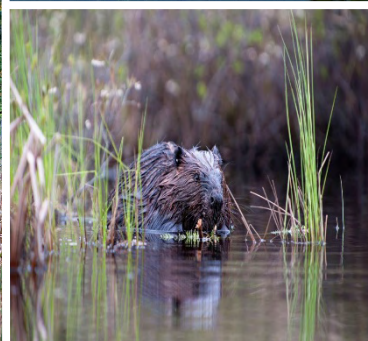




Environmental Impact Assessment

45 Bishop Street
Lakefield
Township of Selwyn
County of Peterborough

Veranda Property Investment





Executive Summary

GHD was retained by Veranda Property Investment to complete an EIA for a proposed 11 lot subdivision within the Township of Selwyn, Peterborough County. Several guiding policies were applicable in this project including the migratory birds Convention Act, Endangered Species Act, Provincial Policy Statement (2020), Growth Plan for the Greater Golden Horseshoe (2019), County of Peterborough Official Plan (2020) and ORCA and Ontario Regulation (167/06).

The main focus of the EIA report was to confirm the extent of any Natural Features (i.e. wetlands, watercourses etc.), assess the ecological functions, determine if Species at Risk are present and develop appropriate buffers and mitigation measures to prevent/minimize impacts on the development and construction of these features.

GHD biologists attended the site on June 2nd and June 12th, 2020 to undertake two breeding bird surveys and to document vegetation, classify ELC and assess the wetland and watercourse. After compiling the data collected GHD identified no provincial or federal Species at Risk were noted. Four regionally significant plant species were identified which GHD identified as non-native and species now common to the Peterborough area since the rare species list was generated (1999). Additionally, no sensitive vegetative communities were found.

No bird species detected were considered significant on a national or provincial level (COSSARO, 2018; COSEWIC, 2019). One area sensitive bird species was identified during Breeding Bird surveys, scarlet tanager. This bird was likely using the adjacent lands to the south-east.

The wetland and watercourse that was identified in preliminary phases of the project was located off of property and not within 30 meters of the proposed subdivision. As the location was off property GHD could not identify its exact distance beyond 30 meters.

Based on our analysis, there will be no negative impacts on the functions of identified natural heritage features adjacent to the subject property provided the client follows recommendations outlined in Sections 5 and 7. GHD's recommendations have been made to address potential impacts to natural heritage features and/or their functions.



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1. Introduction

1.1 Background

GHD has been asked to prepare an Environmental Impact Assessment for a proposed draft plan of subdivision in the Town of Lakefield. The development will include a servicing, townhouse and semi-detached units and a road connection to Bishop Street. A pre-consultation meeting was held at the County of Peterborough with the proponent, ORCA, Township of Selwyn and Curve Lake First Nation on January 13, 2019.

For the EIA the key issues discussed were:

Environmental Impact Analysis: review impacts, if any, on the wetland and stream located to the east and south of the subject site. The boundary of the wetland to be confirmed to ensure 30 metre setback from the wetland is achieved. ORCA noted that updated floodplain mapping for Lakefield is expected to be released in March.

1.2 Location and Study Area

The property is located at 45 Bishop Street within the Town of Lakefield, Township of Selwyn, County of Peterborough. The subject property is in the south end of Lakefield. The landscape is primarily residential with some vacant lands consisting of open fields to the east and south of the property a forested area along a watercourse was identified further to the south-east (Figure 1.1).

Document Name: Figure 1.1 - Natural Features, Vegetation Communities, and Surveys



1.3 Study Rationale

This section identifies federal, provincial, and other regulatory legislation, policies, official plans (OP) and OP amendments that are applicable and relevant to the study area and the immediate vicinity. This includes policies that triggered the study. These documents may identify natural features, Species at Risk and other habitat as well as other features relevant to this study.

1.3.1 Federal Legislation

Migratory Birds Convention Act

The purpose of the Migratory Birds Convention Act (MBCA 1994) is to implement the Convention by protecting and conserving migratory birds — as populations and individual birds — and their nests.

No work is permitted to proceed that would result in the destruction of active nests (i.e., nests with eggs or young birds), or the wounding or killing of bird species protected under the MBCA and/or Regulations under that Act.

Fisheries Act

The purpose of the Fisheries Act, Fish and Fish Habitat Program is to help conserve and protect fisheries and aquatic ecosystems. Specifically, the fish and fish habitat protection provisions are intended to prevent projects taking place in and around fish habitat from causing the death of fish or the harmful alteration, disruption or destruction of fish habitat. In addition, the Act administers relevant provision of the Species at Risk Act.

If death of fish or the harmful alteration, disruption or destruction of fish habitat are likely to result from a project, an authorization is required from the Minister of Fisheries, Oceans and the Canadian Coast Guard as per Paragraph 34.4(2)(b) or 35(2)(b) of the *Fisheries Act Regulations*.

1.3.2 Provincial Legislation

Endangered Species Act, 2007

The Ontario Endangered Species Act (ESA 2007) serves to:

1. To identify species at risk based on the best available scientific information, including information obtained from community knowledge and aboriginal traditional knowledge.
2. To protect species that are at risk and their habitats, and to promote the recovery of species that are at risk.
3. To promote stewardship activities to assist in the protection and recovery of species that are at risk. 2007, c. 6, s. 1.

The ESA clearly defines the five classifications of species status as *extinct*, *extirpated*, *endangered*, *threatened*, or *special concern*, and provides guidelines on the process of species status determination.

Regulations made under this act include Ontario Regulation 230/08 and 242/08.



Ontario Regulation 230/08 provides the list of Species at Risk (SAR) in Ontario, which is updated regularly. This list was most recently consolidated on June 2, 2017. Species status provided in the list is assessed by an independent body, the Committee on the Status of Species at Risk in Ontario (COSSARO), based on the best-available science and Aboriginal Traditional Knowledge.

General habitat protection is afforded to all species listed as *endangered* or *threatened*. General habitat descriptions are technical, science-based documents that have been developed for some of the species that are most likely to be affected by human activity. Further information including a *Recovery Strategy* or *Management Plan* is required for each listed species, on a timeline dictated by the species status.

Provincial Policy Statement 2020

The extent of Natural Heritage features found on or adjacent to the study area have been investigated within this EIA (Figure 1) and specifically Sections 2.1.4 to 2.1.8 of the Provincial Policy Statement (2020) apply to this project.

2.1.4 Development and site alterations shall not be permitted in:

- a) *significant wetlands in Ecoregions 5E, 6E and 7E;*

2.1.5 Development and site alteration shall not be permitted in:

- a) *significant wetlands in the Canadian Shield north of Ecoregions 5E, 6E and 7E;*
- b) *significant woodlands in Ecoregions 6E and 7E (excluding islands in Lake Huron and the St. Marys River);*
- c) *significant valleylands in Ecoregions 6E and 7E (excluding islands in Lake Huron and St. Marys River)*
- d) *significant wildlife habitat;*
- e) *significant areas of natural and scientific interest;*

unless it has been demonstrated that there will be no negative impacts on the natural features or their ecological functions.

2.1.6 Development and site alteration shall not be permitted in fish habitat except in accordance with provincial and federal requirements

2.1.7 Development and site alteration shall not be permitted in habitat of endangered species and threatened species, except in accordance with provincial and federal requirements.

2.1.8 Development and site alteration shall not be permitted on adjacent lands to the natural heritage features and areas identified in policies 2.1.4, 2.1.5, and 2.1.6 unless the ecological function of the adjacent lands has been evaluated and it has been demonstrated that there will be no negative impacts on the natural features or on their ecological functions

Growth Plan for the Greater Golden Horseshoe, 2020

The Growth Plan for the Greater Golden Horseshoe, 2019 came into effect on August 28th, 2020, replacing the Growth Plan for the Greater Golden Horseshoe, 2019(OMMAH, 2019). The plan was



recently revised with some changes to the natural heritage system policies and removing the provincial NHS mapping layers.

The 2020 Growth Plan for the Greater Golden Horseshoe is a long-term plan that works with the Greenbelt Plan, the Oak Ridges Moraine Conservation Plan and the Niagara Escarpment Plan to provide a framework for growth management in the region (OMMAH, 2019)

The subject property is located within a settlement area. The Natural Heritage System (NHS) for the GPGGH 2020 excludes lands within settlement area boundaries that were approved and in effect as of July 1, 2017. As a result, the NHS-related policies of the GPGGH 2020 do not apply to the subject property. Similarly, the policies of the GPGGH 2020 relating to key hydrologic features do not apply in settlement areas.

1.3.3 Local and Other Regulatory Bodies

County of Peterborough Official Plan

The County of Peterborough sets the context for planning in the County but defers planning matters to local municipalities (in this case, the Township of Selwyn). The County of Peterborough Official Plan indicates that most of the property is designated as Low Density-Residential according to Schedule A1-1 Land Use Plan-Urban Component Lakefield.

Section 4.1 Natural Environment 4.1.3.1 discusses the requirements of an EIA as well as the distance adjacent to significant natural features that triggers the preparation of an EIA.

Potential triggers listed in Section 4.1.3.1 include:

- lands within 30m of high-water mark of watercourses (fish habitat) require an EIA;
- potential habitat for END and THR species (lands within 50m require an EIA)
- lands within 50m on identified significant wildlife habitat require an EIA

Section 4.1.3.4 discusses natural heritage features; 4.1.3.5 water resources

- development within significant wetlands and significant portions of the habitat of endangered and threatened species are prohibited (Section 4.1.3.4); however:

“Local plans may permit development and site alteration in:

- *significant woodlands south and east of the Canadian Shield;*
- *significant valleylands south and east of the Canadian Shield;*
- *significant wildlife habitat; and;*
- *significant areas of natural and scientific interest;”*
- Development and site alteration will not be permitted in fish habitat except in accordance with provincial and federal requirements.
- Development and site alteration shall not be permitted on adjacent lands to the natural heritage features and areas listed above unless the ecological function of the adjacent lands has been evaluated in accordance with an environmental impact assessment as described in



Section 4.1.3.1 and it has been determined that there will be no new negative impacts on the natural features or on their ecological functions.

- **Section 6.2.3.1 – General principles** – Lakefield is a recognized growth centre – where it is intended that the majority of future residential growth be directed. Specific policies are contained in Section 6.3 of the County's OP.

Otonabee Region Conservation Authority Regulations and Policies

The Conservation Authority whose jurisdiction the study area falls under is the Otonabee Region Conservation Authority (ORCA). Under the Conservation Authorities Act, Ontario Regulations 167/06 *Development, Interference with Wetlands and Alterations to Shorelines and Watercourses* is applicable. A permit is required from ORCA for regulated areas to complete any works that are within 120 m of a Provincially Significant Wetland or within 30 m of a watercourse or waterbody.

There are three ways through which Conservation Authorities address wetlands within the regulations.

They regulate:

- activities within wetlands to ensure that they do not interfere with its natural features and hydrologic and ecological functions
- development within wetlands to ensure that it does not impact the control of flooding, erosion, dynamic beaches, pollution, or the conservation of land; and
- development adjacent to a wetland to ensure that the hydrologic function of the adjacent wetland is not affected.



1.4 Other Resources Referenced

Prior to field surveys, background information for the study area and surrounding lands from a variety of sources were reviewed to provide context for the setting and sensitivity of the site.

Background information sources include:

1.4.1 Data Sources

- Aerial imagery
- OMNRF Land Information Ontario (LIO) database mapping and Natural Heritage Information Centre (NHIC) Make a Map tool
- Ontario Breeding Bird Atlas data (Bird Studies Canada, 2007)

1.4.2 Literature and Resources

- Natural Heritage Reference Manual (MNRF, 2010)
- Significant Wildlife Habitat Criteria Schedules for Ecoregion 6E. Peterborough, 38pp. (OMNRF, 2015)

1.5 Description of Development

The proposed development is for an 11-lot draft plan of subdivision which would include servicing and residential lots. The design will include a cul-de sac with two townhouse blocks and several semi-detached units. The development encompasses the entire lot. No stormwater facility is proposed for this development.

1.6 Scope of Report

The main scope of this EIA report is: to confirm the boundaries of key natural features (e.g. the wetlands, woodlands) on the property; to confirm and identify the ecological function of any such features; to determine whether any Species at Risk and/or their habitats occur on the subject property; and, to develop appropriate buffers and mitigation measures to prevent impacts of the development on these features and their functions.



2. Study Methods

2.1 General Approach

Our approach to preparation of the EIA consisted of four distinct phases.

In the first phase, GHD collected and reviewed available information on the site including recent air photography, key natural features GIS mapping, wetland mapping, Official plan schedules and other correspondence or files available from Peterborough County, and the Ministry of Natural Resources. Records of Species at Risk for this area were derived from our GIS database.

The second phase consisted of site visits by our terrestrial and wetland biologists to confirm the data collected in the literature review and records of Species at Risk from the various sources. Surveys included field visits that encompassed breeding bird surveys, incidental wildlife, Ecological Land Classification (ELC) mapping, wetland delineation, vegetation community boundaries, and presence of significant species including Species at Risk. Aquatic assessments and review of the watercourse were conducted, where accessible.

The third phase was the preparation of the EIA that includes specific mitigation measures for protecting any sensitive species and other natural features on or adjacent to the study site and recommendations regarding the creek and wetland including buffers and setbacks.

The final phase will be a review of our draft EIA report by the Township of Selwyn, County of Peterborough, and Otonabee Region Conservation Authority (ORCA). Changes to the report will be completed prior to finalizing the report.

This report only deals with the suitability of the site from a biological perspective and the constraints due to the presence of the woodland and wetlands. Other approvals or constraints due to zoning, official plans, MDS, flood and fill regulations, health regulations or other approvals are not addressed in this report.

2.2 Site Study Methodology

2.2.1 Physical Site Characteristics

Site characteristics were assessed during our field visits. This included general documentation of existing disturbances, age of vegetation cover, accessibility, topography, watercourse form and function and other natural features.

2.2.2 Biophysical Inventory

2.2.2.1 Vegetation

ELC Survey Method

All vegetation encountered in the study area was inventoried during the site visits. Delineation and classification of the vegetation community types is based on the Ecological Land Classification for Southern Ontario (Lee et al., 1998). General notes on disturbance, topography, soil types, soil moisture and state of each community were also compiled.



Rare, significant or unusual species were searched for. Species significance or rarity on a national, provincial, regional and local level is based on published literature and standard status lists. These included SARA (2019), COSEWIC (2019), COSSARO (2018), Ontario Endangered Species Act (2007) and Oldham (1999).

2.2.2.2 Birds

Breeding Bird Survey BBS Survey

Bird surveys were conducted following the protocols of the Ontario Breeding Bird Atlas (OBBA) point count between April 15th and August 31st. All birds seen or heard within the five-minute station period were documented and breeding evidence codes recorded. Surveys were conducted in the early morning between dawn and 9 am. Survey stations were established along the woodlot edge and within field in order to adequately survey birds using all habitats in the study area. Surveys were not conducted in the large wetland or the larger woodlot areas, as the focus was on the severed parcels and the potential building envelope in the field portions.

Area Searches

In addition to Breeding Bird Point Counts, birds encountered/identified while on site were recorded along with a breeding evidence code. The area of these surveys included all the vegetation communities within the study area.

Targeted surveys for bobolink and eastern meadowlark were not completed as part of this study, however detailed notes on the location of any found during breeding bird surveys were recorded.

2.2.2.3 Other Wildlife

Incidental observations of any other wildlife (e.g., amphibians, reptiles, and mammals) encountered while surveyors were on site were recorded. Documentation included notes about the species, location and type of observation (e.g., direct sightings and indirect evidence such as calls, tracks, scat, burrows, dens and browse).

2.2.2.4 Significant Wildlife Habitat (SWH)

SWH Site Assessment

The identification of Significant Wildlife Habitat is completed in several stages. As part of the background review, natural areas in the study area are examined along with aerial photography. A candidate list of SWH criteria/feature is determined. During the field visits searches for evidence of those identified candidate features are conducted and the features assessed.

After the field inventories, NEA biologists analyze the information collected and determine which SWH features were confirmed based on the habitats on site and on the Ecological Land Classification communities present on the subject property, using the criteria for Significant Wildlife Habitat in Ecoregion 6E (2015).



2.2.2.5 Wetlands

Wetland boundaries were confirmed in the field following the methodologies in the Ontario Wetland Evaluation System Southern Manual, Third Edition (OMNR, 2013 and updates, version 3.2).

2.2.2.6 Fish and Aquatic Habitat

Aquatic habitat assessments and fish community surveys were not conducted by NEA biologists within the subject property. Due to the limited potential for impacts as there are no in-water works proposed and the availability of existing background information. Background information was obtained from the Ontario Ministry of Natural Resources (MNRF) (OMNR, 2012).



3. Survey Results

3.1 Physical Site Characteristics

3.1.1 General Site Characteristics

The subject property is approximately 1 ha. and is comprised of open field meadows, disturbed area, some cultural woodland and an old ditch on the southern limits of the property. The adjacent lands consisted of contiguous open field meadows and cultural woodland south off the property. The property was primarily flat with a slight decline towards the south.

3.2 Biological Inventories

3.2.1 Vegetation

3.2.1.1 Level of Effort

The vegetation communities were delineated within the study area by NEA biologists according to methodologies outlined in Section 2.2.2.1. A summary of the level of effort and environmental conditions have been provided in Table 3.1.

Table 3.1 Vegetation Surveys – Level of Effort

Survey Date	Survey Type	Weather	Start Time	Effort (person hrs.)
June 2, 2020	Ecological Land Classification	17°C, Cloud cover 100%, Beaufort Wind Scale 0, light rain	6:30 am	2 hrs

3.2.1.2 ELC Code Descriptions

A total of four vegetation communities were identified within the study area. Each community is described below and illustrated on Figure 3.1.

A total of 46 plant species were identified during field surveys. The dominant species in each community are described below and a complete plant list is found in Appendix I-A

Community 1 Disturbed Area (No ELC Code Applicable)

This community comprised of the roadside edge and driveway and consisted of mostly eastern white cedar (*Thuja occidentalis*) and balsam fir (*Abies balsamea*). Prickly ash (*Zanthoxylum americanum*) and green ash (*Fraxinus pennsylvanica*) dominated the understory with star-flowered Solomon seal (*Maianthemum stellatum*) as the dominant ground cover, alongside Pennsylvania sedge (*Carex pansylvanica*), Canada mayflower (*Maianthemum canadense*), zig-zag goldenrod (*Solidago flexicaulis*), western poison ivy (*Toxicodendron rydbergii*), graceful sedge (*Carex gracillima*) and eastern bracken fern (*Pteridium aquilinum*).



Photo 1: Community 1 (Photo date: June 2, 2020)

Community 2 Cultural Field Meadow (ELC Code: CUM1-1)

Community 2 consisted of most of the property and was primarily dominated in cow vetch (*Vicia cracca*). The early successional community contained other ground species such as Kentucky blue grass (*Poa pratensis*), coltsfoot (*Tussilago farfara*), sulfer cinquefoil (*Potentilla recta*), swallow-wort (*Cynanchum rossicum*), red clover (*Trifolium pratense*). The community was mostly flat with a slight decline to the south.



Photo 2: Community 2 (Photo date: June 2, 2020)

Community 3 Dry-fresh White Ash Deciduous (ELC Code: FOD4-2)

Community 3 was identified mostly around the perimeter of the property encompassing a more wooded edge than the remainder of the property. The plant diversity here was low and contained a lot of garden escapes and plants of the non-native variety. Manitoba maple (*Acer negundo*) dominated the canopy cover with Tartarian honey suckle (*Lonicera tatarica*) in the understory. The dominant ground cover was the invasive species garlic mustard (*Allaria petiolata*) and goldenrod species (*Solidago ssp*).



Photo 3: Community 3 (Photo date: June 2, 2020)

Community 4 Old Ditch (No ELC Code Applicable)

Community 4 was identified along the southern boundary of the property. The ditch ran linearly along the lot line and likely contained water at some point in the past. Since then the ditch had been overgrown in upland vegetation and no water or evidence thereof was identified here. Lilac (*Syringa vulgaris*) was the dominant shrub species that lined the edge of the ditch, with western poison ivy and hedge bedstraw (*Gallium mollugo*) dominating the ground cover.



Photo 4: Community 4 (Photo date: June 2, 2020)



3.2.2 Birds

3.2.2.1 Level of Effort

Surveys for breeding birds were conducted in the study area by GHD biologists according to the methodologies outlined in Section 2.2.2.2. A summary of the level of effort and environmental conditions at the time of survey have been provided in Table 2. Reference to table

Table 3.2 Bird Surveys – Level of Effort

Survey Date	Survey Type	Weather	Start Time	Effort (person hrs.)
June 2, 2020	Breeding Bird Survey	18°C, Cloud cover 100%, Beaufort Wind Scale 1, showers	6:30am	0.25 hours
June 12, 2020	Breeding Bird Survey	12°C, Cloud cover 0%, Beaufort Wind Scale 3, no precipitation	6:27am	0.25 hours

3.2.2.2 Breeding Bird Surveys

A total of 23 bird species were detected on or near the property during breeding bird surveys on June 2, and June 12th, 2020 (Appendix II-A).

Among the species detected were birds that are associated with open woodland and edge environments, such as: mourning dove (*Zenaidura macroura*), common grackle (*Quiscalus quiscula*), American robin (*Turdus migratorius*), and brown-headed cowbird (*Molothrus ater*). Species associated with mid-age to mature forest and swamp environments were also heard, including, red-eyed vireo (*Vireo olivaceus*), warbling vireo (*Vireo gilvus*), common yellowthroat (*Geothlypis trichas*) and scarlet tanager (*Piranga olivacea*). Breeding Bird Stations are shown on Figure 1.1

3.2.2.3 Other Wildlife

Only one small mammal was identified during field surveys, Eastern chipmunk (*Tamias striatus*). No amphibians or reptiles or any other mammals were identified during field visits.

3.2.3 Significant Wildlife Habitat

During our review of candidate significant wildlife habitat, the following were identified as potentially present within the study area: amphibian breeding habitat (woodland).

3.2.3.1 Wetlands

No wetland communities were identified on the subject property. A wetland had been identified in the preliminary scoping of the project off property to the south-east. Permission to access the adjacent lot to the south was not granted therefore GHD could not confirm the presence of the wetland, however GHD did not identify any wetland habitats within a 30 meter radius of the property boundary during field surveys. Based on preliminary findings from a mapping perspective the wetland appeared to be approximately 70 meters from the subject property.



3.2.4 Fish and Aquatic Habitat

An unnamed tributary of the Otonabee River was located approximately 100m southeast of the subject property (Figure 4.1). The tributary will here on be referred to as watercourse. Aquatic habitat assessments and fish community surveys were not completed by GHD biologists. Please refer to Section 4.1.5 for existing background information. Place figure here (before the figure title)

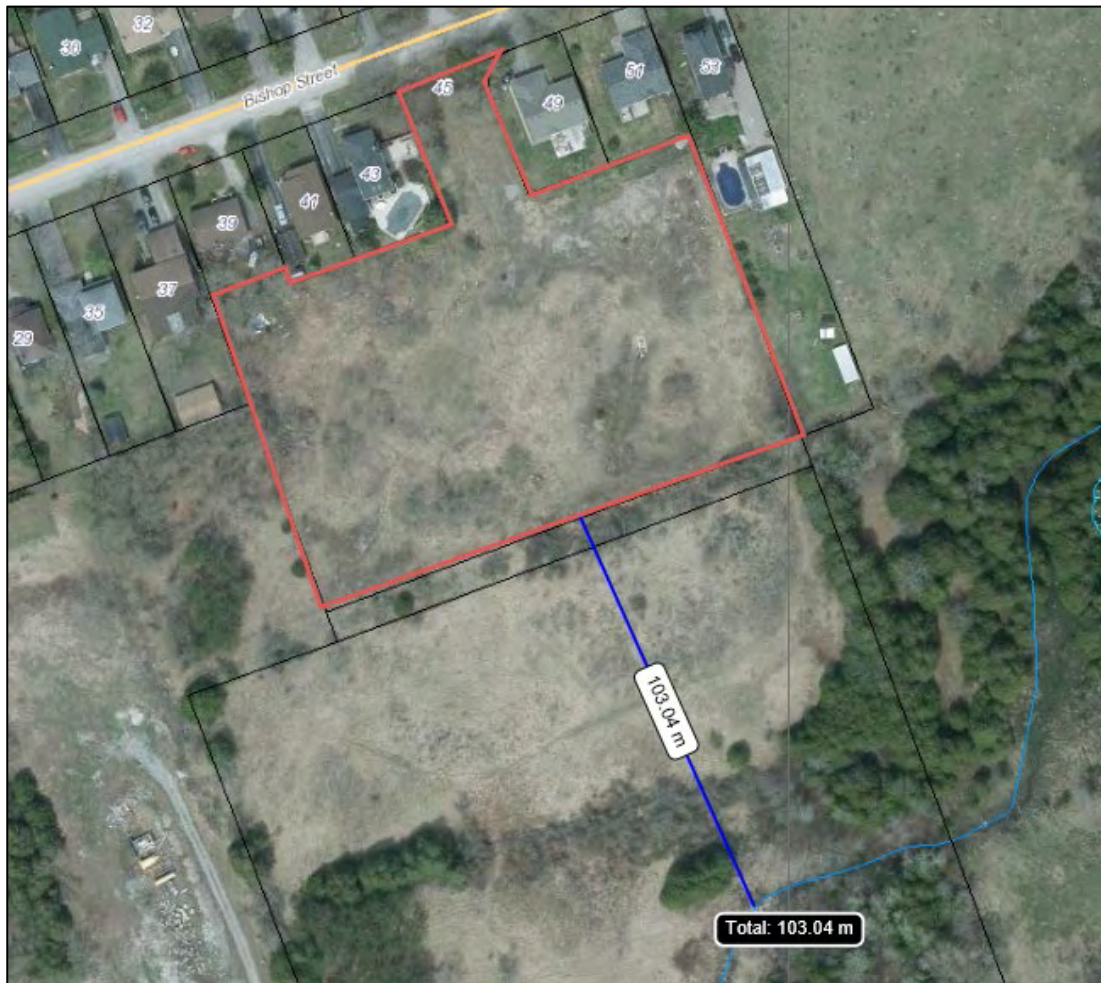


Figure 4.1 Subject Property Subject Property (outlined in red) and southern watercourse. (Imagery taken from County of Peterborough-Public GIS)
(Peterborough County, 2020).



4. Discussion and Analysis

4.1 Species and Communities

4.1.1 Vegetation

No provincially or federally significant species were identified on the subject property (COSEWIC, 2019; COSSARO, 2018). Four regionally rare species were documented on the study property and included European larch (*Larix decidua*), black walnut (*Juglans nigra*), garlic mustard (*Allaria petiolate*) and Norway maple (*Acer platanoides*) (Appendix I-B). Norway maple, European Larch and garlic mustard are all of non-native variety and therefore GHD would not consider these to be rare or worthy of preservation.

Black walnut is a common tree identified throughout the Peterborough area, since this rare species list was generated in 1999 GHD would not consider this species rare for the area. Additionally, none of the ecological community types identified on the property are considered provincially rare (MNRF, 2015).

4.1.2 Birds

No provincially or federally (COSSARO, 2018, COSEWIC, 2019) significant bird species were identified during GHD surveys (Appendix II-B).

Area sensitive species are bird species that require a minimum hectareage of suitable contiguous habitat to successfully breed. One of the bird species observed during NEA surveys fell into this category, the Scarlet Tanager (*Piranga olivacea*) (Appendix II). The scarlet tanagers breed in mature deciduous forests and mixed deciduous-coniferous forests, where they prefer oak, pine, beech and hemlock dominated forests. Cultural woodland was the only tree dominated area on the subject property therefore no suitable habitat exists on the subject property. It is likely this bird was heard signing from the woodland to the south-east of the subject property.

The NHIC square the overlaps the property (17QK1772) identified Species at Risk in the general area and included eastern meadowlark and eastern wood-pewee. However, no suitable habitat or these species was identified on the subject property.

The Ontario Breeding Bird Atlas (OBBA) records for the 10 km by 10km square that overlaps the property (17QK12) included 20 bird species that listed nationally or provincially as species at risk (COSSARO 2018; SARA 2020; COSEWIC 2019). These records were of, least bittern (*Ixobrychus exilis*), black tern (*Chlidonias niger*), common nighthawk (*Chordeiles minor*), whip-poor-will (*Antrostomus vociferus*), chimney swift (*Chaetura pelagica*), red-headed woodpecker (*Melanerpes erythrocephalus*), olive-sided flycatcher (*Contopus cooperi*) eastern wood-pewee (*Contopus virens*), loggerhead shrike (*Lanius ludovicianus*), bank swallow (*Riparia riparia*), barn swallow (*Hirundo rustica*), wood thrush (*Hylocichla mustelina*), golden-winged warbler (*Vermivora chrysoptera*), cerulean warbler (*Setophaga cerulea*), Canada warbler (*Cardellina canadensis*), grasshopper sparrow (*Ammodramus savannarum*), bobolink (*Dolichonyx oryzivorus*), eastern meadowlark (*Sturnella magna*) and evening grosbeak (*Coccothraustes vespertinus*). Many of these records are likely from the greater study area surrounding the property. There was no suitable habitat for any of these species on the subject property.



4.1.3 Other Wildlife

No other federal or provincial species at risk were recorded on the subject property during the site visit (SARA 2020; COSEWIC 2019; COSEWIC, 2018).

4.1.4 Significant Wildlife Habitat

Significant wildlife habitat often occurs within other natural heritage features and areas covered by Policy 2.1 of the Provincial Policy statement (e.g., significant wetlands). Therefore, it has been suggested that identification and evaluation of significant wildlife habitat is best undertaken after other natural heritage features have been identified (Natural Heritage Reference Manual, 2010). GHD biologists analyzed the information collected from the ecological communities on the subject property using the criteria for Significant Wildlife Habitat in Ecoregion 6E (2015) and found no SWH were confirmed as being on the subject property.

Specialized Wildlife Habitat Criteria	Candidate and Confirmed Habitat Criteria	Found-Yes	Found-No
Amphibian breeding habitat (woodland)	-Presence of a wetland, pond or woodland pool (including vernal pools)>500m ² (about 25 m diameter) within or adjacent to a woodland (no minimum size) -presence of breeding populations of 1 or more of the listed newt/salamander species or 2 or more of the listed frog species with at least 20 individuals		No wetland habitat identified on or within 30 meters of the subject property
Special Concern & Rare Wildlife Species	-Special Concern and Provincially rare (S1-S3, SH) plant and animal species		No Special concern Species identified

4.1.5 Fish and Aquatic Habitat

A watercourse is located approximately 100m southeast of the subject properties most southern extent (Figure 4.1). The watercourse flows through two small non evaluated wetland pockets east of the subject property, and continues in a southwest south of the subject property and along County Road 33. It appears the watercourse outlets into the Otonabee River (Peterborough County, 2020).

The watercourse has the potential to provide indirect and direct fish habitat downstream to the Otonabee River. Specifically, the habitat has the potential to provide hydrological connections, cover and feeding habitat, nutrients and sediments, and food supply to fish species. These attributes are important for the sustainability of the watercourse and Otonabee River fish community. Fish habitat in Ontario is managed federally by the Minister of Fisheries and Oceans Canada and therefore, the Fisheries Act applies to the watercourse located south of the subject property.

Existing fish community data was not present for the watercourse located southeast of the subject property. However the downstream fish community of the Otonabee River, cumulatively, 20 fish species have been documented in the Otonabee River. The fish community present represents a



mix of cool and warm water fish species and is represented by the following families; *Atherinopsidae*, *Catostomidae*, *Centrarchidae*, *Cottidae*, *Cyprinidae*, *Esocidae* *Ictaluridae* and *Percidae* (OMNR, 2012; OMNRF, 2019)

The literature review found no provincially and/or nationally rare aquatic species documented within the study area (COSEWIC, 2019; COSSARO, 2018). No sensitive spawning areas (OMNR, 2012) or aquatic Species at Risk were documented (DFO, 2019) within or adjacent to the study area.



5. Impact Assessment and Recommendations

The following section provides a description of the predicted impacts that may result from the proposed development. It also identifies mitigation measures to be implemented to avoid and/or minimize adverse effects to the natural environment features within or near the project.

The subject property did not contain any natural features therefore the impacts below will be described in more general terms.

5.1.1 Vegetation

The property overall was quite urbanized and contained a high abundance of non-native plants and trees. The proposed subdivision would require complete removal of all vegetation on the subject property to accommodate the lots and housing proposed. The removal of vegetation off the property would not affect the overall diversity of the area. The property contains little value in terms of diversity across the landscape due to the high abundance of non-native and invasive species. The more established vegetation was the Manitoba maple stand (community 3) which provided some cover for wildlife for small mammals. The higher quality habitats however were identified south-east of the subject property and outside of the study area.

5.1.2 Wildlife Corridors/ Connectivity

The local corridor for wildlife use was located just south-east of the subject property. The corridor ran along the watercourse and was identified as providing a north-east to south-west connection. The corridor continued north-east, beyond the limits of the Town of Lakefield. However, ended at the Otonabee River and SGS Mineral Plant. This corridor would provide wildlife connections for small and medium sized mammals across the landscape. The subject property was located just outside of this GHD identified corridor. The development of the subject property will not affect the wildlife movement across the landscape. The wildlife will continue to utilize the lands to the south and east post construction.

5.1.3 Fish and Aquatic Habitat

The watercourse located southeast of the subject property is assumed to outlet into the Otonabee River, therefore likely providing direct and indirect fish habitat downstream. The natural feature form and function of the watercourse will be protected as the watercourse is located approximately 100 m from the proposed development (Figure 4.1). The proposed works do not require a Stormwater Management Facility (SWM) and will comply with the PSS and Fisheries Act.

No significant impacts to fish or fish habitat are anticipated from the proposed development if the mitigation measures and recommendations are implemented as outlined in this report.

A number of recommendations have been provided in Section 7.0 to prevent negative impacts during construction. Should the project scope change to include any sort of SWM facility, consult with a professional biologist. The Otonabee Region Conservation Authority (ORCA) and the Department of Fisheries and Oceans (DFO) shall also review the project. Additional permitting and field work may be required by agencies.



6. Policies and Legislative Compliance

The following section describes how the proposed development will be in conformance with the relevant federal, provincial and other regulatory legislation, policies, official plans and OP amendments that are applicable and relevant to the study area and the immediate vicinity.

6.1.1 Federal Legislation

Migratory Birds Convention Act

The core breeding period in Ontario for migratory birds under the MBCA for Bird Conservation Region 13 (i.e., the one the subject property lies within) extends from April 15th to August 15th (Environment and Climate Change Canada, 2014). As such clearing of the trees and other vegetation for the development cannot occur during this timing window.

Fisheries Act

The project will comply with the Fisheries Act protective provisions of the Fisheries Act by implementing the *DFO Measures to Protect Fish and Fish Habitat* and avoiding all work in and around water. All project undertaking will: prevent the death of fish, maintain riparian vegetation, carry out work on land only, maintain fish passage, ensuring property sediment control, and preventing entry of deleterious substances in water.

6.1.2 Provincial Legislation

Endangered Species Act (ESA)

No Endangered or Threatened species or their habitats were identified during field surveys therefore the proposed development is in compliance with the ESA.

Provincial Policy Statement 2020

The subject property contained no Provincially Significant wetlands, designated woodlands or significant wildlife habitat. The adjacent lands however contained a watercourse therefore Section 2.1.6 of the PPS apply. Section 5.1 of this report, contains recommendations that allow the proposed development to proceed in a manner consistent with these sections of the Provincial Policy Statement (PPS). Additionally the subject property does not contain coastal wetlands, valleylands or ANSI's.

Growth Plan for the Greater Golden Horseshoe 2019

The subject property is located within a settlement area. The Natural Heritage System (NHS) for the GPGGH 2019 excludes lands within settlement area boundaries that were approved and in effect as of July 1, 2017. As a result, the NHS-related policies of the GPGGH 2019 do not apply to the subject property. Similarly, the policies of the GPGGH 2019 relating to key hydrologic features do not apply in settlement areas. The proposed subdivision is in compliance with the Growth Plan.



6.1.3 Local and Other Regulatory Bodies

County of Peterborough Official Plan (Consolidated to March 2020)

This EIS has been prepared in accordance with direction provided in the County of Peterborough Official Plan for such studies (i.e., Section 4.1.3.1 General). This EIS is in compliance with the County of Peterborough Official Plan as it demonstrates: a) no development has been proposed in provincially significant wetlands and there will be no negative impacts on other natural features or ecological functions for which the area is identified as long as the recommendations and mitigation measures outlined in Section 7.0 are implemented.

Otonabee Region Conservation Authority (ORCA) and Ontario Regulation 167/06

The proposed development is in compliance with the ORCA and Ontario Regulation 167/06. No development will occur within the wetlands or watercourse as they are greater than 30 m from the subject property.

7. Summary of Recommendations

7.1 General

1. The development limit (construction envelope) must be clearly defined and delineated and a line be staked and clearly marked in the field prior to any development activities occurring on the site. Grading of the site and removal or addition of fill shall be restricted to the proposed work area.
2. Functioning erosion and sediment control measures shall be installed along the development limit prior to the commencement of any site preparation activities (e.g., grading, placement of fill). The silt fence should be inspected and maintained throughout the construction phase and remain in place until the soils are stabilized and re-vegetated. The silt fence also serves as a visual and physical barrier for construction crews.
3. Removal of vegetation within the building envelope and/or along access routes shall be done outside of the peak breeding bird season (April 15th – August 15th) as per Environment and Climate Change Canada's guidelines.
4. Where feasible, native trees, shrubs, grasses and/or wildflower seed mixes shall be used for landscaping purposes.
5. Where applicable client to obtain relevant permits from the City of Peterborough, Township of Selwyn and Otonabee Region Conservation Authority.
6. If the development plan changes to include any stormwater management facilities a professional biologist must assess the receiving watercourse located southeast of the property. Permission must be obtained by the southeastern landowners to do so. The stormwater design shall be reviewed by a professional biologist and the Department of Fisheries and Oceans (DFO) to ensure the plan complies with the *Fisheries Act*. Additional permitting may be required by DFO and other agencies (i.e. Otonabee Region Conservation Authority).



7. Grading may cause increase erosion and sedimentation, therefore develop and implement an erosion and sediment control plan. Grading shall be limited to the development envelope. The remaining areas are to be left at natural existing grades, including buffer areas.
8. Low Impact Development (LID) practices should be used onsite to manage any storm runoff, including erosion, sedimentation and pollution from the proposed subdivision. Examples of LID techniques used rain gardens/bioretention, swale features, infiltration galleries/chambers/trenches etc.

7.2 Sediment and Erosion Control

1. The sediment and erosion (SEC) measures should be reviewed by a professional biologist.
2. All sediment and erosion control products will be selected for the site based on the manufacturer's product specifications. Biodegradable products should be selected. Product installation and maintenance will follow the manufactures guidelines.
3. Sediment control measures shall be installed prior to the commencement of work and shall be maintained throughout the project to prevent the entry/outward flow of sediment into nearby wetlands and watercourses.
4. All sediment and erosion control measures shall be inspected daily during the construction phase and periodically thereafter to ensure they are functioning properly, maintained, and upgraded as required. Accumulated silt and debris will be removed from the fence and site after every precipitation event.
5. Construction will be undertaken during normal weather conditions, to the extent possible, and will avoid large precipitation events to minimize the risk of sedimentation off-site.
6. In the event that sediment and erosion control measures are not functioning, the construction supervisor shall order the work to be stopped. No further work shall be carried out until the construction methods and/or the sediment control plan is adjusted to address the sediment/erosion problem(s). Such occurrences should be document by the site inspector and provided to a qualified biologist.
7. Disturbed soils will be immediately stabilized and re-vegetated as soon as possible with native species suitable for the site.
8. All construction materials will be removed from the site upon project completion.



8. Conclusion

GHD has prepared this Environmental Impact Assessment report to address potential environmental issues associated with this proposed subdivision. The study area is located at 45 Bishop Street, within the Town of Lakefield, County of Peterborough. Significant natural features identified in the study area included proximity to a watercourse.

The watercourse is located greater than 30 m from the subject property, if the mitigation measures listed above are implemented properly there will be no impact to this feature. If the design plan changes to include a stormwater management facility the watercourse must be assessed by a professional biologist and additional permitting may be required by DFO and other agencies.

Construction within the proposed development envelope will result in no negative impacts on the functions of identified natural heritage features provided the recommendations outlined in Sections 5 and 7 are implemented. NEA's recommendations have been made to address potential impacts to natural heritage features and/or their functions during the site preparation, construction and post-construction period.



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All of which is Respectfully Submitted,

GHD

A handwritten signature in blue ink, appearing to read "C. Ellingwood", with a long horizontal flourish extending to the right.

Chris Ellingwood
Sr. Terrestrial and Wetland Biologist

A handwritten signature in blue ink, appearing to read "Katherine Ryan", with a long horizontal flourish extending to the right.

Katherine Ryan
Terrestrial and Wetland Biologist

A handwritten signature in blue ink, appearing to read "Stacey Zwiers", with a long horizontal flourish extending to the right.

Stacey Zwiers
Aquatic Biologist



about GHD

GHD is one of the world's leading professional services companies operating in the global markets of water, energy and resources, environment, property and buildings, and transportation. We provide engineering, environmental, and construction services to private and public sector clients.

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Appendices

Appendix I-A

Plant Distribution by Community

APPENDIX I - A Plant Species by Community

Families and genera for the plant species found in this appendix are listed in taxonomic order. The species are listed alphabetically by scientific name within each genus.

Three standard reference works were used for the botanical nomenclature and taxonomy (Newmaster et. al., 1998; Gleason and Cronquist 1991; Voss 1980; 1985). Other published works for botanical names included; ferns (Cody and Britton 1989); grasses (Dore and McNeill 1980); orchids (Whiting and Catling 1986); shrubs (Soper and Heimburger 1982) and trees (Farrar 1995).

Total: Number of communities where plant species was recorded
X : Plant species recorded

Common Name	Scientific Name	Total	COMMUNITY NUMBER			
			1	2	3	4
PINE FAMILY	PINACEAE					
European larch	<i>Larix decidua</i>	1				
Norway spruce	<i>Picea abies</i>	1				
CYPRESS FAMILY	CUPRESSACEAE					
eastern red cedar	<i>Juniperus virginiana</i>	2				
eastern white cedar	<i>Thuja occidentalis</i>	1				
WALNUT FAMILY	JUGLANDACEAE					
black walnut	<i>Juglans nigra</i>	1				
BUCKWHEAT FAMILY	POLYGONACEAE					
Japanese knotweed	<i>Polygonum cuspidatum</i>	1				
MUSTARD FAMILY	BRASSICACEAE					
garlic mustard	<i>Alliaria petiolata</i>	2				
field mustard	<i>Brassica rapa</i>	1				
ROSE FAMILY	ROSACEAE					
shrubby cinquefoil	<i>Potentilla fruticosa</i>	1				
sulfur cinquefoil	<i>Potentilla recta</i>	1				
wild red raspberry	<i>Rubus idaeus</i>	1				
PEA FAMILY	FABACEAE					
black medick	<i>Medicago lupulina</i>	1				
alfalfa	<i>Medicago sativa</i> ssp. <i>Sativa</i>	1				
black locust	<i>Robinia pseudo acacia</i>	1				
red clover	<i>Trifolium pratense</i>	1				
cow vetch	<i>Vicia cracca</i>	1				
BUCKTHORN FAMILY	RHAMNACEAE					
European buckthorn	<i>Rhamnus cathartica</i>	1				

Common Name	Scientific Name	Total	COMMUNITY NUMBER			
			1	2	3	4
GRAPE FAMILY	VITACEAE					
Virginia creeper	<i>Parthenocissus inserta</i>	1				
wild grape	<i>Vitis riparia</i>	1				
MAPLE FAMILY	ACERACEAE					
Manitoba maple	<i>Acer negundo</i>	3				
Norway maple	<i>Acer platanoides</i>	2				
CASHEW FAMILY	ANACARDIACEAE					
western poison-ivy	<i>Rhus rydbergii</i>	3				
CARROT FAMILY	APIACEAE					
Queen-Anne's lace	<i>Daucus carota</i>	1				
MILKWEED FAMILY	ASCLEPIADACEAE					
common milkweed	<i>Asclepias syriaca</i>	1				
swallow-wort	<i>Cynanchum rossicum</i>	2				
BORAGE FAMILY	BORAGINACEAE					
Viper's bugloss	<i>Echium vulgare</i>	1				
MINT FAMILY	LAMIACEAE					
catnip	<i>Nepeta cataria</i>	1				
PLANTAIN FAMILY	PLANTAGINACEAE					
broad-leaved plantain	<i>Plantago major</i>	1				
OLIVE FAMILY	OLEACEAE					
lilac	<i>Syringa vulgaris</i>	3				
FIGWORT FAMILY	SCROPHULARIACEAE					
common mullein	<i>Verbascum thapsus</i>	1				
MADDER FAMILY	RUBIACEAE					
white bedstraw	<i>Galium mollugo</i>	1				
HONEYSUCKLE FAMILY	CAPRIFOLIACEAE					
tartarian honeysuckle	<i>Lonicera tatarica</i>	3				
ASTER FAMILY	ASTERACEAE					
stinking mayweed	<i>Anthemis cotula</i>	2				
common burdock	<i>Arctium minus</i>	2				
king devil hawkweed	<i>Hieracium x florbundum</i>	1				
goldenrod species	<i>Solidago spp.</i>	3				
spiny-leaved sow thistle	<i>Sonchus asper</i>	1				
common dandelion	<i>Taraxacum officinale</i>	2				
coltsfoot	<i>Tussilago farfara</i>	1				
SEDGE FAMILY	CYPERACEAE					
white beaked-rush	<i>Rhynchospora alba</i>	1				
GRASS FAMILY	POACEAE					
orchard grass	<i>Dactylis glomerata</i>	1				
Kentucky blue grass	<i>Poa pratensis</i>	3				

Common Name	Scientific Name	Total	COMMUNITY NUMBER			
			1	2	3	4
LILY FAMILY	LILIACEAE					
chives	<i>Allium schoenoprasum L. var. schoen</i>	1				
asparagus	<i>Asparagus officinalis</i>	1				
tiger lily	<i>Lilium lancifolium</i>	1				
Total Number of Plant Species	45		0	0	0	0

**Number of Plant
Species Per Community**

Community 04

ComID: 4608

ELC Code: None Applicable

Common Name	Scientific Name	Remarks
CYPRESS FAMILY	CUPRESSACEAE	
eastern red cedar	<i>Juniperus virginiana</i>	
PEA FAMILY	FABACEAE	
alfalfa	<i>Medicago sativa ssp. Sativa</i>	
CASHEW FAMILY	ANACARDIACEAE	
western poison-ivy	<i>Rhus rydbergii</i>	
MILKWEED FAMILY	ASCLEPIADACEAE	
common milkweed	<i>Asclepias syriaca</i>	
OLIVE FAMILY	OLEACEAE	
lilac	<i>Syringa vulgaris</i>	
HONEYSUCKLE FAMILY	CAPRIFOLIACEAE	
tartarian honeysuckle	<i>Lonicera tatarica</i>	

Plant Species Per Community 6**Total Number of Plant Species** 46

Appendix I-B

List of Significant Plant Species

APPENDIX I - B List of Significant Plant Species

Plant species observed by NEA with significant status on national, provincial and relevant regional lists are listed with status codes and where applicable the most current year of publication. Three standard reference works were used for the botanical nomenclature and taxonomy (Newmaster et. al., 1998; Gleason and Cronquist 1991; Voss 1980; 1985). Other published works for botanical names included; ferns (Cody and Britton 1989); grasses (Dore and McNeill 1980); orchids (Whiting and Catling 1986); shrubs (Soper and Heimburger 1982) and trees (Farrar 1995).

NATIONAL RANKING	Committee on the Status of Endangered Wildlife in Canada (COSEWIC), Government of Canada Species at Risk Act (SARA), SCHEDULE 1 (Subsections 2(1), 42(2) and 68(2)), Government of Can		
PROVINCIAL RANKING	Species at Risk in Ontario (COSSARO), Government of Ontario Provincial Rank (SRANK), Natural Heritage Information Center, Government of Ont		
REGIONAL RANKING	Peterborough	Oldham, M.J. 1999	

STATUS CODES	COSEWIC	END * - Endangered Species	*Year of Status Publication included in Code
	COSSARO	THR * - Threatened Species	
	SARA	SC * - Species of Concern	
	SRANK	S1 - Extremely Rare S2 - Very Rare S3 - Rare to Uncommon	Other national or provincial codes not listed
	Regional Lists	R - Rare native species RS -Regional significant EXP - Extirpated native species	Other Regional codes not listed

		NATIONAL RANKINGS		PROVINCIAL RANKINGS		REGIONAL RANKINGS			
Common Name	Scientific Name	COSEWIC	SARA	COSSARO	SRank	Peterbor ough			
European larch	Larix decidua					R			
black walnut	Juglans nigra					R			
garlic mustard	Alliaria petiolata					R			
Norway maple	Acer platanoides					R			

Common Name	Scientific Name		COSEWIC	SARA	COSSARO	SRank	Peterbor ough				
Plants with Ranking	Total 4	Status List Total	0	0	0		4	0	0	0	0

Appendix II Bird Status Report

APPENDIX II-B Bird Status Report - Comprehensive

Bird species observed by GHD are listed in the order followed the American Ornithologists' Union (AOU) Check-list of North American birds (7th edition, 1999, 47th Supplement). Common and scientific nomenclature are based on those used by AOU. Any significant status for a species on national and provincial lists is displayed as well as those from relevant regional lists.

List Status :	END - endangered	A wildlife species facing imminent extirpation or extinction.
	END-R -endangered regulated	A wildlife species facing imminent extirpation or extinction in Ontario which has been regulated under Ontario's Endangered Species Act (ESA).
	THR - threatened	A wildlife species likely to become endangered if limiting factors are not reversed.
	SC - special concern	A wildlife species that may become threatened or an endangered species because of a combination of biological characteristics and identified threats.
	YES - Area Sensitive	A wildlife species that requires large areas of suitable habitat in order to sustain their population numbers.
* Other status levels are not displayed		

List Sources:	COSEWIC	
	COSSARO	The Committee on the Status of Endangered Wildlife in Canada, May 2018.
	SARA	The Committee on the Status of Species at Risk in Ontario, June 2018.
	Area Sensitive	Species At Risk Act, Schedule 1, Government of Canada, 2018. Significant Wildlife Technical Guide, Appendix C, OMNR, Oct. 2000
Region 6		
Southern Ontario Wetland Evaluation Appendix 11B, Version 3.2, March 2013		

Breeding Status: (Observed By NEA)	B	-species observed in breeding season in suitable habitat with some evidence of breeding (confirmed, probable or possible as per Ontario Breeding Bird Atlas, 2002).
	F	-species observed in breeding season but no evidence of breeding or suitable nest sites available on the study site (includes flyovers, migrants and foraging colonial breeders).
	M	-species observed outside of breeding season for that species and in area outside of the known breeding range for that species.

AOU Code	Common Name	Scientific Name	COSEWIC	COSSARO	SARA	Area Sensitive	Region 6		
MODO	Mourning Dove	<i>Zenaida macroura</i>				No			
RTHU	Ruby-throated Hummingbird	<i>Archilochus colubris</i>				No			
WAVI	Warbling Vireo	<i>Vireo gilvus</i>				No			
REVI	Red-eyed Vireo	<i>Vireo olivaceus</i>				No			
BLJA	Blue Jay	<i>Cyanocitta cristata</i>				No			
AMCR	American Crow	<i>Corvus brachyrhynchos</i>				No			
CORA	Common Raven	<i>Corvus corax</i>				No			
BCCH	Black-capped Chickadee	<i>Poecile atricapillus</i>				No			
HOWR	House Wren	<i>Troglodytes aedon</i>				No			
AMRO	American Robin	<i>Turdus migratorius</i>				No			
EUST	European Starling	<i>Sturnus vulgaris</i>				No			
CEWX	Cedar Waxwing	<i>Bombycilla cedrorum</i>				No			
BWWA	Black-and-white Warbler	<i>Mniotilta varia</i>				No			
COYE	Common Yellowthroat	<i>Geothlypis trichas</i>				No			
SCTA	Scarlet Tanager	<i>Piranga olivacea</i>				Yes			
CHSP	Chipping Sparrow	<i>Spizella passerina</i>				No			
FISP	Field Sparrow	<i>Spizella pusilla</i>				No			
SOSP	Song Sparrow	<i>Melospiza melodia</i>				No			
NOCA	Northern Cardinal	<i>Cardinalis cardinalis</i>				No			
RWBL	Red-winged Blackbird	<i>Agelaius phoeniceus</i>				No			
COGR	Common Grackle	<i>Quiscalus quiscula</i>				No			
BHCO	Brown-headed Cowbird	<i>Molothrus ater</i>				No			
AMGO	American Goldfinch	<i>Carduelis tristis</i>				No			
TOTAL SPECIES OBSERVED:			0	0	0	1	0	0	0