e.*, SOCC or SAR) on recent record in the general vicinity of the Long Point Property. The Property generally does not exhibit the characteristics or specific habitat elements that would support local populations of most of the Priority Species that have been observed in the area. Direct surveillance produced evidence of the presence of three Priority Species within or immediately adjacent to the Property. This includes the Western Chorus Frog, the Eastern Wood-pewee, and Black Ash.

For the Western Chorus Frog and Eastern Wood-pewee, some harm or loss of a low number of individuals of both of these species is possible. These SOCC were observed in very low abundance in limited portions of the Property, and no evidence to confirm use of the Property for breeding purposes was encountered for either species. In absence of any indications of meaningful presence of these species within the Property, impacts resulting from development activity would be very limited in terms of frequency and numbers affected. Any such impacts would not be meaningful from a population perspective, either regional or local. Mitigation measures are available to further reduce the low level of risk posed to these species (see Section 6.3).

Black Ash is the only Priority Species with an established presence of multiple specimens within the Long Point Property. The area of Lowland Forest (FOD7 - see Figure 5) in the west half of the Property contains multiple specimens of Black Ash. Focused surveillance conducted in 2020 indicates that there are approximately 35 specimens of Black Ash present in this area. These specimens are concentrated to the immediate east and south of the small vernal pool found within the Lowland Forest area. All Black Ash specimens that have been observed are young, mostly 2 to 10 cm DBH. The largest observed specimen measures 14 cm DBH. No evidence of infestation with Emerald Ash Borer (EAB) has been observed to date. Under the current Draft Plan, the proposed access road terminates in a cul-de-sac which abuts the eastern edge of the Lowland Forest community. Lot 12 also abuts the Lowland Forest community, but neither Lot 12 nor the cul-de-sac intrude into the Lowland Forest community and remain adequately separated from the area where the Black Ash are found. There are no other aspects of the plan which encroach on the Lowland Forest, and there is no expectation of loss or impairment of Black Ash specimens.

## 5.2 Wetlands

### 5.2.1 Off-Site

A considerable amount of the wetlands in the Long Point area are part of the 166-ha Silver Creek PSW Complex (a.k.a. Collingwood Shores Wetland Complex). To the immediate west of the Property, there is a small area of wetland that is currently identified in the Grey County OP as "unevaluated". This wetland unit is in close proximity (<50 m) to wetland areas that are part of the PSW (see Figure 4), and it exhibits characteristics that are largely consistent with the nearby PSW units. If this wetland were to be evaluated, it is probable that it would be included in the PSW complex. For the purpose of this EIS, this unevaluated wetland is considered as if it were part of the PSW complex.

The area west of the Property also encompasses an area that is identified in MNRF mapping as unevaluated wetland (see Figure 2). This area has been subject to brief visual surveillance for the purpose of this EIS, and determined to consist of upland forest in locations other than the PSW and the Grey County unevaluated wetland. This is consistent with findings of focused delineation of wetlands in this area conducted as part of a previous EIS for the neighbouring property (see Hensel, 2009). For current

purposes, the area mapped by the MNRF as unevaluated wetland is considered as an upland area.

At the most proximate point, the western boundary of the Long Point Property is ~20 m from the perimeter of the nearest wetland area belonging to the Silver Creek PSW complex (see Figures 2 and 4). About a third of the Long Point Property lies within 120 m (*i.e.*, within the "adjacent lands") of the closest part of the PSW complex.

The nearest wetland areas to the west of the Property have been briefly examined and identified as Ash Mineral Swamp (SWD2-2), and the intervening woodlands are Birch/Poplar Deciduous Forest (FOD3-2). The floral and faunal communities associated with the swamp features and adjacent upland forest consist of relatively common species with no known sensitivities to environmental disturbance. The nearest swamp areas do not appear to function as Significant Wildlife Habitat in any way. These broad observations are consistent with the findings of the earlier EIS of the lands to the west of the municipal drain (see Hensel, 2009) in which these wetlands were subject to full and direct assessment.

The nearby units of the PSW are not hydrologically down-gradient of the Long Point Property, and there are no discernable hydrological inputs to the PSW units that originate within or are dependent on the Property. In the event that there were any east-to-west hydrological connectivity, the substantially recessed municipal drain that traverses the western perimeter of the Property would effectively function to intercept and disrupt any such connectivity. Based on available information, there is no evidence of any other meaningful functional connectivity (e.g. wildlife corridors) between the Property and the PSW.

Given the relatively non-sensitive nature of the nearby wetlands in question and the absence of functional connectivity, there is no expectation of any measurable effects on the PSW for any development that is proposed for the portion of the Property within 120 m of the PSW (i.e., Lots 9-13 and Block 25).

### 5.2.2 On-Site

Within the confines of the Property, there are several ephemeral pools that exhibit wetland characteristics (hydric soils, hydrophilic plants) (see Section 4.2.3 and Figure 4). These features are each <0.02 ha and are characterized as follows:

- elevated water table appears to be a primary hydrological input,
- standing water is present in the early spring, but they dry out by late spring or early summer,
- they do not contribute to flow in any nearby watercourses,
- they appear to serve primarily a recharge function,

- they exhibit a limited variety of hydrophilic plant species, none of which are SOCC,
- they do not function as meaningful amphibian breeding habitat, and
- they do not support other faunal communities with any wetland habitat preference.

At the most proximate point, the small pools are approximately 75 to 150 m away from the perimeter of the nearest PSW unit, which is close enough for possible consideration for inclusion in the PSW complex. In general, wetlands considered for inclusion in a PSW complex are usually more than 2 ha in size, but smaller features may also be considered if they provide important ecological function and benefit. In the case of the few small features within the Long Point Property, direct monitoring has not provided any indication of important ecological function. In addition, the presence of the municipal drain contributes to functional isolation of the small pools within the Long Point Property from the PSW units to the west of the Property. In consideration of this isolation and the lack of important ecological function, the small pools within the Property are not considered to warrant inclusion as part of the nearby PSW complex, and are addressed accordingly in this EIS.

Implementation of the current draft plan (Appendix A) would result in loss or impairment of the ephemeral pools and the drainage swale. The anticipated fill and grading requirements associated with the current plan for development of the Property preclude any reasonable likelihood of retention of these features in their current form.

The loss or impairment of the small pool and swale features within the Property is not expected to result in a meaningful loss of ecological function in the local natural heritage system. Any loss would result in a very small reduction (<0.1 ha) of total wetland cover in the Long Point area, where there is a substantial presence of wetlands. In terms of hydrology, loss of the small features within the Property would not affect any surface water features. There may be some very small loss of groundwater recharge function, depending on various aspects of development (e.g. overall presence and location of impermeable surfaces, SWM planning, grading).

## 5.3 Aquatic Features

Aquatic features associated with the Property include the two watercourses that flow along or in close proximity to the periphery of the Property (see Figure 4). The available information suggests that the municipal drain at the west end of the Property does not function as direct fish habitat, while Watercourse 1 supports a fish community that is warm-water or cool-water. Both watercourses discharge to Georgian Bay and may have minor localized influence on aquatic communities at or in immediate proximity to the point of discharge.

Typically, the development of residential Property entails some modification of the existing ground cover and the installation of buildings and supporting infrastructure

(access roads, parking areas, servicing). Alteration of existing grade is also a common aspect of development. Modification of ground surface or grade, particularly the removal of existing vegetation cover, can affect hydrological processes and result in changes in the quantity or quality of drainage flowing through a site. The most likely implications in terms of water quantity would be an increase in volume and rate of runoff owing to a decrease in permeability following installation of built surfaces. In terms of water quality, the typical effects of site alteration are increases in water temperature and increases in certain contaminants (e.g. total suspended solids, road salts, fertilizers, pesticides).

The likelihood and potential significance of any effects of development on water quantity and quality is dependent in part on a few key factors, including:

- the spatial expanse of the development footprint,
- the relative size of the aquatic feature in question and its catchment area, and
- the quality of water under existing conditions.

In general, the risk of negative effects is proportional to the area developed and inversely proportional to the stream flow and/or watershed area. As discussed in Section 3.3, the area of the Long Point Property represents a small percentage of the drainage basins of the watercourses in question, and the role of the Property in the hydrological balance of the watercourses is minor. In the case of Watercourse 1, the Property is down-gradient of the watercourse and there is no apparent direct hydrological connectivity with the Property. Given these circumstances, the risk of adverse effects on Watercourse 1 related to landscape changes within the Property is inherently very limited. For the municipal drain, the south-to-north hydrological gradient would not be generally conducive to conveyance of runoff from the developed portion of the Property toward the drain. However, there may still be some minor direct connectivity between the area of development and the watercourse. It is possible that development within the Property could result in some minor increase in surface runoff transport to the drain. It is not anticipated that any such change would be significant, nor would it adversely affect the quality of water which at present consists mainly of stormwater runoff.

Water quality may also be adversely affected by the removal of vegetation in immediate proximity to any water-body. A loss of vegetation adjacent to a watercourse can result in increases in water temperature as result of a loss of shading, and can lead to increased loading of contaminants (e.g. suspended solids) due to a loss of the filtering function of stream-side vegetation. The likelihood and potential significance of such effects is dependent in part on the nature of the watercourse, and also the spatial expanse and nature of vegetation that is removed. The municipal drain is an intermittent warm-water watercourse in an open channel passing through a clearing that is devoid of riparian cover. Under these circumstances, the removal of vegetation within the Property is not likely to have any adverse effect on water quality in this watercourse. In addition, the Draft Plan (Appendix A) retains the portion of the Property immediately adjacent to the drain (i.e., Block 25) as undeveloped, further reducing the likelihood of effects on water

quality in the drain. For Watercourse 1, there is about 40 m of separation between the Property and the stream channel at the nearest point, and the stream is not down-gradient of the Property. For these reasons, removal of vegetation cover within the Property is not expected to have the potential to cause any adverse effects on water quality in this watercourse.

Overall, there is some possibility that development of the Long Point Road Property could affect the quantity and quality of water flowing in the municipal drain, but there is no expectation such effects would be significant. The ecological implications of any such changes are very low for the municipal drain, given the nature of flow (intermittent and warm-water) and the absence of direct fish habitat function. For Watercourse 1, the presence of a warm/cool-water fish community increases the implications of any effects on stream flow, but this fish community is not considered to be highly sensitive to changes in water quality. More importantly, there is no expectation of such effects on Watercourse 1 due to the spatial separation and a lack of direct hydrological connectivity with the Property. For both watercourses, the implications of any changes in water quality or quantity are not expected be at all meaningful at the point of their discharge to Georgian Bay.

## 5.4 Significant Woodlands

The Provincial Policy Statement (PPS) defines significant woodland as "an area which is ecologically important in terms of features such as species composition, age of trees and stand history; functionally important due to its contribution to the broader landscape because of its location, size or due to the amount of forest cover in the planning area; or economically important due to site quality, species composition, or past management history". Regional assessments are undertaken by various agencies using criteria derived from this general definition to identify woodland areas for initial designation as "significant". The Natural Heritage Reference Manual (MNR, 2010) provides detailed recommendations for criteria and standards to be used in the assessment of woodland significance.

As discussed in Section 4.2, about 90% (~2 ha) of the Property is currently occupied by deciduous forest cover representing three specific community types. The entirety of this forested area has been designated by Grey County as *Significant Woodland*. The County's assessment of woodland significance is based on a desktop review using data provided by the MNRF. The primary criterion for designation of woodland significance is size, and a woodland must be ≥ 40 ha outside of settlement areas, or ≥ 4 ha within settlement areas, to be deemed significant. Failing the size criterion, a woodland may also be significant if it meets any two of the following three criteria:

1. the woodland is within 30 m of another significant woodland,
2. the woodland overlaps the boundaries of a PSW or ANSI, or
3. the woodland encompasses "Interior" habitat of ≥ 8 ha, with a 100-m interior buffer on all sides.

According to the Grey County OP, the main criteria used in the assessment are size and proximity to special features (PSW, ANSI). It is acknowledge that the assessment in the OP is not based on ground-level surveillance, and any site-specific consideration of woodland significance is best served by more detailed ground-level assessment.

The current assessment of potential impacts on the woodlands found within and immediately adjacent to the Long Point Property is conducted in consideration of several of the core functional categories identified in the MNRF's Natural Heritage Reference Manual. These categories overlap with the stated criteria for designation of "Significance" in the PPS and the County OP. This includes woodland size, forest cover characteristics, the presence of SOCC, ecological functions and linkages, and water protection functions.

### 5.4.1 Woodland Size

For the purpose of this EIS, it is not possible to make firm determinations of the implications of any development-related woodland loss in regard to size. Only general statements of the magnitude of loss can be made.

The ~2 ha of forest cover within the Property is part of a larger more-or-less continuous block of Significant Woodland bordered by the shoreline of Georgian Bay, Hwy 26 and Long Point Road. The larger block measures about 24 ha in area. If the entirety of forest cover within the Long Point Property were cleared, this would result in a loss of about 8-9% of the larger Significant Woodlands area that envelopes the Property. With that loss, the larger block would still be considered "Significant" based on size-related criteria stated in the OP (i.e., 4 ha or greater in settlement areas). According to the Grey County Natural Heritage Systems Study (NRSI, 2017), Grey County has a high proportion of natural cover (44.6%), although the percent cover and size distribution of areas of natural cover is substantially lower along shoreline sections than in the central portions of the County. Examination of MNRF woodland mapping indicates that forest cover in the area north of Hwy 26 within 1 or 2 km of Long Point Road is in the range of 40 to 50%.

In absence of a specified target for total cover in the county or for more localized areas, the implications of the loss of about 1.4 ha of forest cover cannot be quantitatively discerned. As a general guiding principle, this EIS adopts the premise that any reduction of total forest cover should be avoided to the extent possible, regardless of any considerations of size-related criteria.

### 5.4.2 Forest Characteristics

The wooded area within the Long Point Property is early to mid-successional forest cover, with a relatively low diversity of tree species in assemblages that are typical of the region. Through most of the Property, the forest communities are not mature and forest

structure is not well-developed. The area of Birch-Poplar Forest (FOD3-2, see Section 4.2) is the only forested area with a meaningful presence of later succession tree species, where forest structure is somewhat developed, and where the diversity of tree species is highest within the Property. This forest type is nonetheless still relatively young and common in the region. A summary of the forest communities within the Property and their basic characteristics is provided in Table 1.

Overall, the available information does not indicate any uncommon or highly valued characteristics of the forest stands within the Property. Loss or impairment of any of the forest cover would not translate to loss of forests with such characteristics.

### 5.4.3 Priority Species

All of the species of plants and animals that have been observed within and around the forest communities at the Long Point Property are relatively common to the region and the Province, and many are typical of forests influenced by some level of human disturbance. These species are not considered to be particularly sensitive or of conservation concern. The available information does not indicate that the presence of Priority Species would be a factor contributing to a designation as *Significant* of the forested areas within and adjacent to the Long Point Property. Loss or impairment of forest cover within the Property would not have meaningful implications in regard to SOCC or SAR. The only exception relates to the presence of Black Ash, recently designated as an SOCC. Development as proposed is not expected to result in loss or harm to specimens of this tree species within the Property.

### 5.4.4 Water Protection

Forest cover generally leads to improved quality of runoff (e.g. reduced erosion and sediment loads, reduced thermal loading), which can have a beneficial effect on down-gradient features. The Long Point Property has direct hydrological connectivity with only one surface water feature, which is the municipal drain that flows along the western perimeter of the Property. The flow within this drain is intermittent event-based flow that is volumetrically dominated by drainage water originating upstream of the Property. Only a minor fraction of the flow in this drain is expected to originate or have any meaningful residence time within the Property. Loss of forest cover within the development envelope is not expected to have any measurable effect on either the quality or quantity of runoff that may enter the municipal drain. Due to the level of dilution that occurs in the downstream receiving waters (i.e., the near-shore waters of Georgian Bay), there is no expectation of measurable effects at the eventual discharge point of the drain.

In terms of groundwater, forest cover can also provide benefits in terms of infiltration rates and the quality of groundwater recharge. The draft revised OP for Grey County identifies a portion of the forested area in the core of the Long Point Property is part of a "significant groundwater recharge area" which is associated with a "highly vulnerable aquifer". The loss of forest cover in this zone could have some minor effect on the quantity and/or quality of water that infiltrates within the Property. The implications of

any such effects are not expected to interfere with groundwater recharge to the extent that there would be measurable adverse effects on the aquifer or on any use thereof.

### 5.4.5 Habitat and Linkage Function

Habitat and linkage functions are evaluated on the basis of the characteristics of the forest communities within the Property, the nature of natural features in the surrounding landscape, and also the types of fauna present within and around the Property.

The dimensions of the wooded area within the Long Point Property are such that it provides effectively no forest cover that meets the technical definition of forest interior (i.e., >100 m from forest edge). The faunal community that has been observed at the Property is not a forest interior community. In considering the principles and specific criteria developed by the MNRF, the Property does not support SWH function, with the possible exception of a limited area where young specimens of Black Ash (an SOCC) are found (see Section 4.9).

Significant natural heritage features in the area around the Property include the remaining expanse of the larger Significant Woodland block (bounded by Hwy 26 and Long Point Road) and also portions of the Silver Creek PSW (refer to Figure 2). The woodlands within the Long Point Property are located on the eastern periphery of the larger woodland block and provide no apparent linkage between any significant natural features outside of the Property boundary. The Grey County Natural Heritage Systems Study (NRSI, 2017) reports two indicators of a relative absence of linkage and connectivity in the area of the Property; 1) the nearest identified Core Areas and Linkage Corridors are at least 5 km from the Property, and2) the Landscape Connectivity in the area surrounding the Property, as determined following the method of Bowman and Cordes (2015), is rated as "low".

The woodlands within the Property do provide some continuity of local forest cover. The Birch-Poplar forest cover at the western end of the Property extends the habitat function of similar forests to the immediate west of the municipal drain. Most of the forest cover within the Property also connects small areas of forest cover within the adjacent properties to the north and south, which are expected to provide habitat for the local faunal community. Available information indicates that this community is comprised of species that are regionally abundant and common and not area-sensitive. Any ecological continuity provided by the forest cover within the Property likely relates to non-critical habitat functions for a limited number of common wildlife species.

To the north and south of the Property, adjacent lands exhibit significant patches of modified residential landscape. These lands are also bordered in part by the significant road corridor of Hwy 26 to the south, and the highly altered landscape associated with the Craigleith Wastewater Treatment Plant to the north. While the adjacent lands do encompass some natural forest cover, the extent to which they support physical and functional continuity of woodlands within the Long Point Property is quite limited.

To the east of the Long Point Property, woodlands and wetlands are present on the opposite side of Long Point Road, identified as part of the Town of Collingwood Natural Heritage System (NHS). Immediately opposite to the Long Point Property, there are residential lots bordering the east side of the road. The presence of these lots creates separation in the range of 50 to >100 m, which in turn is a significant barrier to ecological connectivity between the Property and the forest areas and other NHS elements to the east of Long Point Road.

Overall, the forested areas within the Property likely provide some ecological linkage within the local landscape, but there is no evidence to suggest that they provide linkage or other habitat functions that are important to sustaining local wildlife populations. The loss or impairment of forest that may disrupt this ecological linkage would have limited implications to the local faunal communities or to local ecological connectivity.

### 5.4.6 Woodlands Summary

The current Draft Plan includes a total of about 0.55 ha of Open Space (Block 25) where there is no current expectation of removal of forest cover. Within the access road and 22 Lots the majority, if not all, of existing forest cover would likely be removed. In total, the estimated loss of forest cover associated with the current Draft Plan would be in order of 1.4. ha. The woodland loss would be confined to the Poplar (FOD8-1) and Ash (FOD7-2) Deciduous Forest communities. The Site Plan effectively retains the existing Lowland (FOD7) and Birch-Poplar (FOD3-2) forest communities within the Property.

The total extent of forest removal within the lots would depend in part on building envelope size and configuration. With some level of retention of existing forest cover within the lots (e.g.. within the rear yard setback), the loss of forest cover could be reduced. However, grading and drainage requirements likely preclude the retention of existing forest cover to any meaningful extent.

The deciduous forest communities within the Property are expected to serve and/or support various ecological functions, but available information indicates that those functions are neither significant nor sensitive. This inherently limits the implications of any possible loss or impairment of these communities as a result of proposed development. In strict consideration of the ecological features and functions ascribed to woodlands within the Property, any loss or impairment of these woodlands would not be considered significant. The possible exception is the Lowland Forest (FOD7) where a limited number of young specimens of Black Ash (an SOCC), are present. Proposed development of the Property does not result in direct intrusion into this forest community type, and there is no expectation of loss or impairment of Black Ash specimens.

In consideration of size alone, there is no defined basis to determine whether or not the reduction of a ~24 ha woodland block by about 1.4 ha would have meaningful impact on the function of the larger block. With additional consideration of the relative location of

the Long Point Property (i.e., on the periphery of the larger woodland block), and the nature and function of the woodlands within the Property, loss of these woodlands is not expected to adversely affect the overall integrity and function of Significant Woodlands surrounding the Property.

## 5.5 Other Features

Other than woodlands, the only other ecological communities present are small patches of cultural meadow (about 0.2 ha in total). The existing vegetation in these areas consists of common species, largely typical of disturbed sites and including many non-native species and also numerous invasive species. The very small size of the combined cultural meadow area also inherently limits the possible implications of any loss of that habitat. The surveillance of the meadow habitat did not identify any unique or sensitive biological functions or species associations.

Based on the current Site Plan, the cultural meadow area in the eastern half of the Property is located within proposed residential Lots 4, 5 and 6 and also within the cul-de-sac, and would thus be subject to removal. The ecological function of this community type within the Property is extremely limited, and there is no expectation of any unacceptable impacts if any or all of the cultural meadow habitat is lost or impaired.

## 5.6 Cumulative Impacts

The assessment of potential cumulative impacts is based on two considerations; 1) the *collective* implications of various aspects of the proposed development, and 2) the possible interaction with factors external to the development. A qualitative analysis has been completed to identify instances where combinations of factors (internal and external) may compound or exacerbate impacts on a particular element of the Natural Heritage System (NHS), or on the NHS as a whole.

The primary impact associated with the Long Point Property is the loss of ~1.4 ha of woodland. The affected woodlands have not been found to support populations of Priority Species or SWH functions. The species of plants and animal within and near the Property are not considered to be sensitive to disturbance or otherwise particularly susceptible to indirect effects that could occur as a result of development. The displacement of woodlands within the Property, and the subsequent presence of residential lots, are not expected to have cumulative effects on the functions of woodlands that will remain within the Property, or the woodlands and wetlands in proximity to the Property.

In regard to possible contribution to additive effects in the area surrounding the Long Point Property, the proposed development could have implications in regard to increased risk of road mortality of wildlife. The presence of 22 new lots would result in an increase in local traffic volume, and an increase in the likelihood of road kill along part of Long Point Road. It is not possible to quantify the risk, but it is not anticipated that the number

of affected wildlife would be high, or that a meaningful number of individuals of Priority Species would be involved.

With the exception of lands to the west of the municipal drain, the properties adjacent to the Long Point Property have been subject to some degree of anthropogenic landscape alteration. This includes residential development, road corridors, a wastewater treatment plant, and engineered ditch flow. These existing anthropogenic modifications are substantial factors in the current state of the local NHS, and its susceptibility to possible impacts. In general, the local NHS and its functions are already reflective of fairly pervasive anthropogenic influence. The proposed development within the Long Point Property will result in an increase in residential land-use in the area. However, based on information considered in this EIS, it will not result in any meaningful loss of linkage or connectivity within the local NHS, and forest cover in the Long Point area will remain in the range of 40-50%. Overall, the proposed development of the Long Point Property is not expected to cause any effects that would contribute significantly to any cumulative degradation of the local or regional NHS, or NHS function.

## 5.7 Natural Heritage System

A natural heritage system (NHS) is a delineated network of natural features that is intended to allow for a connected natural landscape that will support biodiversity and ecological functionality. The NHS incorporates a variety of natural features, including wetlands, significant woodlands, SWH, fish habitat, etc.. Ecological linkage between these features is a critical element of the NHS that enables ecosystem functionality and viability.

In Grey County's Natural Heritage System Study (NRSI, 2017), the Long Point Property has been included in the NHS as a Significant Natural Feature. This designation is based largely on the fact that the Property is occupied almost entirely by Significant Woodlands. The proposed development will result in loss of ~1.4 ha of the Significant Woodland cover within the Property. However, this loss of woodland is not expected to adversely affect local wildlife populations, or to have any impact on nearby wetlands that are part of the NHS. The loss of woodlands is also not expected to have a meaningful impact on ecological connectivity in the area of the Property. Overall, the development is not expected to have significant adverse effects on the functional integrity of the NHS.

# 6.0 CONCLUSIONS AND RECOMMENDATIONS

## 6.1 Summary of Existing Conditions

The Long Point Property is occupied primarily by a few types of deciduous forest communities that are relatively young and comprised of plant species which are provincially and regionally common. Numerous plant species found within the Property are non-native and typical of disturbed sites, including at least 20 species that can be considered invasive. Black Ash is the only plant species of conservation concern (SOCC) that has been observed within or near the Property. The associated faunal communities also consist of common species from relatively secure populations, and the Property does not function in any capacity as significant wildlife habitat (SWH) except as habitat for a small number of young specimens of Black Ash. Overall, the terrestrial ecological functions supported within the Property are neither significant nor sensitive, nor are they vital to overall ecosystem integrity on a local or regional scale. In relative terms, the 0.35 ha of Birch-Poplar forest community at the west end of the Property (see Figure 5) has the highest potential for ecological benefits of the four forest communities within the Property.

There are two watercourses that pass through or near the Property. These watercourses serve basic hydrological and ecological functions to varying degrees. The municipal drain that runs along the western perimeter of the Property is a man-made stormwater conveyance feature that exhibits intermittent, event-based flow. This watercourse is lacking in natural characteristics and serves minimal ecological function, and does not appear to function as direct fish habitat. Watercourse #1 flows along the west side of Long Point Road and crosses the road by culvert about 40 m south of the Property. This stream exhibits persistent flow that supports populations of fish typical of warm-water or cool-water communities.

The Property also encompasses several very small ephemeral pools, located within the western half of the Property. Examination of these features indicates that their environmental functions are very limited and not likely meaningful in regard to local ecosystem function and integrity.

## 6.2 Summary of Potential Impacts

A summary of the potential impacts associated with the proposed development of the Long Point Property is provided in Table 6, reflecting the analysis presented in Section 5. The likelihood and significance of each category of potential impact are relatively ranked as either low, medium or high. The likelihood and significance of any possible impacts of future development are dependent on the natural heritage characteristics of the Property and also the specific aspects of the proposed development. For each environmental feature of interest, the overall risk is a function of both *likelihood* and *significance*.

Priority Species

Based on information obtained and reviewed in this EIS, there is a very low likelihood of occurrence of SAR or SOCC within the Property in meaningful number, for meaningful duration, or for critical aspects of their life cycle. The only occurrence of a Priority Species that warrants consideration is the presence of a limited number of young specimens of Black Ash (an SOCC) in a confined area in the west half of the Property. The proposed development does not intrude on the forest community where the Black Ash specimens are found, and there is no expectation of loss or impairment of this SOCC.

In absence of any likelihood of meaningful presence of other SOCC or SAR within the Property, measurable impacts resulting from possible development activity are considered to be very unlikely, and would be very limited in terms of frequency and numbers affected. Any such impacts would not be meaningful from a population perspective. The overall risk of the proposed development in regard to Priority Species is deemed to be low.

Watercourses

In absence of any meaningful hydrological connectivity with the Long Point Property, there is no expectation of any adverse effects of development on Watercourse #1. There is a very limited potential for impacts on water quality in the municipal drain at the west end of the Property. The implications of any changes in water quality are inherently limited owing to the fact that the drain is an intermittent stormwater conveyance feature and does not serve as fish habitat or otherwise exhibit much ecological function. The overall risk of the proposed development in regard to watercourses is deemed to be low.

Wetlands

As noted in Section 5.2, there is an absence of hydrological connectivity between the Property and the wetland features to the west of the Property that are part of the Silver Creek PSW. In addition, there is no meaningful ecological connectivity between the Property and the PSW. Accordingly, residential development as proposed for the Long Point Property poses no meaningful risk of impacts on the PSW or its functions.

The loss or impairment of the small ephemeral pools within the Property is not expected to equate to meaningful loss of ecological function in the local natural heritage system. The overall risk of the proposed development in regard to these on-site features is deemed to be low.

The development of 22 residential lots within the confines of the Long Point Property does not create any obvious demand for further development that in turn would negatively affect nearby wetlands or their function.

Significant Woodlands

The woodlands within the Property are neither significant nor sensitive in terms of their various ecological characteristics and functions. This inherently limits the implications of any possible loss or impairment of these communities as a result of proposed development. In strict consideration of the ecological features and functions ascribed to woodlands within the Property, any loss or impairment of these woodlands would not be considered significant in context of the integrity and function of the ecosystem in the Long Point area. The loss of forest cover associated with the proposed development would not lead to a significant reduction in the forest resource or interior forest habitat in the Long Point area.

## 6.3 Mitigation Recommendations

Regardless of the low level of risk, there should be efforts to further mitigate the risk of any impacts potentially associated with proposed development of the Property. Recommendations are provided herein to avoid, limit or otherwise mitigate the potential impacts that have been identified.

### 6.3.1 Priority Species

Site monitoring has revealed the presence of three SOCC within or in close proximity to the Property; 1) the Eastern Wood-pewee, 2) the Western Chorus Frog, and Black Ash.

To reduce the risk of impacts on the Eastern Wood-pewee and any other breeding birds, which would be subject to prohibitions of the Migratory Bird Convention Act, any clearing of forested areas should be timed to avoid the active bird nesting period (i.e., from May to August).

To reduce the risk of harm to Western Chorus Frogs, removal or filling of ephemeral pools should occur outside the time when frogs are most likely to be present at these features (April to July), if present at all.

The EIS has revealed the presence of bats in the area of the Property, which could include SAR (e.g. Little Brown Myotis). The Property is effectively devoid of features that would support maternal roosting or hibernation of the bat species likely to be encountered in the region. To reduce the risk of any harm to bat specimens that could possibly be found in association with trees within the Property, clearance of trees should be conducted outside the period of 01 May to 30 September.

In regard to Black Ash, barriers should be installed for the construction phase to prevent inadvertent travel into the forest community where this species is found. Heavy duty silt fencing installed for erosion and sediment control (ESC) would generally serve this purpose.

### 6.3.2 Watercourses

The adaptation of standard mitigation measures is expected to effectively eliminate the already minor risk of impacts on the watercourses in question.

To minimize the potential for any effects of development on local watercourses, and also nearby wetlands, plans for grading and stormwater management should seek to maintain existing drainage patterns to the extent feasible.

In addition to drainage management, effective set-backs should be established to minimize the potential for any effects on water quality and ecological function. For Watercourse #1, adoption of a 30-m setback appropriate for coldwater streams would be more than adequate in this case. Limited instances of development within 30 m of the stream (but no closer than 15 m) may be acceptable, particularly if the form of that development excludes impermeable surfaces. For the municipal drain, a minimum set-back of 10 m is likely to be sufficient given the relatively limited ecological function of this watercourse, particularly an absence of a fish community.

The main element of risk to watercourses is associated with possible sediment transport during construction. During any eventual construction or landscape alteration, an Erosion and Sediment Control (ESC) plan should be developed and implemented in accordance with established best practices. At a minimum, this would include:

- installation of silt fencing between areas of disturbed ground and each stream,
- avoidance of work during wet conditions,
- minimizing the passage of vehicles over areas of exposed soil,
- placement of stockpiled soil or fill in designated areas as far away from streams as practical, and
- minimizing the time between initial exposure of soil and the final construction or restoration of a given area. Restoration should occur as soon as possible.

### 6.3.3 Wetlands

Similar to woodlands, the loss or impairment of any wetlands is generally undesirable owing to the relatively low total area of wetlands in Southern Ontario resulting from past cumulative losses. The development of the Long Point Property does not present any meaningful risk of loss or impairment of identified wetland features in proximity to the Property. As a precautionary measure, site drainage and stormwater management plans should be developed to maintain existing patterns of surface water and groundwater movement, to the extent feasible.

### 6.3.4 Woodlands

As noted in Section 5.4, the loss or impairment of woodlands within the Long Point Property is not expected to result in meaningful loss of ecological function at the local or regional level. Regardless of functional implications, the loss or impairment of any woodlands should be minimized simply owing to the fact that there is a general absence of woodlands in the region and the Province, and any further reductions exacerbate this situation. Accordingly, the Long Point Property should be developed with considerations to minimize loss of tree cover within the Property. In this effort, it is recommended that priority be assigned as follows:

- HIGH priority should be given to the Birch/Poplar woodlands (FOD3-2) at the west end of the Long Point Property (within Block 25), and the lowland forest (FOD7) (within Block 25)
- Most of the Aspen/Poplar forest (FOD8-1) throughout the Property (some or all of Lots 4 to 22) should be given MEDIUM priority.
- The young ash forest (FOD7-2) occupying much of the front half of the Property (part or all of Lots 1 to 4, and 15 to 19) should be afforded a relatively LOW priority for retention or replacement of existing forest cover.

Specific measures recommended for consideration are as follows:

- optimize the size or configuration of development envelopes to allow maximum tree retention on lot perimeters, if possible given engineering requirements,
- establishment of requirements for Tree Preservation Plans (TPP) for all lots within the development, with a focus on planting requirements where retention of existing trees has low feasibility, and
- development of an edge planting plan for the exposed perimeter of retained wooded areas.

Areas of retained or replaced woodlands should be planned and managed so as to maintain natural characteristics to the extent possible. This is most important in those locations where forest structure has developed to some functional extent (i.e., the Birch/Poplar forest).

## 6.4 Enhancement Opportunities

The control or removal of invasive plant species would be beneficial, with emphasis on woody species (European Buckthorn, Oriental Bittersweet, non-native Honeysuckle).

A contingency plan should be developed to address the pending implications of Emerald Ash Borer (EAB). Ash species are a significant component of the forest cover that occupies much of the Long Point Property, and it is anticipated that EAB will lead to the eventual loss of most or all of these trees. A proactive plan to minimize the implications of the decline of ash and ensure long-term presence of tree cover is recommended. This should be a major consideration in any TPP that might be developed for the Property.

## 6.5 Monitoring Recommendations

The levels of risk to environmental features of concern at or near the Long Point Property have been judged to be relatively low. The nature of most of the specific effects that have some potential to occur is such that there are no endpoints for which monitoring would be beneficial in an adaptive management framework. The only identifiable instance where monitoring would contribute to the avoidance of any adverse effects pertains to ESC measures that should be implemented to protect watercourses. Silt fences and other measures should be regularly inspected to ensure that they remain effectively functional. Otherwise, there are no recommendations in regard to environmental monitoring either during or following construction.

## 6.6 Implementation and Management Plan

On the basis of the findings of this EIS, various specific measures are recommended for implementation through the advancement of the proposed development plan. These measures (see Section 6.3) are intended to mitigate specific and general risks of impacts to natural features of interest and the overall functional integrity of the natural heritage system (NHS). The following summarizes relevant recommendations in the general order in which they would be implemented.

- Prepare an ESC plan (as outlined in Section 6.3.2) in advance of any construction activities. Sediment controls should remain in place until construction and site restoration are complete.
- Develop a spill-prevention plan in advance of any construction activities for the construction period.
- Prepare a grading plan and SWM plan that take into consideration feasible measures to avoid alteration of water table dynamics in and around the area of Lowland Forest (FOD7) where Black Ash are present.
- Prepare and implement a construction timetable in which the timing of removal of forest cover is restricted to avoid the periods of bird nesting (01 May to 31 August), bat roosting (01 May to 30 September), and where removal or filling of ephemeral pools is restricted to avoid amphibian breeding (01 April to 30 June).
- Prepare and implement a TPP which retains and protects existing forest cover to the extent practical during the construction period, and which establishes post-construction planting objectives for the initial stages of development (clearing,

grading, installation of access and service infrastructure) and for the eventual development of individual lots.

In addition to the measures above, set-back recommendations for the protection of various features are as follows:

- As noted in Section 6.3.2, adoption of a 30-m setback appropriate for coldwater streams would be more than adequate in the case of Watercourse #1. Given that the watercourse is more than 30-m from the Property at the most proximate point, there is no need for explicit consideration of a set-back for this feature.
- For the municipal drain, a minimum set-back of 10 m is likely to be sufficient given the relatively limited ecological function of this watercourse, particularly an absence of a fish community.
- Based on the nature of the wetlands located west of the Long Point Property, and an effective absence of hydrological connectivity between these wetlands and the Property, a 30-m setback is deemed to be adequate. The current plan does not call for any site alteration within 30 m of any nearby wetland areas.
- For the woodlands occupying the adjacent lands that are immediately west of the Property, there is nothing to indicate a high degree of connectivity to woodlands within the Property, or that the woodlands are particularly sensitive to disturbance. In consideration of these conditions, and the presence and implications of the municipal drain corridor on the western perimeter of the Property, a minimal set-back is warranted. A set-back of 10-m is suggested.

## 6.7 Policy Interpretation

The Provincial Policy Statement (PPS) serves as the foundation for the various policies contained in the County and Municipal OPs, including those that are intended to protect and maintain the natural environment and its functions. The following summaries address the PPS and OP natural heritage policy elements that are of relevance to the Long Point Property:

Significant Wetlands

No development or site alteration may occur within Significant Wetlands. Development will not be permitted within their adjacent lands (within 120 m) unless it has been demonstrated through an EIS that there will be no negative impacts on the natural features or their ecological functions.

A portion of the proposed development within the Long Point Property occurs within 120 m of the Silver Creek PSW. The EIS has determined that the development will not have any negative impacts on the PSW or its functions.

Significant Woodlands

No development or site alteration may occur within Significant Woodlands or their adjacent lands (within 120 m) unless it has been demonstrated through an EIS that there will be no negative impacts on the natural features or their ecological functions. In addition, fragmentation of significant woodlands is generally discouraged.

The development of the Long Point Property, as currently proposed, will result in the loss of ~1.4 ha of woodland. This EIS concludes that this will not result in significant impacts on Significant Woodlands as a functional component of the NHS that envelopes the Property and surrounding lands.

Fish Habitat

The PPS states that development and site alteration are not permitted in Fish Habitat except in accordance with relevant provincial and federal requirements. No development will be permitted within 30 m of the banks of a stream, river, or lake unless an EIS, or the Conservation Authority, concludes setbacks may be reduced.

Watercourse #1 has been identified as fish habitat, but the municipal drain along the west perimeter of the Property is not fish habitat. Development will not occur within 30 m of Watercourse #1.

Habitat of Threatened/Endangered Species

The PPS states that no development or site alteration will be permitted within the habitat of Threatened or Endangered species except in accordance with provincial and federal requirements. No development or site alteration will be permitted within the adjacent lands (120 m) to these areas unless it has been demonstrated through an EIS that there will be no negative impacts on the natural features or their ecological functions.

There is no current evidence of meaningful presence of Threatened or Endangered Species or their habitat within or in close proximity to the Long Point Property.

Significant Wildlife Habitat

In the PPS, development and site alteration is not permitted within Significant Wildlife Habitat (SWH) and adjacent lands (120 m) unless it has been demonstrated through an EIS that there will be no negative impacts on the natural features or their ecological functions.

The only identified instance of SWH function within or near the Long Point Property is associated with the presence of 10 to 20 (estimate) specimens of Black Ash (an SOCC) in a limited portion of the Property. By MNRF definition, the ELC community where an SOCC is found constitutes the candidate area of SWH. The current draft plan does not

call for incursion into the ELC community in question (Lowland Forest - FOD7) and will not result in the loss and/or harm of Black Ash.

Natural Heritage System (NHS)

The PPS states that diversity and connectivity of natural features in an area, and the long-term ecological function and biodiversity of the NHS, should be maintained, restored or, where possible, improved, recognizing linkages between and among natural heritage features and areas, surface water features and ground water features.

The proposed development of the Long Point Property is not expected to result in any meaningful loss or impairment of ecological or hydrological connectivity, or the overall integrity of the NHS.

Summary

Overall, the proposed development at the Long Point Property meets policy requirements and there is no expectation of any negative impacts on several specific features of interest (wetlands, woodlands, SAR, fish habitat) or the NHS that they comprise.

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# TABLES

**Table 1: Summary of Woodland Characteristics**

| Community Type[1] | Approximate Area (ha) | Typical Canopy Characteristics | | Size (DBH) Distribution[4] | | | |
|---|---|---|---|---|---|---|---|
| | | Average Cover[2] | Composition[3] | <20 cm | 20 to 30 cm | 30 to 40 cm | Summary of Functions[5] |
| Poplar - White Birch Forest (FOD3) | 0.4 | 90% | Aspen=Birch>>Ash | 10% | 75% | 15% | supports common fauna, v. limited presence of area sensitive birds, possible SOCC (Eastern Wood-pewee). No SWH |
| Poplar Deciduous Forest (FOD8-1) | 1.1 | 80% | Aspen>Poplar>>>Green Ash | 20% | 60% | 20% | supports some common fauna, no SOCC, minor hydrological function (recharge) |
| Ash Lowland Forest (FOD7-2) | 0.5 | 60% | Green Ash>>>Aspen>White Ash | > 90% | <10% | 0% | supports some common fauna, no SOCC |
| Mixed Lowland Deciduous Forest (FOD7) | 0.1 | 80% | Ash>Maple>Basswood | 15% | 65% | 20% | supports some common fauna, confirmed presence of SOCC (Black Ash), minor hydrological function (recharge) |

1 - Community type as determined through ELC following Lee et al., 1998. See Figure 5.

2 - estimate of average absolute cover of upper canopy, as per Lee et al. 1998

3 - estimate of relative abundance of tree species present in canopy, as per Lee et al., 1998

4 - estimated percentage of trees within canopy in the noted range of diameter at breast height (DBH)

5 - SOCC = species of conservation concern, SWH = significant wildlife habitat

**Table 2: BBS Point-Count Station Characterisitics and Summary Results**

| Station ID | UTM Coordinates (Centroid)[1] | | Main Habitat/Cover Type |
|---|---|---|---|
| | Easting | Northing | |
| PC-1 | 0556100 | 4930390 | Deciduous Forest |
| PC-2 | 0556225 | 4930400 | Deciduous Forest/ Cultural Meadow |

1 - coordinates obtained using handheld GPS, NAD83 datum. Reported to the nearest 5 m.

**Table 3: Summary of Point-Count Monitoring Results[1]**

| Species | | Station Total | | |
|---|---|---|---|---|
| Common name | Scientific name | PC-1 | PC-2 | Total |
| American Goldfinch | *Carduelis tristis* | 1 (1) | 1 (1) | 2 (2) |
| American Redstart | *Setophaga ruticilla* | 3 (3) | 2 (2) | 5 (5) |
| American Robin | *Turdus migratorius* | 4 (2) | 1 (1) | 5 (3) |
| Black-capped Chickadee | *Poecile atricapillus* | | 1 (1) | 1 (1) |
| Downy Woodpecker | *Picoides pubescens* | | 1 (1) | 1 (1) |
| Great Crested Flycatcher | *Myiarchus crinitus* | 1 (1) | 2 (2) | 3 (3) |
| House Wren | *Troglodytes aedon* | 5 (4) | 2 (2) | 7 (6) |
| Northern Flicker | *Colaptes auratus* | | 2 (2) | 2 (2) |
| Northern Oriole | *Icterus galbula* | 3 (3) | | 3 (3) |
| Red-eyed Vireo | *Vireo olivaceus* | 7 (4) | 3 (3) | 10 (7) |
| Song Sparrow | *Melospiza melodia* | 6 (4) | 2 (2) | 8 (6) |
| Warbling Vireo | *Vireo gilvus* | 1 (1) | | 1 (1) |
| Total Individual Bird Count | | 31 | 17 | 48 |
| Total Species Count | | 9 | 10 | 12 |

1 - summary counts include only those birds occurring within 100m of the centre of the point count station
Bracketed values indicate the number of survey intervals (5 minutes each) with the species present

**Table 4: Summary of Bird Species Observed at the Longpoint Road Property**

| Species | | Breeding Status | | Conservation Status | | | Breeding Habitat Preference[6] |
|---|---|---|---|---|---|---|---|
| Common name | Scientific name | Site[1] | OBBA[2] | SRANK[3] | COSEWIC[4] | COSSARO[5] | |
| American Crow | *Corvus brachyrhynchos* | Possible | Confirmed | S5 | - | - | general |
| American Goldfinch | *Carduelis tristis* | Probable | Probable | S5 | - | - | general |
| American Redstart | *Setophaga ruticilla* | Possible | Probable | S5 | - | - | early succession |
| American Robin | *Turdus migratorius* | Confirmed | Confirmed | S5 | - | - | general |
| Black-capped Chickadee | *Poecile atricapillus* | Confirmed | Confirmed | S5 | - | - | general |
| Blue Jay | *Cyanocitta cristata* | Possible | Confirmed | S5 | - | - | forest |
| Cedar Waxwing | *Bombycilla cedrorum* | Probable | Confirmed | S5 | - | - | general |
| Chipping Sparrow | *Spizella passerina* | Possible | Confirmed | S5 | - | - | general |
| Common Grackle | *Quiscalus quiscula* | Confirmed | Confirmed | S5 | - | - | general |
| Downy Woodpecker | *Picoides pubescens* | Probable | Possible | S5 | - | - | forest |
| Eastern Phoebe | *Sayornis phoebe* | Probable | Confirmed | S5 | - | - | general |
| Eastern Wood-pewee | *Contopus virens* | Possible | Probable | S4 | SC | SC | forest |
| Golden-crowned Kinglet | *Regulus satrapa* | Observed | Possible | S5 | - | - | forest |
| Gray Catbird | *Dumetella carolinensis* | Possible | Probable | S4 | - | - | early succession |
| Great Blue Heron | *Ardea herodias* | Possible | Confirmed | S4 | - | - | wetland |
| Great Crested Flycatcher | *Myiarchus crinitus* | Confirmed | Confirmed | S5 | - | - | forest |
| Hairy Woodpecker | *Picoides villosus* | Possible | Possible | S5 | - | - | forest |
| House Wren | *Troglodytes aedon* | Probable | Confirmed | S5 | - | - | general |
| Mourning Dove | *Zenaida macroura* | Probable | Probable | S5 | - | - | general |
| Northern Cardinal | *Cardinalis cardinalis* | Probable | Probable | S5 | - | - | early succession |
| Northern Flicker | *Colaptes auratus* | Possible | Probable | S4 | - | - | general |
| Northern Oriole | *Icterus galbula* | Probable | Probable | S5 | - | - | general |
| Pileated Woodpecker | *Dryocopus pileatus* | Possible | Possible | S5 | - | - | forest |
| Red-eyed Vireo | *Vireo olivaceus* | Probable | Probable | S5 | - | - | forest |
| Ring-billed Gull | *Larus delawarensis* | Observed | Confirmed | S5 | - | - | wetland |
| Song Sparrow | *Melospiza melodia* | Confirmed | Confirmed | S5 | - | - | general |
| Warbling Vireo | *Vireo gilvus* | Possible | Probable | S5 | - | - | early succession |
| White-breasted Nuthatch | *Sitta carolinensis* | Possible | Possible | S5 | - | - | forest |
| White-throated Sparrow | *Zonotrichia albicollis* | Possible | Possible | S5 | - | - | forest |
| Wild Turkey | *Meleagris gallopavo* | Possible | Possible | S5 | - | - | forest, mixed habitat |
| Yellow-bellied sapsucker | *Sphyrapicus varius* | Confirmed | Probable | S5 | - | - | forest |

1. includes adjacent lands within 50 m of property perimeter
2. the highest breeding status reported in the OBBA for either Square 17NK52 or 17NK53
3. Provincial Rank: S4 - Apparently Secure, S5 - Secure
4. Federal Status: SC - Special Concern
5. Provincial Status: SC - Special Concern
6. based on the Ontario Breeding Bird Atlas (OBBA)

**Table 5: Summary of NHIC Element Occurrences (EO) in Vicinity of the Long Point Property**

| Common Name | Scientific Name | SRank[1] | COSSARO Status2 | COSEWIC Status3 | Last Observation Date |
|---|---|---|---|---|---|
| Whiskered Camouflage Lichen | *Melanelixia subargentifera* | S1/S3 | - | - | 7/27/1976 |
| Stiff Yellow Flax | *Linum medium var. medium* | S3? | - | - | not specified |
| Variegated Meadowhawk | *Sympetrum corruptum* | S3 | - | - | 9/11/1927 |
| Threespine Stickleback | *Gasterosteus aculeatus* | S4 | - | - | 8/1/1999 |
| Snapping Turtle | *Chelydra serpentina* | S3 | SC | SC | 6/29/1994 |
| Blandings Turtle | *Emydoidea blandingii* | S3 | THR | END | 4/23/2008 |

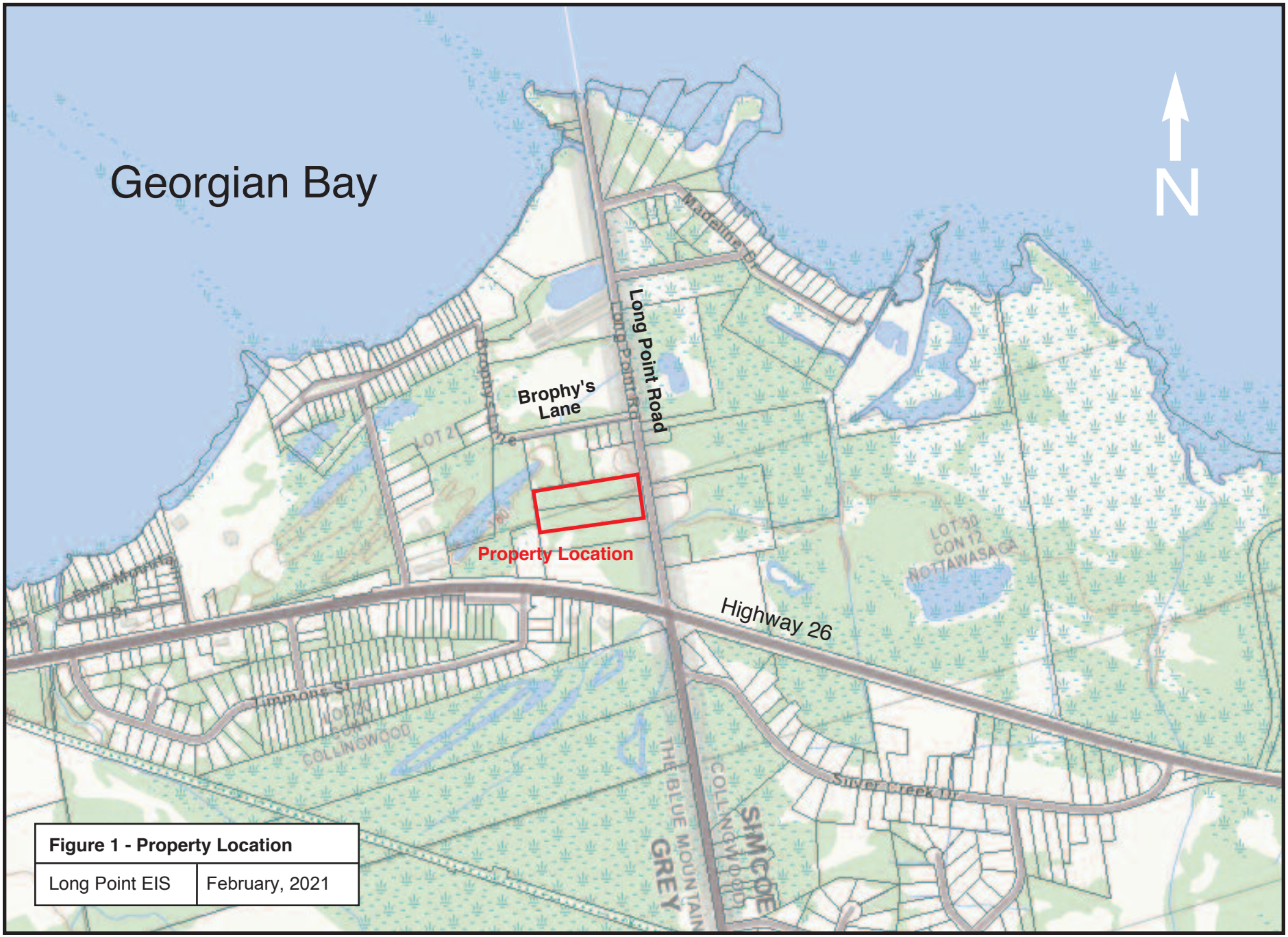
1 - Provincial Rank - S1 = Critically Imperiled, S3 = Vulnerable
2 - Provincial status - SC = Special Concern, THR = Threatened
3 - Federal Status - SC = Special Concern, END = Endangered
EO records obtained for NHIC 1-km squares 17NK5529, 17NK5530, 17NK5629, and 17NK5630

**Table 6: Summary of Potential Impacts Associated with Development**

| Affected Feature | Potential Impact | Risk | | | Limiting and Mitigating Factors[3] |
|---|---|---|---|---|---|
| | | Likelihood | Potential Significance[1] | Overall Risk[2] | |
| Significant Woodlands | Direct loss of woodlands | High | Low | Medium | Forest communities are relatively young and have limited function and value. Account for <10% of larger forest block. Limited mitigation possible through preservation measures (e.g. TPP) |
| | Habitat Loss/Impairment | High | Low | Low | Plant and animal communities are not rare or sensitive. Significant Wildlife Habitat (SWH) function of woodlands is very limited. Partial mitigation possible through construction timing. |
| | Loss/impairment of socio-economic function | Low | Low | Low | Woodlands currently serve no meaningful socio-economic function. |
| | Impaired Hydrological Function | Medium | Low | Low | No meaningful hydrological connectivity between woodlands and surface water features. Very minor groundwater recharge function. Impacts on recharge can be mitigated in part through SWM plan and detailed site design considerations. |
| Wetlands - PSW | Indirect impairment of PSW | Low | Medium | Low | No direct incursions. No meaningful functional connectivity between Property and nearby PSW. Plant and animal species in wetlands are not rare or sensitive. Retained woodland area (Block 25) serves as a protective buffer. |
| Aquatic Habitats | Loss or interference of watercourses | Low | Low | Low | No direct incursions. Limited potential for changes in water quality and quantity in watercourses in question. Risk mitigation through ESC and SWM plans. |
| | Fish Habitat impairment/destruction | Low | Medium | Low | Watercourse #1 does serve as fish habitat. No meaningful connectivity between Property and Watercourse #1. Risk mitigation achievable through ESC and SWM plans. |
| Priority Species (SOCC and SAR) | Direct harm to Priority Species | High | Low | Low | Limited and/or isolated presence of Priority Species within and adjacent to the Property. No loss or harm of Priority Species is anticipated. |
| | Loss or interference of Habitat | Low | Medium | Low | Loss of some woodland habitat is expected, possibly affecting birds and/or bats. Mitigation partly achieved through construction timing. |
| Significant Wildlife Habitat (SWH) | Direct loss or impairment | High | Low | Low | Very limited SWH presence within and adjacent to the Property. Areas of SWH are encompassed in designated Open Space (Block 25) and not subject to development. |

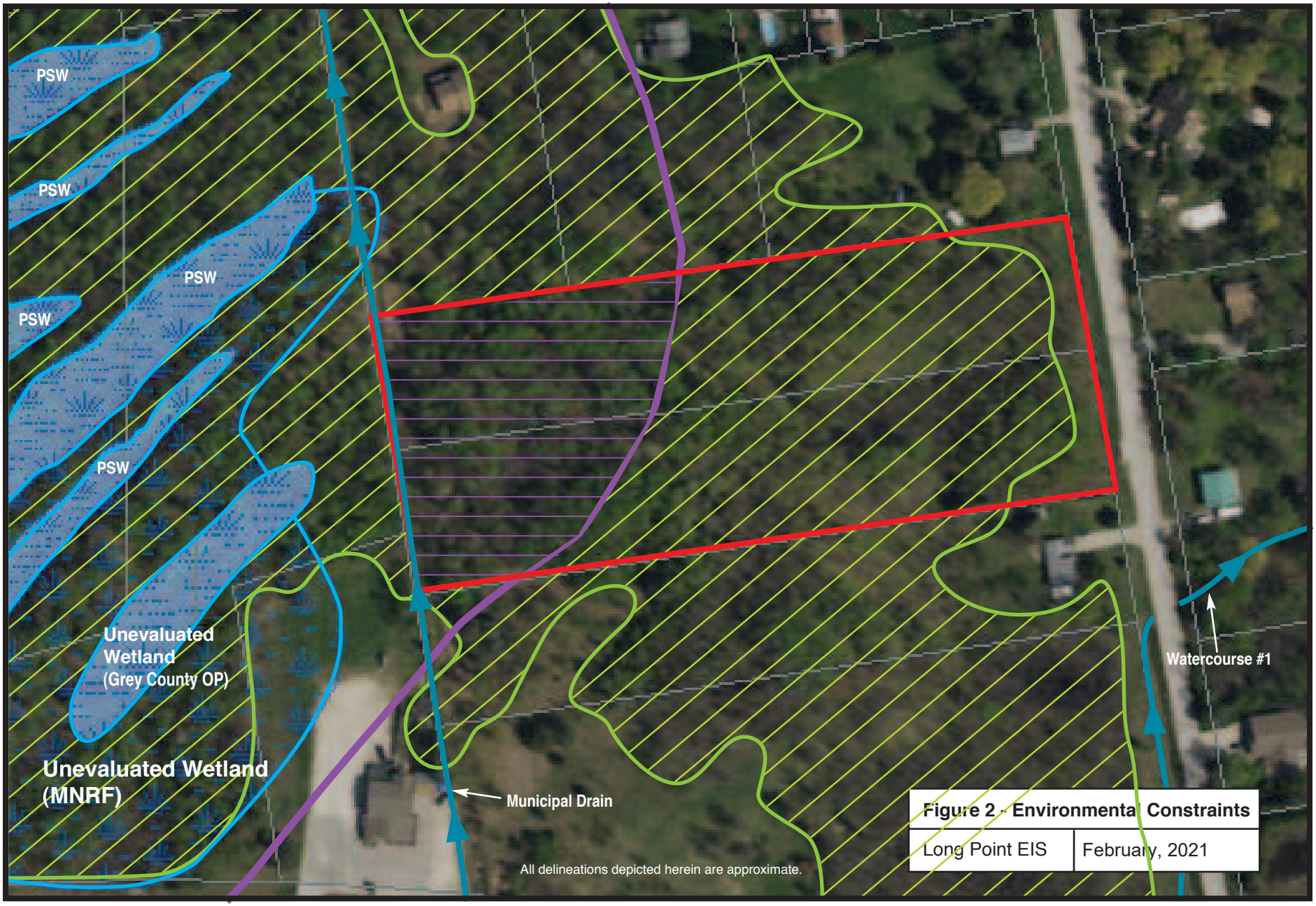
# FIGURES

# Figure 1: Property Location

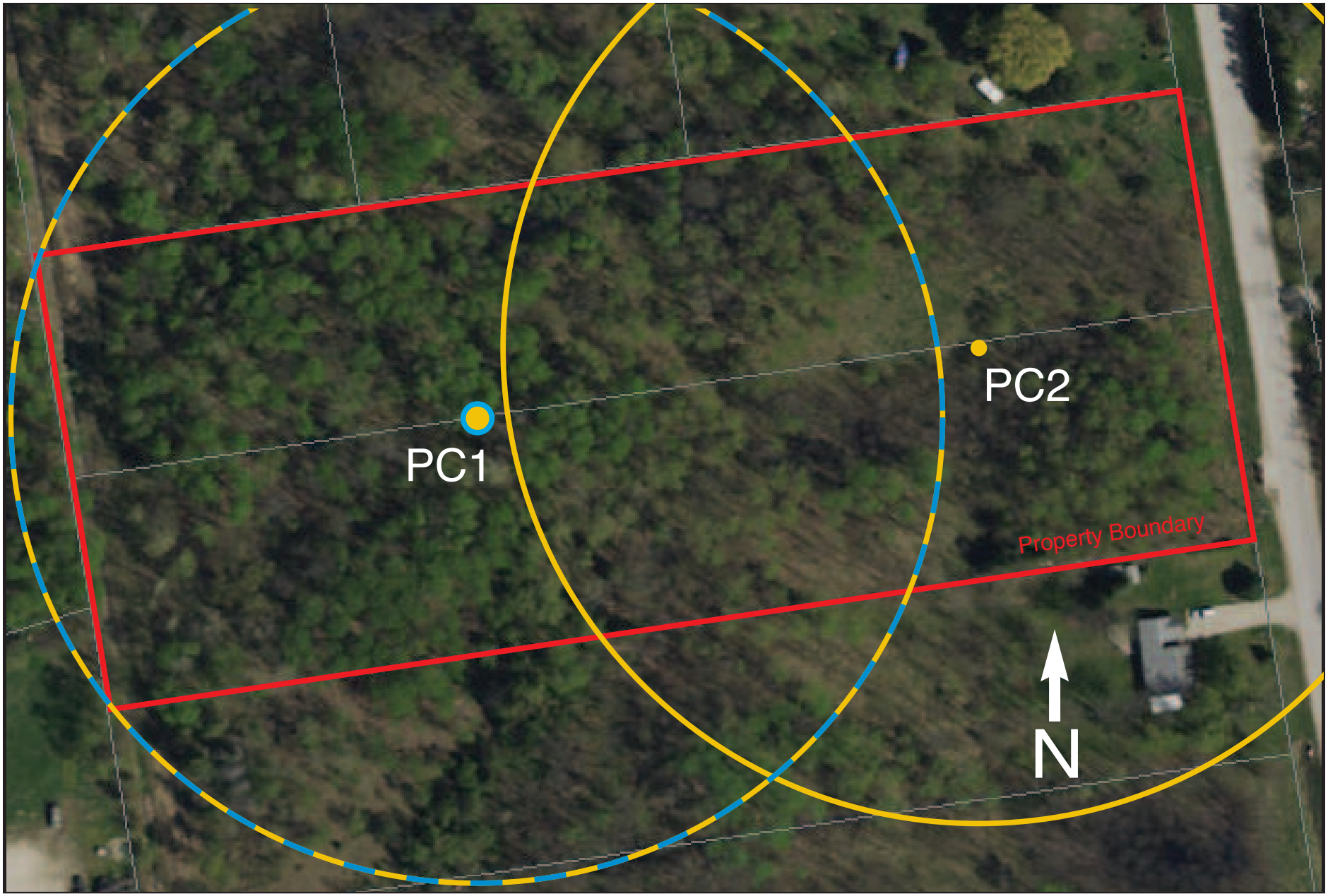



| Figure 1 - Property Location | |
|---|---|
| Long Point EIS | February, 2021 |

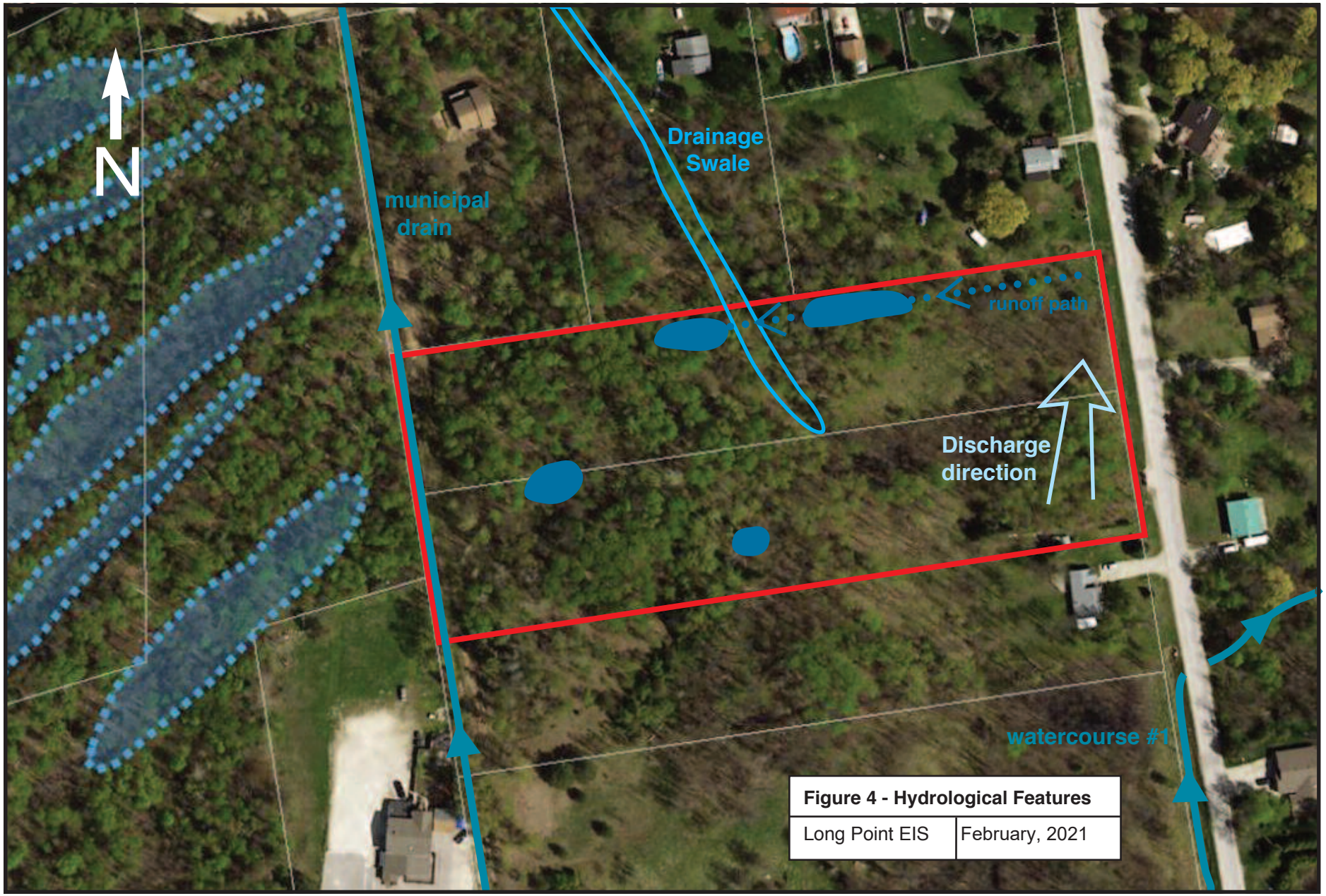
# Figure 2: Environmental Constraints



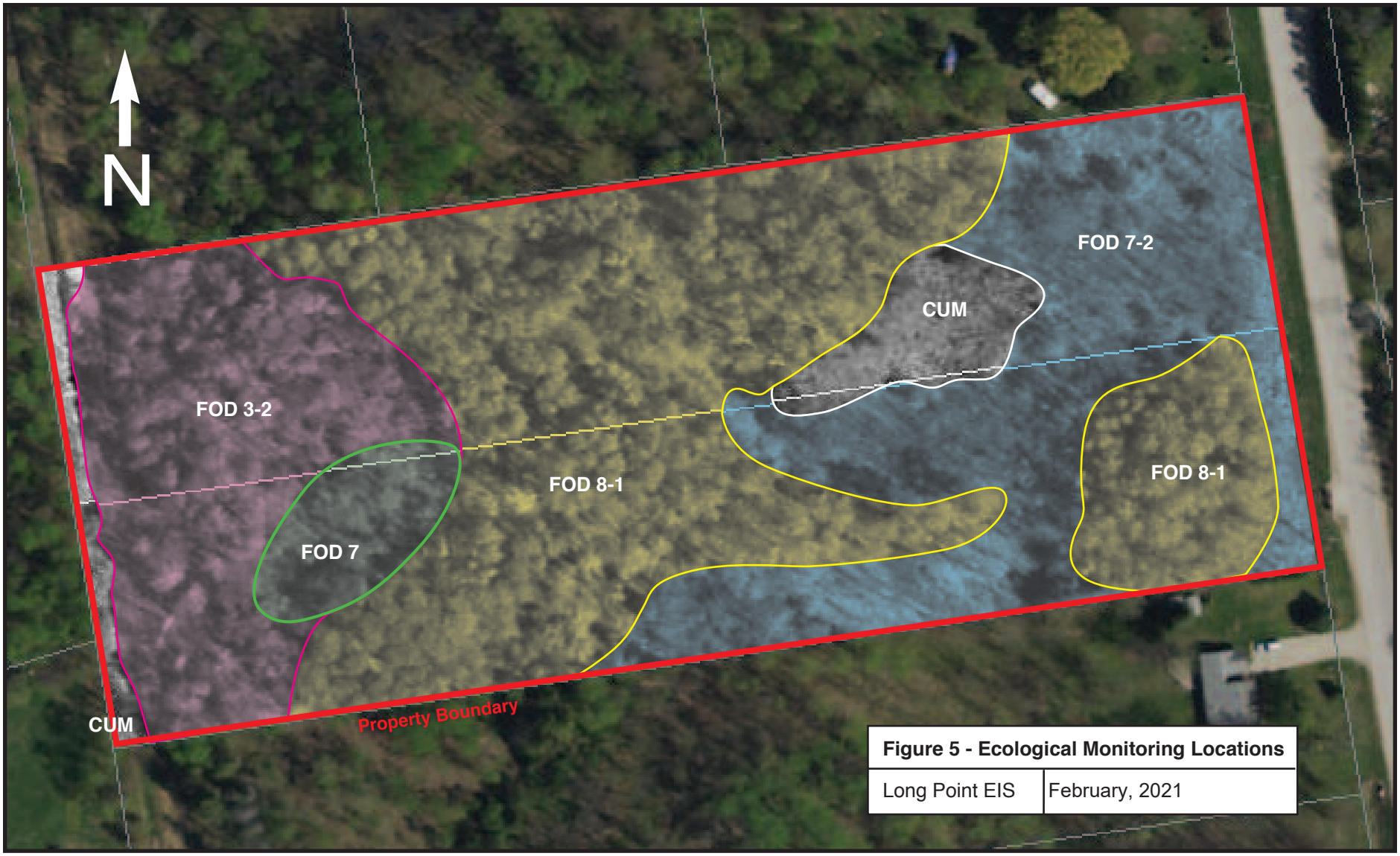
# Figure 3: Ecological Monitoring Locations



# Figure 4: Hydrological Features



# Figure 5: Ecological Monitoring Locations




CUM - Mineral Cultural Meadow

FOD3-2: Dry-Fresh White Birch-Poplar Deciduous Forest

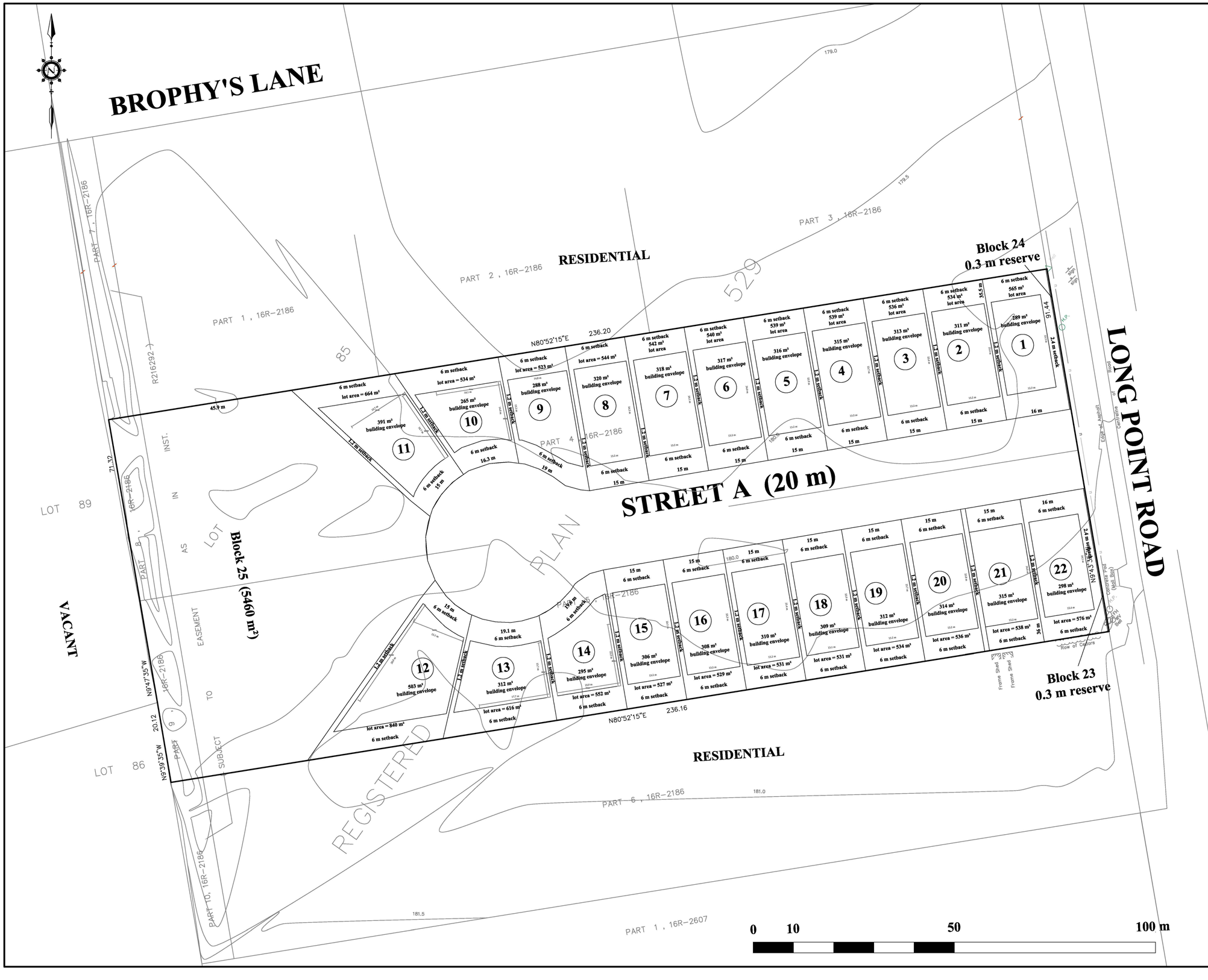
FOD7 - Fresh-Moist Lowland Deciduous Forest

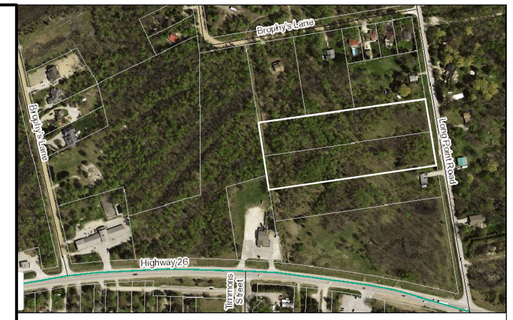
FOD7-2 - Fresh-Moist Ash Deciduous Forest

FOD8-1 - Fresh-Moist Poplar Deciduous Forest Type

# APPENDICES

# Appendix A – Draft Plan of Subdivision




# Draft Plan of Subdivision
# Long Point Road

**PART OF LOT 85**
**REGISTERED PLAN 529**

**TOWN OF THE BLUE MOUNTAINS**
**(Formerly Township of Collingwood)**
**COUNTY OF GREY**

## SURVEYOR'S CERTIFICATE

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

OCTOBER 29, 2018 _____
PAUL R. THOMSEN O.L.S.
ZUBEK, EMO, PATTEN & THOMSEN LTD

## OWNER'S CERTIFICATE

PASCUZZO PLANNING INC. WAS AUTHORIZED BY TONY LESIAK AND ISABELA LEHMANN TO SUBMIT THE PROPOSED PLAN OF SUBDIVISION TO THE COUNTY OF GREY FOR APPROVAL.

OCTOBER 29, 2018 _____
ANDREW PASCUZZO MCIP RPP
PASCUZZO PLANNING INC.

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

(a) AS SHOWN ON DRAFT PLAN,
(b) AS SHOWN ON DRAFT PLAN,
(c) AS SHOWN ON DRAFT AND KEY PLAN,
(d) THE LAND IS TO BE USED ACCORDING TO THE SCHEDULE OF LAND USE,
(e) AS SHOWN ON DRAFT PLAN,
(f) AS SHOWN ON DRAFT PLAN,
(g) AS SHOWN ON DRAFT PLAN,
(h) MUNICIPAL WATER SUPPLY,
(i) SAND,
(j) AS SHOWN ON DRAFT PLAN,
(k) MUNICIPAL SANITARY SEWER,
(l) EASEMENT -MUNICIPAL DRAIN

## SCHEDULE OF LAND USE

| | UNITS | AREA |
|---|---|---|
| SINGLE-FAMILY RESIDENTIAL (LOTS 1-22) | 22 | 1.23 ha. |
| 1 FOOT RESERVES (BLOCK 23 and 24) | | 0.002 ha. |
| OPEN SPACE (BLOCK 25 ) | | 0.55 ha. |
| ROAD (STREET A) | | 0.38 ha. |
| TOTAL | 22 | 2.16 ha. |

DISTANCES SHOWN ON THIS PLAN ARE IN METRES AND CAN BE CONVERTED TO FEET BY DIVIDING BY 0.3048

| PROJECT: 892-17 | DRAWN: AP | JAN 2021 |
|---|---|---|

**DWG: 892-17-DP8+**

**PASCUZZO PLANNING INC.**

# Appendix B – Detailed Ecological Data

# Table B1 - Vascular Plant List for the Long Point Property

**Table B1: Plant Species List for the Long Point Property**

| Common Name | Scientific Name | Provincial Status (S-RANK)[1] | COSEWIC Status[2] | COSSARO Status[2] | Native vs Non-native | Typical habitat |
|---|---|---|---|---|---|---|
| Alternate-leaved Dogwood | *Cornus alternafolia* | S5 | - | - | Native | open woodlands |
| American Basswood | *Tilia americana* | S5 | - | - | Native | deep fertile soils, with other hardwoods |
| American Larch | *Larix laricina* | S5 | - | - | Native | moist, light soils with low shade |
| American Water-horehound | *Lycopus americanus* | S5 | - | - | Native | wet places |
| Awl-fruited Sedge | *Carex stipata* | S5 | - | - | Native | ditches, marshes, rich swamps |
| Asparagus-fern | *Asparagus officinalis* | NA | - | - | Non-native | fields and meadows |
| Balsam Poplar | *Populus balsamifera* | S5 | - | - | Native | moist, rich low lying ground |
| Birdfoot Trefoil* | *Lotus corniculatus* | NA | - | - | Non-native | roadsides and waste areas |
| Bird Vetch* | *Vicia cracca* | NA | - | - | Non-native | disturbed areas |
| Bladder Sedge | *Carex intumescens* | S5 | - | - | Native | swamps, wet woods |
| Black Ash | *Fraxinus nigra* | S3 | THR | - | Native | swampy forests |
| Black Cherry | *Prunus serotina* | S5 | - | - | Native | hardwood forests, often as secondary species |
| Black Medic* | *Medicago lupulina* | NA | - | - | Non-native | roadsides and waste areas |
| Black Nightshade | *Solanum nigrum* | NA | - | - | Non-native | waste places |
| Black Willow | *Salix nigra* | S4 | - | - | Native | low, wet areas |
| Bladder Campion | *Silene cucubalus* | NA | - | - | Non-native | roadsides, fields |
| Boneset | *Eupatorium perfoliatum* | S5 | - | - | Native | low areas, thickets, swamps |
| Bracken Fern | *Pteridium aquilinum* | S5 | - | - | Native | Fields and meadows |
| Bristly sarsaparilla | *Aralia hispida* | S5 | - | - | Native | dry open woods |
| Broad-leaf Cattail | *Typha latifolia* | S5 | - | - | Native | marshes, ponds and ditches |
| Brown Knapweed* | *Centaurea jacea* | NA | - | - | Non-native | roadsides, fields |
| Buckthorn* | *Rhamnus cathartica* | NA | - | - | Non-native | distubred sites |
| Canada Anemone | *Aneomone canadensis* | S5 | - | - | Native | meadows and thickets |
| Canada Bluejoint | *Calamagrostis canadensis* | S5 | - | - | Native | various open wet areas |
| Canada Goldenrod | *Solidago canadensis* | S5 | - | - | Native | roadsides, thickets and clearings |
| Canada Mayflower | *Maianthemum canadense* | S5 | - | - | Native | woods and clearings |
| Canada Thistle* | *Cirsium arvense* | NA | - | - | Non-native | Roadsides, pastures and fields |
| Chicory | *Chicorium intybus* | NA | - | - | Non-native | roadsides and waste areas |
| Choke Cherry | *Prunus virginiana* | S5 | - | - | Native | rich soils in clearings or along forest edge |
| Coltsfoot* | *Tussilago farfara* | NA | - | - | Non-native | waste places and roadsides |
| Common Burdock | *Arctium minus* | NA | - | - | Non-native | roadsides and waste areas |
| Common Buttercup | *Ranunculus acris* | NA | - | - | Non-native | fields and meadows |
| Common Cinquefoil | *Potentilla simplex* | S5 | - | - | Native | fields and dry woods |
| Common Dandelion | *Taraxacum officinale* | NA | - | - | Non-native | lawns, fields, roadsides |
| Common Elderberry | *Sambucus nigra* | S5 | - | - | Native | deciduous forest edege and understory |
| Common Lilac | *Syringa vulgaris* | SE | - | - | Non-native | disturbed sites |
| Common Milkweed | *Asclepias syriaca* | S5 | - | - | Native | roadsides, fields, dry soil |
| Common Ragweed | *Ambrosia artemisiifolia* | S5 | - | - | Native | roadsides, fields |
| Common Three-square | *Schoenoplectus pungens* | S5 | - | - | Native | shores, marshes |
| Common St. Johnswort* | *Hypericum perforatum* | S5 | - | - | Non-native | roadsides, fields, waste places |
| Common Strawberry | *Fragaria virginiana* | S5 | - | - | Non-native | pastures and rocky woods |
| Common Timothy | *Phleum pratense* | NA | - | - | Non-native | fields |
| Common Yarrow | *Achillea millefolium* | NA | - | - | Non-native | roadsides, fields, waste places |
| Crested Sedge | *Carex cristatella* | S5 | - | - | Native | wet meadows and woods |
| Curly Dock | *Rumex crispus* | NA | - | - | Non-native | fields and waste places |
| Dewberry (Dwarf Raspberry) | *Rubus pubescens* | S5 | - | - | Native | upland woods, swamps, along rivers and lakes |
| Dog Violet | *Viola conspersa* | S5 | - | - | Native | meadows, low woodlands, stream banks |
| Domestic Apple | *Malus pumila* | NA | - | - | Non-native | orchards |
| Early Goldenrod | *Solidago juncea* | S5 | - | - | Native | roadsides, rocky banks, open woods |
| Eastern White Cedar | *Thuja occidentalis* | S5 | - | - | Native | often in association with limestone, wet or dry conditions |
| Enchanter's Nightshade | *Circaea lutetiana* | S5 | - | - | Native | woods |

**Table B1: Plant Species List for the Long Point Property**

| Common Name | Scientific Name | Provincial Status (S-RANK)[1] | COSEWIC Status[2] | COSSARO Status[2] | Native vs Non-native | Typical habitat |
|---|---|---|---|---|---|---|
| English Plantain | *Plantago lanceolata* | NA | - | - | Non-native | common to roadsides and waste places |
| False Solomon's-seal | *Maianthemum racemosum* | S5 | - | - | Native | woods |
| Field Bindweed* | *Convolvulus arvensis* | NA | - | - | Non-native | fields and waste places |
| Forget-me-not* | *Myosotis scorpioides* | NA | - | - | Non-native | wet places |
| Fowl Bluegrass | *Poa palustris* | S5 | - | - | Native | wet places |
| Fringed Loosestrife | *Lysimachia ciliata* | S5 | - | - | Native | swamps, wet thickets or meadows |
| Goldenrod | *Solidago sp.* | - | - | - | Native | various |
| Gooseberry | *Ribes oxyacanthoides* | S5 | - | - | Native | forested areas, stream banks |
| Ground Cherry | *Physalis sp.* | S4 | - | - | Native | dry soil |
| Hairy Lettuce | *Lactuca hirsuita* | S4? | - | - | Native | open woods and clearings |
| Harlequin Blue Flag | *Iris versicolor* | S5 | - | - | Native | marshes, wet meadows |
| Hawthorn | *Crataegus spp* | - | - | - | Native | early succession species, disturbed areas |
| Heart-leaved Aster | *Symphyotrichum cordifolium* | S5 | - | - | Native | open woods, clearings |
| Herb-Robert | *Geranium robertianum* | NA | - | - | Native | rocky woods and shorelines |
| Jewelweed | *Impatiens capensis* | S5 | - | - | Native | wet, shady places |
| Lady's Thumb | *Polygonum persicaria* | NA | - | - | Non-native | cultivated groud, waste places |
| Lance-leaved Goldenrod | *Euthamia graminifolia* | S5 | - | - | Native | damp places, thickets |
| Late Goldenrod | *Solidago gigantea* | S5 | - | - | Native | moist open thickets |
| Lilac | *Syringa vulgaris* | NA | - | - | Non-native | ornamental |
| Maiden Pink | *Dianthus deltoides* | NA | - | - | Non-native | dry fields, roadsides |
| Manitoba Maple* | *Acer negundo* | S5 | - | - | Native | Often in riparian or shoreline areas |
| Meadow Fescue | *Lolium pratense* | NA | - | - | Non-native | fields and meadows |
| Meadow Horsetail | *Equisetum pratense* | S5 | - | - | Native | swamps, moist forests, wet meadows |
| Motherwort | *Leonurus cardiaca* | NA | - | - | Non-native | roadsides and waste areas |
| Narrow-leaved Cattail* | *Typha angustifolia* | NA | - | - | Native | marshes, ponds and ditches |
| New England Aster | *Symphyotrichum novae-angliae* | S5 | - | - | Native | thickets, meadows, cultivated fields |
| Northern Red Currant | *Ribes rubrum* | NA | - | - | Native | wetlands, shores and stream banks, |
| Northern Willowherb | *Epilobium ciliatum* | S5 | - | - | Native | wet places |
| Norway Maple* | *Acer platanoides* | NA | - | - | Non-native | Landscaping plant |
| Norway Spruce | *Picea abies* | NA | - | - | Non-native | Landscaping sp |
| Orchard Grass | *Dactylis glomerata* | NA | - | - | Non-native | open areas |
| Oriental Bittersweet* | *Celastrus orbiculatus* | NA | - | - | Non-native | disturbed areas |
| Panicled Aster | *Symphyotrichum lanceolatum* | S5 | - | - | Native | damp open ground, wet meadows |
| Peach-leaved Willow | *Salix amygdaloides* | S5 | - | - | Native | wet places |
| Pennsylvania Bittercress | *Cardamine pensylvanica* | S5 | - | - | Native | springs, wet ground |
| Perennial Ryegrass* | *Lolium perenne* | NA | - | - | Non-native | lawns, fields, roadsides |
| Phildelphia Fleabane | *Erigeron philadelphicus* | S5 | - | - | Native | fields, open woods |
| Plantain-leaved Sedge | *Carex plantaginea* | S5 | - | - | Native | woods |
| Poison Ivy | *Toxicodendron radicans* | S5 | - | - | Native | variety of habitats |
| Purple Loosestrife* | *Lythrum salicaria* | NA | - | - | Non-native | swamps, wet meadows |
| Pussy Willow | *Salix discolor* | S5 | - | - | Native | wet areas with little canopy cover |
| Red Ash | *Fraxinus pennsylvanica* | S5 | - | - | Native | shores and banks, or areas with little competition |
| Red Baneberry | *Actaea rubra* | S5 | - | - | Native | woods |
| Red Clover* | *Trifolium pratense* | NA | - | - | Non-native | fields and wayside areas |
| Red Fescue | *Festuca rubra* | S5 | - | - | Native | open areas |
| Red Maple | *Acer rubrum* | S5 | - | - | Native | swamp borders |
| Red-osier Dogwood | *Cornus sericea* | S5 | - | - | Native | wetlands, wet fields and thickets |
| Round-leaved Dogwood | *Cornus rugosa* | S5 | - | - | Native | deciduous forest understory |
| Sarsaparilla | *Aralia nudicaulis* | S5 | - | - | Native | dry, open woods |
| Scots Pine | *Pinus sylvestris* | NA | - | - | Non-native | often on poor soils, usually planted |
| Self-heal | *Prunella vulgaris* | S5 | - | - | Non-native | roadsides and waste areas |

**Table B1: Plant Species List for the Long Point Property**

| Common Name | Scientific Name | Provincial Status (S-RANK)[1] | COSEWIC Status[2] | COSSARO Status[2] | Native vs Non-native | Typical habitat |
|---|---|---|---|---|---|---|
| Sensitive Fern | *Onoclea sensibilis* | S5 | - | - | Native | moist woods, thickets, wet meadows |
| Serviceberry | *Amelanchier arborea* | S5 | - | - | Native | deciduous forest, usually near openings |
| Silver Maple | *Acer saccharuinum* | S5 | - | - | Native | shores, bottomlands, along streams |
| Silverweed | *Argentina anserina* | S5 | - | - | Native | beaches, shores |
| Small White Aster | *Symphyotrichum lateriflorum* | S5 | - | - | Native | fields and meadows |
| Smooth Brome | *Bromus inermis* | NA | - | - | Non-native | fields and meadows |
| Smooth Goldenrod | *Solidago gigantea* | S5 | - | - | Native | moist open thickets |
| Soft-stemmed Bulrush | *Schoenoplectus tabernaemontan* | S5 | - | - | Native | marshes, shores |
| Spotted Joe-pye Weed | *Eupatorium maculatum* | S5 | - | - | Native | marshes, ponds and ditches |
| Spreading Dogbane | *Apocynum androsaemifolium* | S5 | - | - | Native | thickets, roadsides |
| St. John's-wort | *Hypericum canadense* | S4 | - | - | Native | roadsides, fields, waste places |
| Starry False Solomon's-seal | *Maianthemum stellatum* | S5 | - | | Native | moist open places |
| Sugar Maple | *Acer saccharum* | S5 | - | - | Native | Deep, fertile, well-drained soils |
| Swamp Aster | *Symphyotrichum puniceum* | S5 | - | - | Native | swamps, wet thickets or meadows |
| Sweet Pea | *Lathyrus latifolius* | NA | - | - | Non-native | roadsides and waste areas |
| Tall Fescue* | *Schedonorus arundinaceus* | NA | - | - | Non-native | lawns, fields, roadsides |
| Tall Goldenrod | *Solidago altissima* | S5 | - | - | Native | roadsides, open woods, clearings |
| Tartarian Honeysuckle* | *Lonicera tatarica* | NA | - | - | Non-native | Landscaping sp |
| Teasel* | *Dipsacus sylvestris* | NA | - | - | Non-native | roadsides and waste areas |
| Three-leaved Rattlesnakeroot | *Nabalus trifoliolatus* | S5 | - | - | Native | thickets, clearings, open slopes |
| Trembling Aspen | *Populus tremuloides* | S5 | - | - | Native | well-drained moist sandy or gravelly soils |
| Turtlehead | *Chelone glabra* | S5 | - | - | Native | wet ground, stream banks |
| Viper's Bugloss | *Echium vulgare* | NA | - | - | Non-native | meadows and open woods |
| Virginia Creeper | *Parthenocissus quinquefolia* | S4 | - | - | Native | deciduous forest floor, woodland edges |
| Watercress | *Rorippa nasturtium-aquaticum* | NA | - | - | Non-native | running water, springs |
| Water Sedge | *Carex aquatilis* | S5 | - | - | Native | streambanks, marshes, wet fields, ditches |
| White Ash | *Fraxinus americana* | S5 | - | - | Native | moist but well-drained soils, with other hardwoods |
| White Baneberry | *Actaea pachypoda* | S5 | - | - | Native | well-established woods |
| White Birch | *Betula papyrifera* | S5 | - | - | Native | well drained soils, intolerant of shade |
| White Clover* | *Trifolium repens* | NA | - | - | Non-native | fields and roadsides |
| White Elm | *Ulmus americana* | S5 | - | - | Native | Moist, well-drained slopes and bottom-lands. |
| White Rattlesnake-root | *Nabalus albus* | S5 | - | - | Native | rich woods, thickets |
| White Spruce | *Picea glauca* | S5 | - | - | Native | various - often associated with aspen or birch |
| White Sweet Clover | *Melilotus albus* | NA | - | - | Non-native | roadsides, field adges |
| White Turtlehead | *Chelone glabra* | S5 | - | - | Native | wet ground, stream banks |
| Wild Bean | *Phaseolus polystachios* | S4 | - | - | Native | dry woods, sandy soil |
| Wild Carrot* | *Daucus carota* | NA | - | - | Non-native | roadsides, fields and waste areas |
| Wild Grape | *Vitis riparia* | S5 | - | - | Native | woodland openings and edges |
| Wild Madder | *Galium mollugo* | NA | - | - | Non-native | fields and roadsides |
| Wild Mint | *Mentha arvensis* | S5 | - | - | Native | damp soils, shores |
| Wild Raspberry | *Rubus occidentalis* | S5 | - | - | Native | deciduous forest openings or edges |
| Wood Strawberry | *Fragaria vesca* | S5 | - | - | native | fields and open places |
| Woodland Agrimony | *Agrimonia striata* | S4 | - | - | Native | woods, thickets |
| Woundwort | *Stachys palustris* | NA | - | - | Non-native | ditches, wet ground, low meadows |
| Zigzag Goldenrod | *Solidago flexicaulis* | S5 | - | - | Native | woodlands and rich thickets |

* species marked with an asterisk are widely regarded as invasive in Ontario

1. Provincial Rank: S3 - Vulnerable, S4 - Apparently Secure, S5 - Secure

2. Species at Risk Status: END = Endangered, THR = Threatened, SC = Special Concern, NAR = Not at Risk, "-" = not asssessed

# BBS Point-Count Data - June 2017

| | |
|---|---|
| Project: | Long Point EIS |
| Station: | PC-1 |
| Date: | 19-Jun-17 |
| Start Time: | 6:45 |
| Wind (Beaufort): | 0 |
| Sky: | partly cloudy |
| Observer: | Neil Morris |

| Species | | First 5 minutes | | | Second 5 minutes | | | |
|---|---|---|---|---|---|---|---|---|
| **Common name** | **Scientific name** | 0 - 50 m | 50 - 100 m | >100 m | 0 - 50 m | 50 - 100 m | >100 m | Total |
| American Crow | *Corvus brachyrhynchos* | | | 2 | | | | 2 |
| American Redstart | *Setophaga ruticilla* | 1 | | | 1 | | | 2 |
| Great Crested Flycatcher | *Myiarchus crinitus* | | 1 | | | | | 1 |
| House Wren | *Troglodytes aedon* | 1 | 1 | | 1 | | | 3 |
| Northern Oriole | *Icterus galbula* | | 1 | | | 1 | | 2 |
| Red-eyed Vireo | *Vireo olivaceus* | | 1 | 1 | 1 | 1 | 1 | 5 |
| Song Sparrow | *Melospiza melodia* | 1 | | | 1 | 1 | | 3 |
| Warbling Vireo | *Vireo gilvus* | | 1 | | | | 1 | 2 |

Notes:

| | |
|---|---|
| species count | 8 |
| total birds | 5 |

| | |
|---|---|
| Project: | Long Point EIS |
| Station: | PC-2 |
| Date: | 19-Jun-17 |
| Start Time: | 7:05 |
| Wind (Beaufort): | 0 |
| Sky: | partly cloudy |
| Observer: | Neil Morris |

| Species | | First 5 minutes | | | Second 5 minutes | | | |
|---|---|---|---|---|---|---|---|---|
| **Common name** | **Scientific name** | 0 - 50 m | 50 - 100 m | >100 m | 0 - 50 m | 50 - 100 m | >100 m | Total |
| American Redstart | *Setophaga ruticilla* | 1 | | | 1 | | | 2 |
| Black-capped Chickadee | *Poecile atricapillus* | | | | 1 | | | 1 |
| Downy Woodpecker | *Picoides pubescens* | 1 | | | | | | 1 |
| Eastern Wood-pewee | *Contopus virens* | | | 1 | | | 1 | 2 |
| Great Crested Flycatcher | *Myiarchus crinitus* | | 1 | | 1 | | | 2 |
| Mourning Dove | *Zenaida macroura* | | | 1 | | | 1 | 2 |
| Northern Flicker | *Colaptes auratus* | | | 1 | | 1 | 1 | 3 |
| Red-eyed Vireo | *Vireo olivaceus* | | 1 | | | 1 | | 2 |

Notes: Slight interference from traffic noise. Eastern Wood-pewee occurrence is off property (west)

| | |
|---|---|
| species count | 8 |
| total birds | 15 |

# BBS Point-Count Data - July 2017

| | |
|---|---|
| Project: | Long Point EIS |
| Station: | PC-1 |
| Date: | 10-Jul-17 |
| Start Time: | 6:05 |
| Wind (Beaufort): | 0 |
| Sky: | partly cloudy |
| Observer: | Neil Morris |

| Species | | First 5 minutes | | | Second 5 minutes | | | |
|---|---|---|---|---|---|---|---|---|
| **Common name** | **Scientific name** | 0 - 50 m | 50 - 100 m | >100 m | 0 - 50 m | 50 - 100 m | >100 m | Total |
| American Goldfinch | *Carduelis tristis* | 1 | | | | | | 1 |
| American Redstart | *Setophaga ruticilla* | | | | 1 | | | 1 |
| American Robin | *Turdus migratorius* | 3 | | | 1 | | 1 | 5 |
| House Wren | *Troglodytes aedon* | | 1 | | | 1 | | 2 |
| Mourning Dove | *Zenaida macroura* | | | | | | 1 | 1 |
| Northern Cardinal | *Cardinalis cardinalis* | | | | | | 1 | 1 |
| Northern Flicker | *Colaptes auratus* | | | 1 | | | 1 | 2 |
| Northern Oriole | *Icterus galbula* | 1 | | | | | | 1 |
| Red-eyed Vireo | *Vireo olivaceus* | 1 | 1 | | 1 | 1 | | 4 |
| Song Sparrow | *Melospiza melodia* | 1 | 1 | | | 1 | | 3 |

Notes: Mourning doveamnd Northern Cardinal occurrences off property

| | |
|---|---|
| species count | 10 |
| total birds | 21 |

| | |
|---|---|
| Project: | Long Point EIS |
| Station: | PC-2 |
| Date: | 10-Jul-17 |
| Start Time: | 6:22 |
| Wind (Beaufort): | 0 |
| Sky: | partly cloudy |
| Observer: | Neil Morris |

| Species | | First 5 minutes | | | Second 5 minutes | | | |
|---|---|---|---|---|---|---|---|---|
| **Common name** | **Scientific name** | 0 - 50 m | 50 - 100 m | >100 m | 0 - 50 m | 50 - 100 m | >100 m | Total |
| American Crow | *Corvus brachyrhynchos* | | | 1 | | | | 1 |
| American Goldfinch | *Carduelis tristis* | | | | | 1 | | 1 |
| American Robin | *Turdus migratorius* | | | | | 1 | | 1 |
| Eastern Wood-pewee | *Contopus virens* | | | 1 | | | 1 | 2 |
| House Wren | *Troglodytes aedon* | | 1 | | | 1 | | 2 |
| Northern Cardinal | *Cardinalis cardinalis* | | | 1 | | | | 1 |
| Northern Flicker | *Colaptes auratus* | | | | | 1 | 1 | 2 |
| Red-eyed Vireo | *Vireo olivaceus* | | | 1 | | 1 | 1 | 3 |
| Song Sparrow | *Melospiza melodia* | | 1 | | | 1 | | 2 |

Notes: Slight interference from traffic noise
Eastern Wood-pewee was observed off property

| | |
|---|---|
| species count | 9 |
| total birds | 15 |

# Ontario Breeding Bird Atlas (OBBA) - Data for Squares 17NK52 and 17NK53

**Table B2: OBBA Data - Squares 17NK52 and 17NK53**

| Species | | 17NK52 | | 17NK53 | | STATUS | | |
|---|---|---|---|---|---|---|---|---|
| **Common Name** | **Scientific Name** | **1981-1985** | **2001-2005** | **1981-1985** | **2001-2005** | **SRANK[1]** | **COSEWIC[2]** | **COSSARO[2]** |
| Alder Flycatcher | *Empidonax virescens* | Confirmed | Possible | | Probable | S2/S3 | END | END |
| American Black Duck | *Anas rubripes* | Confirmed | | | Confirmed | S4 | | |
| American Crow | *Corvus brachyrhynchos* | Confirmed | Confirmed | Probable | Confirmed | S5 | | |
| American Goldfinch | *Carduelis tristis* | Confirmed | Probable | Probable | Probable | S5 | | |
| American Kestrel | *Falco sparverius* | Confirmed | Possible | | Possible | S5 | | |
| American Redstart | *Setophaga ruticilla* | Confirmed | Possible | Possible | Probable | S5 | | |
| American Robin | *Turdus migratorius* | Confirmed | Confirmed | Confirmed | Confirmed | S5 | | |
| American Woodcock | *Scolopax minor* | Confirmed | Possible | Possible | Possible | S4 | | |
| Baltimore Oriole | *Icterus galbula* | Confirmed | Probable | Confirmed | Confirmed | S4 | | |
| Bank Swallow | *Riparia riparia* | Confirmed | Confirmed | Confirmed | | S4 | THR | THR |
| Barn Swallow | *Hirundo rustica* | Confirmed | Confirmed | Confirmed | Confirmed | S4 | THR | THR |
| Belted Kingfisher | *Ceryle alcyon* | Confirmed | | | Possible | S4 | | |
| Black-billed Cuckoo | *Coccyzus erythropthalmus* | Probable | Possible | | Possible | S5 | | |
| Blackburnian Warbler | *Dendroica fusca* | | Possible | | | S5 | | |
| Black-capped Chickadee | *Poecile atricapillus* | Confirmed | Confirmed | Probable | Confirmed | S5 | | |
| Black-crowned Night-heron | *Nycticorax nycticorax* | Possible | | Confirmed | Confirmed | S3 | | |
| Black-throated Blue Warbler | *Dendroica caerulescens* | Possible | Probable | | Possible | S5 | | |
| Black-throated Green Warbler | *Dendroica virens* | Possible | Possible | | Possible | S5 | | |
| Black-and-white Warbler | *Mniotilta varia* | Probable | Possible | | Possible | S5 | | |
| Blue Jay | *Cyanocitta cristata* | Confirmed | Confirmed | Confirmed | Probable | S5 | | |
| Blue-winged Teal | *Anas discors* | Confirmed | | | Possible | S4 | | |
| Blue-winged Warbler | *Vermivora pinus* | | Possible | | | S4 | | |
| Bobolink | *Dolichonyx oryzivorus* | Confirmed | Probable | Confirmed | Possible | S4 | THR | THR |
| Brewster's Warbler | *Vermivor Pinus* | | Possible | | | NA | | |
| Brown Creeper | *Certhia americana* | Probable | Possible | | | S5 | | |
| Brown Thrasher | *Toxostoma rufum* | Confirmed | Probable | Possible | Probable | S4 | | |
| Brown-head Cowbird | *Molothrus ater* | Confirmed | Probable | Confirmed | Probable | S4 | | |
| Canada Goose | *Branta canadensis* | Confirmed | Confirmed | | Confirmed | S5 | | |
| Canada Warbler | *Wilsonia canadensis* | Possible | | | Possible | S4 | THR | SC |
| Cedar Waxwing | *Bombycilla cedrorum* | Confirmed | Confirmed | Confirmed | Possible | S5 | | |
| Chestnut-sided Warbler | *Dendroica pensylvanica* | Confirmed | Possible | | Probable | S5 | | |
| Chimney Swift | *Chaetura pelagica* | Probable | | | | S4,S4N | THR | THR |
| Chipping Sparrow | *Spizella passerina* | Confirmed | Confirmed | Confirmed | Probable | S5 | | |
| Clay-colored Sparrow | *Spizella pallida* | | Possible | | | S4 | | |
| Cliff Swallow | *Petrochelidon pyrrhonota* | Confirmed | Possible | | | S4 | | |

**Table B2: OBBA Data - Squares 17NK52 and 17NK53**

| Species | | 17NK52 | | 17NK53 | | STATUS | | |
|---|---|---|---|---|---|---|---|---|
| **Common Name** | **Scientific Name** | **1981-1985** | **2001-2005** | **1981-1985** | **2001-2005** | **SRANK[1]** | **COSEWIC[2]** | **COSSARO[2]** |
| Common Grackle | *Quiscalus quiscula* | Confirmed | Confirmed | Confirmed | Confirmed | S5 | | |
| Common Loon | *Gavia immer* | | | Possible | Possible | S5,S5N | NAR | NAR |
| Common Merganser | *Mergus merganser* | Probable | | Confirmed | Confirmed | S5,S5N | | |
| Common Nighthawk | *Chordeiles minor* | | | Probable | Possible | S4 | THR | SC |
| Common Raven | *Corvus corax* | | Probable | | Possible | S5 | | |
| Common Snipe | *Gallinago delicata* | Confirmed | Possible | | | S5 | | |
| Common Tern | *Sterna hirundo* | | | Confirmed | Confirmed | S4 | NAR | NAR |
| Common Yellowthroat | *Geothlypis trichas* | Confirmed | Probable | Possible | Probable | S5 | | |
| Cooper's Hawk | *Accipiter cooperii* | | Possible | | Possible | S4 | NAR | NAR |
| Dark-eyed Junco | *Junco hyemalis* | Probable | | | | S5 | | |
| Double-crested Cormorant | *Phalacrocorax auritus* | | | | Confirmed | S5 | NAR | NAR |
| Downy Woodpecker | *Picoides pubescens* | Confirmed | Possible | Confirmed | Possible | S5 | | |
| Eastern Bluebird | *Sialia sialis* | | Confirmed | | | S5 | NAR | NAR |
| Eastern Kingbird | *Tyrannus tyrannus* | Confirmed | Confirmed | Confirmed | Probable | S4 | | |
| Eastern Meadowlark | *Sturnella magna* | Confirmed | Probable | Confirmed | Probable | S4 | THR | THR |
| Eastern Phoebe | *Sayornis phoebe* | Probable | Confirmed | Possible | Confirmed | S5 | | |
| Eastern Screech-Owl | *Megascops asio* | Possible | Possible | Possible | | S5 | NAR | NAR |
| Eastern Towhee | *Pipilo erythrophthalmus* | Confirmed | Possible | Possible | | S4 | | |
| Eastern Wood-Pewee | *Contopus virens* | Confirmed | Probable | Possible | Possible | S4 | SC | SC |
| European Starling | *Sturnus vulgaris* | Confirmed | Confirmed | Confirmed | Confirmed | SNA | | |
| Field Sparrow | *Spizella pusilla* | Confirmed | Possible | Possible | Possible | S4 | | |
| Gadwall | *Anas strepera* | | | Probable | | S4 | | |
| Golden-crowned Kinglet | *Regulus satrapa* | Probable | Possible | | | S5 | | |
| Golden-winged Warbler | *Vermivora chrysoptera* | | Probable | | | S4 | SC | SC |
| Great Crested Flycatcher | *Myiarchus crinitus* | Confirmed | Confirmed | Possible | Probable | S4 | | |
| Gray Catbird | *Dumetella carolinensis* | Confirmed | Probable | Possible | Probable | S4 | | |
| Great Black-backed Gull | *Larus marinus* | | | | Confirmed | S2 | | |
| Great Blue Heron | *Ardea herodias* | Possible | | Confirmed | Confirmed | S5 | | |
| Great Egret | *Ardea alba* | | | Probable | Confirmed | S2 | | |
| Great Horned Owl | *Bubo virginianus* | Confirmed | | | Probable | S5 | | |
| Green Heron | *Butorides virescens* | Probable | Possible | Possible | | S4 | | |
| Hairy Woodpecker | *Picoides villosus* | Confirmed | Possible | | Possible | S5 | | |
| Herring Gull | *Larus argentatus* | Confirmed | | Confirmed | Confirmed | S5 | | |
| Horned Lark | *Eremophila alpestris* | Confirmed | Possible | | | S5 | | |
| House Finch | *Carpodacus mexicanus* | | Probable | | Probable | NA | | |

**Table B2: OBBA Data - Squares 17NK52 and 17NK53**

| Species | | 17NK52 | | 17NK53 | | STATUS | | |
|---|---|---|---|---|---|---|---|---|
| **Common Name** | **Scientific Name** | **1981-1985** | **2001-2005** | **1981-1985** | **2001-2005** | **SRANK[1]** | **COSEWIC[2]** | **COSSARO[2]** |
| House Sparrow | *Passer domesticus* | Confirmed | Probable | Confirmed | | NA | | |
| House Wren | *Troglodytes aedon* | Confirmed | Confirmed | Confirmed | Probable | S5 | | |
| Indigo Bunting | *Passerina cyanea* | Confirmed | Probable | Possible | Possible | S4 | | |
| Killdeer | *Charadrius vociferus* | Confirmed | Probable | Probable | Probable | S5 | | |
| Least Flycatcher | *Empidonax minimus* | Confirmed | Possible | Possible | Possible | S4 | | |
| Louisiana Waterthrush | *Seiurus motacilla* | Probable | Probable | | | S3 | THR | SC |
| Magnolia Warbler | *Dendroica magnolia* | | Possible | | | S5 | | |
| Mallard | *Anas platyrhynchos* | Confirmed | Probable | Confirmed | Confirmed | S5 | | |
| Mourning Dove | *Zenaida macroura* | Confirmed | Probable | Probable | Possible | S5 | | |
| Mourning Warbler | *Oporornis philadelphia* | Confirmed | Possible | | Possible | S4 | | |
| Nashville Warbler | *Vermivora ruficapilla* | Confirmed | Possible | | Possible | S5 | | |
| Northern Rough-winged Swallow | *Stelgidopteryx serripennis* | Confirmed | Probable | | | S4 | | |
| Northern Waterthrush | *Seiurus noveboracensis* | Confirmed | Possible | | Possible | S5 | | |
| Northern Cardinal | *Cardinalis cardinalis* | Confirmed | Probable | Probable | Probable | S5 | | |
| Northern Flicker | *Colaptes auratus* | Confirmed | Possible | Probable | Probable | S4 | | |
| Northern Harrier | *Circus cyaneus* | Probable | | | | S4 | NAR | NAR |
| Northern Pintail | *Anas acuta* | | | Confirmed | | S5 | | |
| Orchard Oriole | *Icterus spurius* | | Possible | | | S4 | | |
| Ovenbird | *Seiurus aurocapilla* | Confirmed | Probable | | Probable | S4 | | |
| Pileated Woodpecker | *Dryocopus pileatus* | Probable | Possible | | | S5 | | |
| Pine Warbler | *Dendroica pinus* | | | | Possible | S5 | | |
| Purple Finch | *Carpodacus purpureus* | Confirmed | Possible | | Possible | S4 | | |
| Purple Martin | *Progne subis* | Confirmed | | | Confirmed | S4 | | |
| Red-bellied Woodpecker | *Melanerpes carolinus* | | | | Possible | S4 | | |
| Red-breasted Merganser | *Mergus serrator* | Confirmed | | Confirmed | Probable | S4/S5 | | |
| Red-breasted Nuthatch | *Sitta canadensis* | Probable | | Confirmed | Possible | S5 | | |
| Red-eyed Vireo | *Vireo olivaceus* | Confirmed | Probable | Possible | Probable | S5 | | |
| Red-headed Woodpecker | *Melanerpes erythrocephalus* | Probable | | | | S4 | THR | SC |
| Red-tailed Hawk | *Buteo jamaicensis* | Confirmed | Possible | Probable | Possible | S5 | NAR | NAR |
| Red-winged Blackbird | *Agelaius phoeniceus* | Confirmed | Confirmed | Confirmed | Confirmed | S5 | | |
| Ring-billed Gull | *Larus delawarensis* | | | Confirmed | Confirmed | S4/S5 | | |
| Rock Dove | *Columba livia* | Confirmed | Possible | Possible | Possible | NA | | |
| Rose-breasted Grosbeak | *Pheucticus ludovicianus* | Confirmed | Possible | Confirmed | Possible | S4 | | |
| Ruby-throated Hummingbird | *Archilochus colubris* | Probable | Probable | Possible | Possible | S5 | | |
| Ruffed Grouse | *Bonasa umbellus* | Confirmed | Confirmed | Confirmed | | S5 | | |

**Table B2: OBBA Data - Squares 17NK52 and 17NK53**

| Species | | 17NK52 | | 17NK53 | | STATUS | | |
|---|---|---|---|---|---|---|---|---|
| **Common Name** | **Scientific Name** | **1981-1985** | **2001-2005** | **1981-1985** | **2001-2005** | **SRANK[1]** | **COSEWIC[2]** | **COSSARO[2]** |
| Savannah Sparrow | *Passerculus sandwichensis* | Confirmed | Possible | | Probable | S4 | | |
| Scarlet Tanager | *Piranga olivacea* | Possible | Probable | | | S4 | | |
| Sedge Wren | *Cistothorus platensis* | | Possible | | | S4 | NAR | NAR |
| Song Sparrow | *Melospiza melodia* | Confirmed | Confirmed | Confirmed | Confirmed | S5 | | |
| Sora | *Porzana carolina* | Possible | | | | S4 | | |
| Spotted Sandpiper | *Actitis macularius* | Confirmed | | Confirmed | Probable | S5 | | |
| Swamp Sparrow | *Melospiza georgiana* | Confirmed | Probable | | Probable | S5 | | |
| Tree Swallow | *Tachycineta bicolor* | Confirmed | Confirmed | Confirmed | Probable | S4 | | |
| Turkey Vulture | *Cathartes aura* | Confirmed | Confirmed | Probable | | S5 | | |
| Upland Sandpiper | *Bartramia longicauda* | Confirmed | Probable | | | S4 | | |
| Veery | *Catharus fuscescens* | Confirmed | Probable | Possible | Possible | S4 | | |
| Vesper Sparrow | *Pooecetes gramineus* | Confirmed | Possible | | Possible | S4 | | |
| Virginia Rail | *Rallus limicola* | | | Possible | | S5 | | |
| Warbling Vireo | *Vireo gilvus* | Confirmed | Probable | Possible | Probable | S5 | | |
| Western Meadowlark | *Sturnella neglecta* | Possible | | | | S3 | | |
| White-breasted Nuthatch | *Sitta carolinensis* | Confirmed | Possible | Possible | Possible | S5 | | |
| White-throated Sparrow | *Zonotrichia albicollis* | Confirmed | Possible | | | S5 | | |
| Wild Turkey | *Meleagris gallopavo* | | Possible | | | S5 | | |
| Willow Flycatcher | *Empidonax traillii* | | Probable | | Possible | S5 | | |
| Winter Wren | *Troglodytes troglodytes* | Probable | Possible | | Possible | S5 | | |
| Wood Duck | *Aix sponsa* | Confirmed | Probable | | Possible | S5 | | |
| Wood Thrush | *Hylocichla mustelina* | Confirmed | Possible | | Probable | S4 | THR | SC |
| Yellow Warbler | *Dendroica petechia* | Confirmed | Probable | Probable | Probable | S5 | | |
| Yellow-bellied Sapsucker | *Sphyrapicus varius* | Confirmed | Probable | Possible | Possible | S5 | | |
| Yellow-rumped Warbler | *Dendroica coronata* | Probable | Possible | | Possible | S5 | | |

1. Provincial Rank: SE - Exotic, S2 - Imperiled, S3 - Vulnerable, S4 - apparently secure, S5 - Secure
2. COSEWIC/COSSARO Status: End - Endangered, Thr - Threatened, SC - Special Concern, NAR - not at risk

# Amphibian Point-Count Data

**Amphibian Monitoring Datasheet**

Site: Lesiak Property

Date: 18 Apr 2017

Station ID: Station 1

Time: 9:50

Air temp: 7°C

Wind: 1-2

| Species | Code 1 | Code 2 | Code 3 |
|---|---|---|---|
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

Notes: Spring peepers calling (code 1) beyond 100 m. (West of drain)
No calls in station radius.

**Amphibian Monitoring Datasheet**

Site: Long Point Rd (Lesiak)

Date: 18 June 2017

Station ID: 1

Time: 9:45

Air temp: 20

Wind: 1

| Species | Code 1 | Code 2 | Code 3 |
|---|---|---|---|
| — | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

Notes: Sunset at 9:09.
Overnight low forecast for
A few tree frogs calling >100m west
No amphibian vocalizations within Property

**Amphibian Monitoring Datasheet**

Site: Lesiate

Date: 25 July

Station ID: Station 1

Time: 10:50 AM

Air temp: 18 – overnight low = 16

Wind: 0

| Species | Code 1 | Code 2 | Code 3 |
|---|---|---|---|
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

Notes: Sunset time - 8:55

Green Frogs heard in general region (Meaford)

No amphibians calling in/near ponds

All pools dry.

# Ecological Land Classification (ELC) - Classification Sheets

| Community Classification | Site: Long Point | Polygon: A |
|---|---|---|
| | Date: 19 June 2017 | |
| | North: (17 0356245 | |
| | East: 5970725 | |

**Polygon Description**

| System | Substrate | Topo Feature | History | Plant Form | Community |
|---|---|---|---|---|---|
| ☒ Terrestrial | ☐ Organic Soil | ☐ Lacustrine | ☒ Natural | ☐ Plankton | ☐ Lake |
| ☐ Wetland | ☒ Mineral Soil | ☐ Riverine | ☐ Cultural | ☐ Submerged | ☐ Pond |
| ☐ Aquatic | ☐ Mineral Parent | ☐ Bottomland | ☐ | ☐ Floating | ☐ River |
| | ☐ Bedrock | ☐ Terrace | Site was likely cleared >50yrs ago | ☐ Garminoid | ☐ Stream |
| | ☐ | ☐ Valley Slope | | ☐ Forb | ☐ Marsh |
| | ☐ | ☒ Tableland | | ☒ Deciduous | ☐ Swamp |
| | | ☐ Roll Upland | | ☐ Coniferous | ☐ Fen |
| | | ☐ | | ☐ Mixed | ☐ Bog |
| | | | | ☐ | ☐ Meadcow |
| | | | | | ☐ Thicket |
| | | | | | ☐ Savannah |
| | | | | | ☐ Woodland |
| | | | | | ☒ Forest |
| | | | | | ☐ Plantation |
| | | | | | ☐ |

| Site |
|---|
| ☐ Open Water |
| ☐ Shallow Water |
| ☒ Overburden |
| ☐ Bedrock |

**Stand Description**

| Layer | Height | Cover | Species Composition |
|---|---|---|---|
| 1 Canopy | 2 (3) | 4 | Tr. Aspen > Ash > Balsam Ash |
| 2 Sub-canopy | 3 | 2 | Ash > Aspen > Balsam Poplar |
| 3 Understorey | 4 (3) | 3 | Ash > Dogwood (AH, RL) > ABB |
| 4 Ground Cover | | 4 | cc wet loam |

Stand Composition: Aspen > Ash > Poplar | BA:

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Size Class | O | <10 | A | 10 - 24 | A | 25 - 50 | ✓ | >50 |
| Standing Snags | N | <10 | N | 10 - 24 | R | 25 - 50 | N | >50 |
| Deaddfall/Logs | O | <10 | A | 10 - 24 | A | 25 - 50 | N | >50 |

(N = None, R = Rare, O = Occasional, A = Abundant)

wind storm

| Community Age | | Pioneer | ✓ | Young | | Mid-aged | | Mature | | Old Growth |
|---|---|---|---|---|---|---|---|---|---|---|

**Soil Analysis**

| | | | | | |
|---|---|---|---|---|---|
| Texture: | Sand | Depth to Mottles: | >120/80 | Depth to Gley: | >120 |
| Moisture: | 2/3 | Depth of Organic Layer: | NA | | |
| Homogeneity: | H | Depth to Bedrock: | >120 | | |

**Community Classification**

| | | | |
|---|---|---|---|
| Class: | | Code: | |
| Series: | | Code: | |
| Ecosite: | | Code: | |
| Veg Type: | Post-Mature Poplar FOD | Code: | FOD 8-1 |

Notes:

Numerous Aspen, down or leaning due to wind storm (and Balsam poplar) Ash.

| Community Classification | Site: Long Point Rd. | Polygon: B |
|---|---|---|
| | Date: 19 June | |
| | North: 4938390 | |
| | East: 556205 | |

**Polygon Description**

| System | Substrate | Topo Feature | History | Plant Form | Community |
|---|---|---|---|---|---|
| ☒ Terrestrial | ☐ Organic Soil | ☐ Lacustrine | ☒ Natural | ☐ Plankton | ☐ Lake |
| ☐ Wetland | ☒ Mineral Soil | ☐ Riverine | ☐ Cultural | ☐ Submerged | ☐ Pond |
| ☐ Aquatic | ☐ Mineral Parent | ☐ Bottomland | ☐ | ☐ Floating | ☐ River |
| | ☐ Bedrock | ☐ Terrace | | ☐ Garminoid | ☐ Stream |
| | ☐ | ☐ Valley Slope | | ☐ Forb | ☐ Marsh |
| | ☐ | ☒ Tableland | | ☒ Deciduous | ☐ Swamp |
| | | ☐ Roll Upland | | ☐ Coniferous | ☐ Fen |
| | | ☐ | | ☐ Mixed | ☐ Bog |
| Site | | | | ☐ | ☐ Meadcow |
| ☐ Open Water | | | | | ☐ Thicket |
| ☐ Shallow Water | | | | | ☐ Savannah |
| ☒ Overburden | | | | | ☐ Woodland |
| ☐ Bedrock | | | | | ☒ Forest |
| | | | | | ☐ Plantation |
| | | | | | ☐ |

**Stand Description**

| | Layer | Height | Cover | Species Composition |
|---|---|---|---|---|
| 1 | Canopy | 2-3 | 4 | Gr. Ash > Aspen > Wh Ash |
| 2 | Sub-canopy | 2-3 | M | Ash > Aspen |
| 3 | Understorey | 3-4 | 3 | Ash > Rod |
| 4 | Ground Cover | K | 4 | See notes |

Stand Composition: Aspen > Ash BA:

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Size Class | A | <10 | A | 10 - 24 | O | 25 - 50 | N | >50 |
| Standing Snags | N | <10 | N | 10 - 24 | R | 25 - 50 | N | >50 |
| Deaddfall/Logs | N | <10 | R | 10 - 24 | R | 25 - 50 | N | >50 |

(N = None, R = Rare, O = Occasional, A = Abundant)

| Community Age | | Pioneer | ✓ | Young | | Mid-aged | | Mature | | Old Growth |
|---|---|---|---|---|---|---|---|---|---|---|

**Soil Analysis**

| | | | | | |
|---|---|---|---|---|---|
| Texture: | Sand | Depth to Mottles: | 80 - >120 | Depth to Gley: | >120 |
| Moisture: | 2-3 | Depth of Organic Layer: | N/A | | |
| Homogeneity: | H | Depth to Bedrock: | >120 | | |

**Community Classification**

| | | |
|---|---|---|
| Class: | | Code: |
| Series: | | Code: |
| Ecosite: | | Code: |
| Veg Type: | Fresh - Moist Ash Lowland | Code: FOM 4-2 |
| Notes: | | |

| Community Classification | Site: Lava Point Rd | Polygon: C |
|---|---|---|
| | Date: 19 June 2017 | |
| | North: 4975043 | |
| | East: 556199 | |

**Polygon Description**

| System | Substrate | Topo Feature | History | Plant Form | Community |
|---|---|---|---|---|---|
| ☒ Terrestrial | ☐ Organic Soil | ☐ Lacustrine | ☐ Natural | ☐ Plankton | ☐ Lake |
| ☐ Wetland | ☒ Mineral Soil | ☐ Riverine | ☒ Cultural | ☐ Submerged | ☐ Pond |
| ☐ Aquatic | ☐ Mineral Parent | ☐ Bottomland | ☐ | ☐ Floating | ☐ River |
| | ☐ Bedrock | ☐ Terrace | | ☒ Graminoid | ☐ Stream |
| | ☐ | ☐ Valley Slope | | ☒ Forb | ☐ Marsh |
| | ☐ | ☒ Tableland | | ☐ Deciduous | ☐ Swamp |
| | | ☐ Roll Upland | | ☐ Coniferous | ☐ Fen |
| | | ☐ | | ☐ Mixed | ☐ Bog |
| Site | | | | ☐ | ☒ Meadcow |
| ☐ Open Water | | | | | ☐ Thicket |
| ☐ Shallow Water | | | | | ☐ Savannah |
| ☒ Overburden | | | | | ☐ Woodland |
| ☐ Bedrock | | | | | ☐ Forest |
| | | | | | ☐ Plantation |
| | | | | | ☐ |

**Stand Description**

| Layer | Height | Cover | Species Composition |
|---|---|---|---|
| 1 Canopy | 5/6 | 4 | see notes |
| 2 Sub-canopy | | | |
| 3 Understorey | | | |
| 4 Ground Cover | | | |

Stand Composition: Graminoid / Forb BA:

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Size Class | | <10 | | 10 - 24 | | 25 - 50 | | >50 |
| Standing Snags | | <10 | | 10 - 24 | | 25 - 50 | | >50 |
| Deaddfall/Logs | | <10 | | 10 - 24 | | 25 - 50 | | >50 |

NA

(N = None, R = Rare, O = Occasional, A = Abundant)

| Community Age | | Pioneer | | Young | | Mid-aged | | Mature | | Old Growth |
|---|---|---|---|---|---|---|---|---|---|---|
| | ✓ | | | | | | | | | |

**Soil Analysis**

| | | | |
|---|---|---|---|
| Texture: Sand | Depth to Mottles: 75cm | Depth to Gley: >120 |
| Moisture: 3 | Depth of Organic Layer: NA | |
| Homogeneity: A1 | Depth to Bedrock: >120 | |

**Community Classification**

| | |
|---|---|
| Class: | Code: |
| Series: | Code: |
| Ecosite: | Code: |
| Veg Type: Cultural Meadow | Code: |

Notes:
A few scattered saplings (<5cm, 2m), incl. Scots Pine

| Community Classification | Site: Lava Point | Polygon: D |
|---|---|---|
| | Date: 19 JUNE | |
| | North: 6036780 | |
| | East: 17 556184 | |

**Polygon Description**

| System | Substrate | Topo Feature | History | Plant Form | Community |
|---|---|---|---|---|---|
| ☒ Terrestrial | ☐ Organic Soil | ☐ Lacustrine | ☒ Natural | ☐ Plankton | ☐ Lake |
| ☐ Wetland | ☒ Mineral Soil | ☐ Riverine | ☐ Cultural | ☐ Submerged | ☐ Pond |
| ☐ Aquatic | ☐ Mineral Parent | ☐ Bottomland | ☐ | ☐ Floating | ☐ River |
| | ☐ Bedrock | ☐ Terrace | | ☐ Garminoid | ☐ Stream |
| | ☐ | ☐ Valley Slope | | ☐ Forb | ☐ Marsh |
| | ☐ | ☒ Tableland | | ☒ Deciduous | ☐ Swamp |
| | | ☐ Roll Upland | | ☐ Coniferous | ☐ Fen |
| | | ☐ | | ☐ Mixed | ☐ Bog |
| Site | | | | ☐ | ☐ Meadcow |
| ☐ Open Water | | | | | ☐ Thicket |
| ☐ Shallow Water | | | | | ☐ Savannah |
| ☒ Overburden | | | | | ☐ Woodland |
| ☐ Bedrock | | | | | ☒ Forest |
| | | | | | ☐ Plantation |
| | | | | | ☐ |

**Stand Description**

| Layer | Height | Cover | Species Composition |
|---|---|---|---|
| 1 Canopy | 2 | 4 | Tr. Aspen > Balsam Poplar > Green Ash = White Ash |
| 2 Sub-canopy | 3 | 2 | Gr. Ash > Aspen/Poplar > White Ash |
| 3 Understorey | 3/4 | 3 | Ash > Dogwood > ROA |
| 4 Ground Cover | | 4 | red osier dogwood |

Stand Composition: Aspen > Poplar > Ash BA:

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Size Class | O | <10 | A | 10 - 24 | A | 25 - 50 | N | >50 |
| Standing Snags | N | <10 | N | 10 - 24 | N | 25 - 50 | N | >50 |
| Deaddfall/Logs | N | <10 | O | 10 - 24 | O | 25 - 50 | N | >50 |

(N = None, R = Rare, O = Occasional, A = Abundant)

| Community Age | | Pioneer | ✓ | Young | | Mid-aged | | Mature | | Old Growth |
|---|---|---|---|---|---|---|---|---|---|---|

**Soil Analysis**

| | | | | | |
|---|---|---|---|---|---|
| Texture: | Sand | Depth to Mottles: | 70 | Depth to Gley: | > 120 |
| Moisture: | 3 | Depth of Organic Layer: | NA | | |
| Homogeneity: | 4 | Depth to Bedrock: | > 120 | | |

**Community Classification**

| | | | |
|---|---|---|---|
| Class: | | Code: | |
| Series: | | Code: | |
| Ecosite: | | Code: | |
| Veg Type: | Fresh Moist Poplar | Code: | FOD8-1 |
| Notes: | | | |

| Community Classification | Site: Long Point Rd. | Polygon: E |
|---|---|---|
| | Date: 19 June 2017 | |
| | North: 5450408 | |
| | East: 556126 | |

**Polygon Description**

| System | Substrate | Topo Feature | History | Plant Form | Community |
|---|---|---|---|---|---|
| ☒ Terrestrial | ☐ Organic Soil | ☐ Lacustrine | ☐ Natural | ☐ Plankton | ☐ Lake |
| ☐ Wetland | ☒ Mineral Soil | ☐ Riverine | ☒ Cultural | ☐ Submerged | ☐ Pond |
| ☐ Aquatic | ☐ Mineral Parent | ☐ Bottomland | ☐ | ☐ Floating | ☐ River |
| | ☐ Bedrock | ☐ Terrace | | ☐ Garminoid | ☐ Stream |
| | ☐ | ☐ Valley Slope | | ☐ Forb | ☐ Marsh |
| | ☐ | ☒ Tableland | | ☒ Deciduous | ☐ Swamp |
| | | ☐ Roll Upland | | ☐ Coniferous | ☐ Fen |
| | | ☐ | | ☐ Mixed | ☐ Bog |
| Site | | | | ☐ | ☐ Meadcow |
| ☐ Open Water | | | | | ☐ Thicket |
| ☐ Shallow Water | | | | | ☐ Savannah |
| ☒ Overburden | | | | | ☐ Woodland |
| ☐ Bedrock | | | | | ☒ Forest |
| | | | | | ☐ Plantation |
| | | | | | ☐ |

**Stand Description**

| Layer | Height | Cover | Species Composition |
|---|---|---|---|
| 1 Canopy | 2 | 4 | Tr. Asp > Balsam P > Gr. Ash > Wh Ash |
| 2 Sub-canopy | 3 | 2 | Gr. Ash / Wh. Ash > Tr Asp |
| 3 Understorey | | 3 | Ash > Dogwood |
| 4 Ground Cover | | 4 | |

Stand Composition: Aspen > Poplar = Ash BA:

| Size Class | | | | | | | |
|---|---|---|---|---|---|---|---|
| | O | <10 | A | 10 - 24 | A | 25 - 50 | N | >50 |
| Standing Snags | N | <10 | O | 10 - 24 | R | 25 - 50 | N | >50 |
| Deaddfall/Logs | R | <10 | O | 10 - 24 | O | 25 - 50 | N | >50 |

(N = None, R = Rare, O = Occasional, A = Abundant)

| Community Age | | Pioneer | ✓ | Young | | Mid-aged | | Mature | | Old Growth |
|---|---|---|---|---|---|---|---|---|---|---|

**Soil Analysis**

| | | | |
|---|---|---|---|
| Texture: | Sand | Depth to Mottles: | > 120 | Depth to Gley: | > 120 |
| Moisture: | 2 | Depth of Organic Layer: | NA | | |
| Homogeneity: | H | Depth to Bedrock: | > 120 | | |

**Community Classification**

| | | | |
|---|---|---|---|
| Class: | | Code: | |
| Series: | | Code: | |
| Ecosite: | | Code: | |
| Veg Type: | Fresh moist Poplar FOD | Code: | FOD8-1 |

Notes: V. small patch of white spruce

| Community Classification | Site: Long Point Pond | Polygon: F |
|---|---|---|
| | Date: 19 June 2017 | |
| | North: 4970407 | |
| | East: 556062 | |

**Polygon Description**

| System | Substrate | Topo Feature | History | Plant Form | Community |
|---|---|---|---|---|---|
| ☒ Terrestrial | ☐ Organic Soil | ☐ Lacustrine | ☑ Natural | ☐ Plankton | ☐ Lake |
| ☐ Wetland | ☑ Mineral Soil | ☐ Riverine | ☐ Cultural | ☐ Submerged | ☐ Pond |
| ☐ Aquatic | ☐ Mineral Parent | ☐ Bottomland | ☐ | ☐ Floating | ☐ River |
| | ☐ Bedrock | ☐ Terrace | | ☐ Garminoid | ☐ Stream |
| | ☐ | ☐ Valley Slope | | ☐ Forb | ☐ Marsh |
| | ☐ | ☑ Tableland | | ☑ Deciduous | ☐ Swamp |
| | | ☐ Roll Upland | | ☐ Coniferous | ☐ Fen |
| | | ☐ | | ☐ Mixed | ☐ Bog |
| | | | | ☐ | ☐ Meadcow |
| | | | | | ☐ Thicket |
| | | | | | ☐ Savannah |
| | | | | | ☐ Woodland |
| | | | | | ☑ Forest |
| | | | | | ☐ Plantation |
| | | | | | ☐ |

| Site |
|---|
| ☐ Open Water |
| ☐ Shallow Water |
| ☒ Overburden |
| ☐ Bedrock |

**Stand Description**

| Layer | Height | Cover | Species Composition |
|---|---|---|---|
| 1 Canopy | 2 | 4 | Tr. Aspen > Wh. Birch > Basswood > Sug. Maple |
| 2 Sub-canopy | 3 | 3 | Gr. Ash = Wh. Ash > Tr. Aspen |
| 3 Understorey | 3/4 | 3 | Ash > Dogwoods > Buckthorn |
| 4 Ground Cover | | 4(3) | - see notes |

Stand Composition: Aspen = Birch > Ash BA:

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Size Class | O | <10 | A | 10 - 24 | A | 25 - 50 | N | >50 |
| Standing Snags | N | <10 | N | 10 - 24 | R | 25 - 50 | N | >50 |
| Deaddfall/Logs | N | <10 | O | 10 - 24 | O | 25 - 50 | N | >50 |

(N = None, R = Rare, O = Occasional, A = Abundant)

| Community Age | | Pioneer | ✓ | Young | | Mid-aged | | Mature | | Old Growth |
|---|---|---|---|---|---|---|---|---|---|---|

**Soil Analysis**

| | | | | | |
|---|---|---|---|---|---|
| Texture: | Sand | Depth to Mottles: | > 100 | Depth to Gley: | > 100 |
| Moisture: | 2 | Depth of Organic Layer: | NA | | |
| Homogeneity: | H | Depth to Bedrock: | | | |

**Community Classification**

| | | |
|---|---|---|
| Class: | | Code: |
| Series: | | Code: |
| Ecosite: | | Code: |
| Veg Type: | Dry-Fresh Wh. Birch FOD | Code: FOD3-2 |

Notes:
small patches / depressions of hydric soils
- cobble boulders largely encountered 80-100 cm bgs
- Mottles ~ 30-60 cm in some depressions

| Community Classification | Site: Long Pt. Rd. | Polygon: G |
|---|---|---|
| | Date: | |
| | North: 4936568 | |
| | East: 556682 | |

**Polygon Description**

| System | Substrate | Topo Feature | History | Plant Form | Community |
|---|---|---|---|---|---|
| ☒ Terrestrial | ☐ Organic Soil | ☐ Lacustrine | ☒ Natural | ☐ Plankton | ☐ Lake |
| ☐ Wetland | ☒ Mineral Soil | ☐ Riverine | ☐ Cultural | ☐ Submerged | ☐ Pond |
| ☐ Aquatic | ☐ Mineral Parent | ☐ Bottomland | ☐ | ☐ Floating | ☐ River |
| | ☐ Bedrock | ☐ Terrace | | ☐ Garminoid | ☐ Stream |
| | ☐ | ☐ Valley Slope | | ☐ Forb | ☐ Marsh |
| | ☐ | ☒ Tableland | | ☒ Deciduous | ☐ Swamp |
| | | ☐ Roll Upland | | ☐ Coniferous | ☐ Fen |
| | | ☐ | | ☐ Mixed | ☐ Bog |
| | | | | ☐ | ☐ Meadcow |
| | | | | | ☐ Thicket |
| | | | | | ☐ Savannah |
| | | | | | ☐ Woodland |
| | | | | | ☒ Forest |
| | | | | | ☐ Plantation |
| | | | | | ☐ |

| Site |
|---|
| ☐ Open Water |
| ☐ Shallow Water |
| ☒ Overburden |
| ☐ Bedrock |

**Stand Description**

| | Layer | Height | Cover | Species Composition |
|---|---|---|---|---|
| 1 | Canopy | 2 | 4 | Gr. Ash > Sug Maple > Red Maple > Basswood |
| 2 | Sub-canopy | 3/2 | 3 | Gr. Ash > Maple > Bl. Ash |
| 3 | Understorey | 3(1) | 3 | Alt. Dogwood > Pin cherry > Rel. |
| 4 | Ground Cover | | 4 | see notes |

Stand Composition: BA:

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Size Class | O | <10 | A | 10 - 24 | A | 25 - 50 | R | >50 |
| Standing Snags | R | <10 | R | 10 - 24 | O | 25 - 50 | N | >50 |
| Deaddfall/Logs | N | <10 | R | 10 - 24 | O | 25 - 50 | N | >50 |

(N = None, R = Rare, O = Occasional, A = Abundant)

| Community Age | | Pioneer | | Young | | Mid-aged | | Mature | | Old Growth |
|---|---|---|---|---|---|---|---|---|---|---|

**Soil Analysis**

| | | | | | |
|---|---|---|---|---|---|
| Texture: | Sa/C | Depth to Mottles: | 50-70 | Depth to Gley: | >120 |
| Moisture: | 3/4 | Depth of Organic Layer: | NA | | |
| Homogeneity: | H | Depth to Bedrock: | >120 | | |

**Community Classification**

| | |
|---|---|
| Class: | Code: |
| Series: | Code: |
| Ecosite: | Code: |
| Veg Type: E/M Lowland FOD | Code: FOD7 |

Notes:

Specimens of Willow + Silver Maple present near pool
considerable presence of mast.

| Community Classification | Site: Loma Point | Polygon: H |
|---|---|---|
| | Date: [illegible] 2007 | |
| | North: [illegible] 4930380 | |
| | East: [illegible] 556080 | |

**Polygon Description**

| System | Substrate | Topo Feature | History | Plant Form | Community |
|---|---|---|---|---|---|
| ☐ Terrestrial | ☐ Organic Soil | ☐ Lacustrine | ☒ Natural | ☐ Plankton | ☐ Lake |
| ☒ Wetland | ☒ Mineral Soil | ☐ Riverine | ☐ Cultural | ☐ Submerged | ☐ Pond |
| ☐ Aquatic | ☐ Mineral Parent | ☐ Bottomland | ☐ | ☐ Floating | ☐ River |
| | ☐ Bedrock | ☐ Terrace | | ☐ Garminoid | ☐ Stream |
| | ☐ | ☐ Valley Slope | | ☐ Forb | ☐ Marsh |
| | ☐ | ☒ Tableland | | ☒ Deciduous | ☒ Swamp |
| | | ☐ Roll Upland | | ☐ Coniferous | ☐ Fen |
| | | ☐ | | ☐ Mixed | ☐ Bog |
| Site | | | | ☐ | ☐ Meadcow |
| ☐ Open Water | | | | | ☐ Thicket |
| ☐ Shallow Water | | | | | ☐ Savannah |
| ☒ Overburden | | | | | ☐ Woodland |
| ☐ Bedrock | | | | | ☐ Forest |
| | | | | | ☐ Plantation |
| | | | | | ☐ |

**Stand Description**

| Layer | Height | Cover | Species Composition |
|---|---|---|---|
| 1 Canopy | 2 | 4 | Gr, Ash > |
| 2 Sub-canopy | — | — | |
| 3 Understorey | 4/3 | 2 | Ash > RMS > willows |
| 4 Ground Cover | | 1-2 | sw rockweed |
| Stand Composition: | | | BA: |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Size Class | C | <10 | A | 10 - 24 | R | 25 - 50 | N | >50 |
| Standing Snags | N | <10 | N | 10 - 24 | N | 25 - 50 | N | >50 |
| Deaddfall/Logs | N | <10 | O | 10 - 24 | N | 25 - 50 | N | >50 |

(N = None, R = Rare, O = Occasional, A = Abundant)

| Community Age | | Pioneer | | Young | | Mid-aged | | Mature | | Old Growth |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | ✓ | | | | | | | |

**Soil Analysis**

| | | |
|---|---|---|
| Texture: clay | Depth to Mottles: 10-15 | Depth to Gley: 20-25 |
| Moisture: 6 | Depth of Organic Layer: 10 | |
| Homogeneity: | Depth to Bedrock: | |

**Community Classification**

| | |
|---|---|
| Class: | Code: |
| Series: | Code: |
| Ecosite: | Code: |
| Veg Type: Grey Ash Mineral Braid. Swamp | Code: SWD2-2 |

Notes:
lg. rocks / boulders ~30 cm bgs (could not auger deeper)
possibly excavated.
v. small pocket - notable depression & surrounding ridge

| Community Classification | Site: Long Point | Polygon: 3 |
|---|---|---|
| | Date: 19 June 2017 | |
| | North: 4753061 | |
| | East: 256142 | |

**Polygon Description**

| System | Substrate | Topo Feature | History | Plant Form | Community |
|---|---|---|---|---|---|
| ☐ Terrestrial | ☐ Organic Soil | ☐ Lacustrine | ☒ Natural | ☐ Plankton | ☐ Lake |
| ☒ Wetland | ☒ Mineral Soil | ☐ Riverine | ☐ Cultural | ☐ Submerged | ☐ Pond |
| ☐ Aquatic | ☐ Mineral Parent | ☐ Bottomland | ☐ | ☐ Floating | ☐ River |
| | ☐ Bedrock | ☐ Terrace | | ☐ Garminoid | ☐ Stream |
| | ☐ | ☐ Valley Slope | | ☐ Forb | ☐ Marsh |
| | ☐ | ☒ Tableland | | ☒ Deciduous | ☒ Swamp |
| | | ☐ Roll Upland | | ☐ Coniferous | ☐ Fen |
| | | ☐ | | ☐ Mixed | ☐ Bog |
| Site | | | | ☐ | ☐ Meadcow |
| ☐ Open Water | | | | | ☐ Thicket |
| ☐ Shallow Water | | | | | ☐ Savannah |
| ☒ Overburden | | | | | ☐ Woodland |
| ☐ Bedrock | | | | | ☐ Forest |
| | | | | | ☐ Plantation |
| | | | | | ☐ |

**Stand Description**

| Layer | Height | Cover | Species Composition |
|---|---|---|---|
| 1 Canopy | 2-3 | 4 | Gr. Ash dominant |
| 2 Sub-canopy | - | - | |
| 3 Understorey | 4 | 1 | a few young ash |
| 4 Ground Cover | | 2 | |
| Stand Composition: | | | BA: |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Size Class | O | <10 | A | 10 - 24 | O | 25 - 50 | N | >50 |
| Standing Snags | N | <10 | R | 10 - 24 | N | 25 - 50 | N | >50 |
| Deaddfall/Logs | N | <10 | N | 10 - 24 | N | 25 - 50 | N | >50 |

(N = None, R = Rare, O = Occasional, A = Abundant)

| Community Age | | Pioneer | | Young | | Mid-aged | | Mature | | Old Growth |
|---|---|---|---|---|---|---|---|---|---|---|

**Soil Analysis**

| | | | |
|---|---|---|---|
| Texture: | Sand | Depth to Mottles: | 20 | Depth to Gley: | > 1 m |
| Moisture: | M/D | Depth of Organic Layer: | N/A | | |
| Homogeneity: | | Depth to Bedrock: | > 1 m | | |

**Community Classification**

| | |
|---|---|
| Class: | Code: |
| Series: | Code: |
| Ecosite: | Code: |
| Veg Type: Gr. Ash Depth, Swamp | Code: SWD2-2 |
| Notes: v. small area | |

| Community Classification | Site: Long Point Rd. | Polygon: J |
|---|---|---|
| | Date: 19 June 2017 | |
| | North: [illegible] | |
| | East: 17 [illegible] | |

**Polygon Description**

| System | Substrate | Topo Feature | History | Plant Form | Community |
|---|---|---|---|---|---|
| ☐ Terrestrial | ☐ Organic Soil | ☐ Lacustrine | ☒ Natural | ☐ Plankton | ☐ Lake |
| ☒ Wetland | ☒ Mineral Soil | ☐ Riverine | ☐ Cultural | ☐ Submerged | ☐ Pond |
| ☐ Aquatic | ☐ Mineral Parent | ☐ Bottomland | ☐ | ☐ Floating | ☐ River |
| | ☐ Bedrock | ☐ Terrace | | ☐ Garminoid | ☐ Stream |
| | ☐ | ☐ Valley Slope | | ☐ Forb | ☐ Marsh |
| | ☐ | ☒ Tableland | | ☒ Deciduous | ☒ Swamp |
| | | ☐ Roll Upland | | ☐ Coniferous | ☐ Fen |
| | | ☐ | | ☐ Mixed | ☐ Bog |
| Site | | | | ☐ | ☐ Meadcow |
| ☐ Open Water | | | | | ☐ Thicket |
| ☐ Shallow Water | | | | | ☐ Savannah |
| ☒ Overburden | | | | | ☐ Woodland |
| ☐ Bedrock | | | | | ☐ Forest |
| | | | | | ☐ Plantation |
| | | | | | ☐ |

**Stand Description**

| Layer | Height | Cover | Species Composition |
|---|---|---|---|
| 1 Canopy | 2/3 | 4 | Gr. Ash > Aspen |
| 2 Sub-canopy | | | |
| 3 Understorey | 4 | 2 | Gr. Ash > willows > EBA |
| 4 Ground Cover | | 1 | see note |
| Stand Composition: | | | BA: |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Size Class | A | <10 | A | 10 - 24 | O | 25 - 50 | N | >50 |
| Standing Snags | N | <10 | N | 10 - 24 | A | 25 - 50 | N | >50 |
| Deaddfall/Logs | N | <10 | N | 10 - 24 | N | 25 - 50 | N | >50 |

(N = None, R = Rare, O = Occasional, A = Abundant)

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Community Age | | Pioneer | ✓ | Young | | Mid-aged | | Mature | | Old Growth |

**Soil Analysis**

| | | | |
|---|---|---|---|
| Texture: | Sand | Depth to Mottles: | 20 | Depth to Gley: | NA |
| Moisture: | Std | Depth of Organic Layer: | ~5 cm | | |
| Homogeneity: | | Depth to Bedrock: | NA | | |

**Community Classification**

| | |
|---|---|
| Class: | Code: |
| Series: | Code: |
| Ecosite: | Code: |
| Veg Type: Green Ash Mineral Grad. Swamp | Code: SWG2-2 |

Notes:

large rocks ~ 30cm logs - discontinued augering
Auger + Evit on perimeter.

| Community Classification | Site: Long Point Rd. | Polygon: K |
|---|---|---|
| | Date: 19 June 2017 | |
| | North: 4930611 | |
| | East: 556175 | |

## Polygon Description

| System | Substrate | Topo Feature | History | Plant Form | Community |
|---|---|---|---|---|---|
| ☐ Terrestrial | ☐ Organic Soil | ☐ Lacustrine | ☒ Natural | ☐ Plankton | ☐ Lake |
| ☒ Wetland | ☒ Mineral Soil | ☐ Riverine | ☐ Cultural | ☐ Submerged | ☐ Pond |
| ☐ Aquatic | ☐ Mineral Parent | ☐ Bottomland | ☐ | ☐ Floating | ☐ River |
| | ☐ Bedrock | ☐ Terrace | | ☐ Garminoid | ☐ Stream |
| | ☐ | ☐ Valley Slope | | ☐ Forb | ☐ Marsh |
| | ☐ | ☒ Tableland | | ☒ Deciduous | ☒ Swamp |
| | | ☐ Roll Upland | | ☐ Coniferous | ☐ Fen |
| | | ☐ | | ☐ Mixed | ☐ Bog |
| Site | | | | ☐ | ☐ Meadcow |
| ☐ Open Water | | | | | ☐ Thicket |
| ☐ Shallow Water | | | | | ☐ Savannah |
| ☒ Overburden | | | | | ☐ Woodland |
| ☐ Bedrock | | | | | ☐ Forest |
| | | | | | ☐ Plantation |
| | | | | | ☐ |

## Stand Description

| Layer | Height | Cover | Species Composition |
|---|---|---|---|
| 1 Canopy | 2/3 | 4 | Gr. Ash > Tr. Aspen = |
| 2 Sub-canopy | — | — | |
| 3 Understorey | 1 | 3 | Ash > Rod > Willow sp. |
| 4 Ground Cover | 5/6 | 1 | see Notes |

| Stand Composition: | BA: |
|---|---|
| | |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Size Class | A | <10 | A | 10 - 24 | O | 25 - 50 | N | >50 |
| Standing Snags | N | <10 | N | 10 - 24 | N | 25 - 50 | N | >50 |
| Deaddfall/Logs | N | <10 | N | 10 - 24 | N | 25 - 50 | N | >50 |

(N = None, R = Rare, O = Occasional, A = Abundant)

| Community Age | | Pioneer | | Young | | Mid-aged | | Mature | | Old Growth |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | ✓ | | | | | | | |

## Soil Analysis

| | | |
|---|---|---|
| Texture: Sand | Depth to Mottles: 25-30 | Depth to Gley: >1 m |
| Moisture: S | Depth of Organic Layer: NA | |
| Homogeneity: | Depth to Bedrock: >1 m | |

## Community Classification

| | |
|---|---|
| Class: | Code: |
| Series: | Code: |
| Ecosite: | Code: |
| Veg Type: Gr Ash Mineral Acid. Swamp | Code: SWB2-2 |

Notes:

ground least ~65 cm logs

| Community Classification | Site: Long Point | Polygon: L |
|---|---|---|
| | Date: 19 June 2017 | |
| | North: 4830406 | |
| | East: 556155 | |

## Polygon Description

| System | Substrate | Topo Feature | History | Plant Form | Community |
|---|---|---|---|---|---|
| ☐ Terrestrial | ☐ Organic Soil | ☐ Lacustrine | ☒ Natural | ☐ Plankton | ☐ Lake |
| ☒ Wetland | ☒ Mineral Soil | ☐ Riverine | ☐ Cultural | ☐ Submerged | ☐ Pond |
| ☐ Aquatic | ☐ Mineral Parent | ☐ Bottomland | ☐ | ☐ Floating | ☐ River |
| | ☐ Bedrock | ☐ Terrace | | ☐ Garminoid | ☐ Stream ? |
| | ☐ | ☐ Valley Slope | | ☐ Forb | ☒ Marsh |
| | ☐ | ☒ Tableland | | ☒ Deciduous | ☐ Swamp |
| | | ☐ Roll Upland | | ☐ Coniferous | ☐ Fen |
| | | ☐ | | ☐ Mixed | ☐ Bog |
| Site | | | | ☐ | ☐ Meadow |
| ☐ Open Water | | | | | ☐ Thicket |
| ☐ Shallow Water | | | | | ☐ Savannah |
| ☒ Overburden | | | | | ☑ Woodland |
| ☐ Bedrock | | | | | ☐ Forest |
| | | | | | ☐ Plantation |
| | | | | | ☐ |

## Stand Description

| Layer | Height | Cover | Species Composition |
|---|---|---|---|
| 1 Canopy | | | |
| 2 Sub-canopy | | | |
| 3 Understorey | | | |
| 4 Ground Cover | | 4 | see notes |

| Stand Composition: | BA: |
|---|---|
| | |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Size Class | | <10 | | 10 - 24 | | 25 - 50 | | >50 | } N |
| Standing Snags | | <10 | | 10 - 24 | | 25 - 50 | | >50 | |
| Dead-fall/Logs | | <10 | | 10 - 24 | | 25 - 50 | | >50 | |

(*N* = None, *R* = Rare, *O* = Occasional, *A* = Abundant)

| Community Age | ✓ Pioneer | | Young | | Mid-aged | | Mature | | Old Growth |
|---|---|---|---|---|---|---|---|---|---|

## Soil Analysis

| | | |
|---|---|---|
| Texture: Sand | Depth to Mottles: 25/50 | Depth to Gley: > 120 |
| Moisture: | Depth of Organic Layer: NA | |
| Homogeneity: H | Depth to Bedrock: > 120 | |

## Community Classification

| | |
|---|---|
| Class: | Code: |
| Series: | Code: |
| Ecosite: | Code: |
| Veg Type: Mineral Meadow Marsh | Code: MAMM |

Notes:

- appears to be former drainage feature
- cobble/gravel encountered close to surface in a few pits
- full shade from adjacent trees