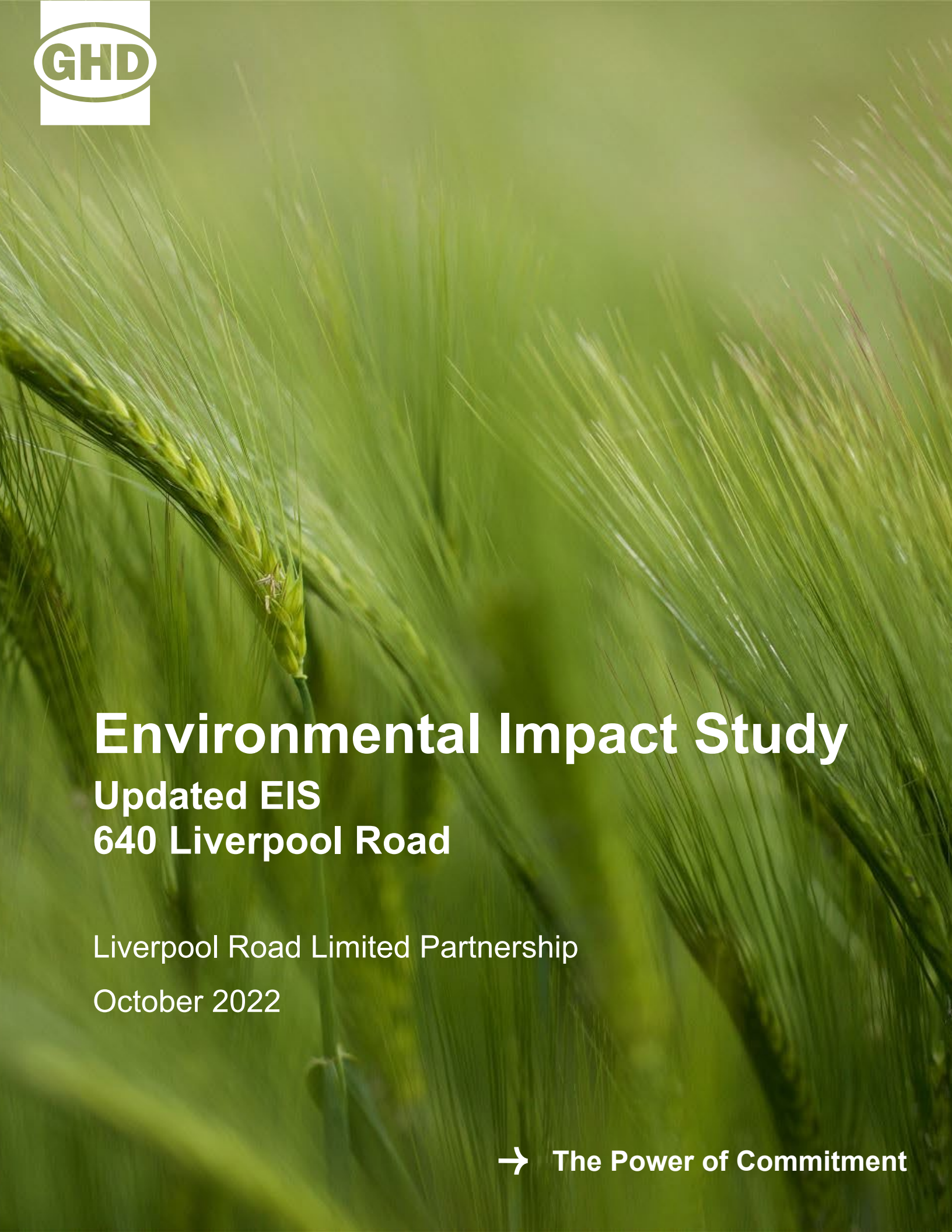

Environmental Impact Study

Updated EIS
640 Liverpool Road

Liverpool Road Limited Partnership

October 2022

The Power of Commitment

GHD
347 Pido Road, Unit 29
Peterborough, Ontario K9J 6X7, Canada
T +1 705 749 3317 | **F** +1 705 749 9248 | **ghd.com**

File name	12586332-640 Liverpool EIS-draft.docx
Author	Candice Talbot
Project manager	Chris Ellingwood
Client name	Liverpool Road Limited Partnership
Project name	640 Liverpool Road/Wharf St subdivision-EIS
Document title	Environmental Impact Study | Proposed Building Lot
Revision version	Rev 01
Project number	12586332

Document status

Revision	Author	Reviewer		Approved for issue		
		Name	Signature	Name	Signature	Date
S0	Candice Talbot, Chris Ellingwood	Chris Ellingwood		Chris Ellingwood		10/14/21
S4	Candice Talbot, Chris Ellingwood	Chris Ellingwood		Chris Ellingwood		11/18/22

Executive Summary

GHD Limited has prepared this updated Environmental Impact Study (EIS), which is required as part of the planning applications for the development of this 1.13 ha property. An EIS is required to define the developable area of the property and confirm the boundary of the natural heritage features.

The new subdivision submission will require several revisions of an existing EIS report we prepared in 2015. These revisions include: addition of properties, changes to legislation and official plans, Species at Risk lists and the environmental approaches. The original EIS had discussion and recommendations re bird window strikes that may not be relevant. At the very least additional site visits of the full study area and review of the new plans were completed

GHD (previously Niblett Environmental Associates) had completed an EIS for this site and prepared other documentation as part of a previous application that went to the OMB. This new plan has additional lands in the study area, a condominium type development vs the previous apartment block and frontage on Liverpool Road. That field data, EIS report, and other correspondence was reviewed to complete this updated EIS.

Key Natural Heritage Features on the property or within 120 meters of the property include:

– City of Pickering Heritage System
– New drafted Region of Durham Natural Heritage System mapping
– Possible habitat of threatened or endangered species (bats, chimney swift, barn swallow)
– Natural features and wildlife uses associated with Frenchman's Bay

The Study Area includes properties at 640 Liverpool Road, 1294, 1292, 1290, 1288, 1280 Wharf Street and 607, 609 Annland Street in Pickering, and have a total land area of approximately 1.13 hectares. The Study Area included seven lots occupied by existing homes, abandoned building, a parking area, and a boat storage area

The proposed development includes 51 three-storey townhouses with two parking spots for each, and 18 visitor parking spaces.

Field surveys were conducted within the study area that included breeding birds, ELC, wildlife, SWH and Species at Risk.

Development on this site and in the recommended development envelope will result in no negative impacts on the functions of identified natural features provided the mitigation measures and recommendations are implemented. GHD's recommendations have been made to address potential impacts to natural heritage features and/or their functions during the pre-construction, construction and post-construction phases.

Contents

Table index

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Appendices

1. Introduction

1.1 Background

GHD Limited has prepared this updated Environmental Impact Study (EIS), which is required as part of the supporting documentation for a planning application for the development of this 1.13 ha area. An EIS is required to define the developable area of the property and confirm the boundary of the natural heritage features.

The new subdivision submission required several revisions of an existing EIS report we prepared in 2015. These revisions include: inclusion of several additional properties, update to include current versions of applicable legislation and official plans, use of latest Species at Risk lists and the environmental approaches. The original EIS had discussion and recommendations re bird window strikes that may not be relevant. In addition, new field visits were conducted to delineate natural features and obtain current biological data.

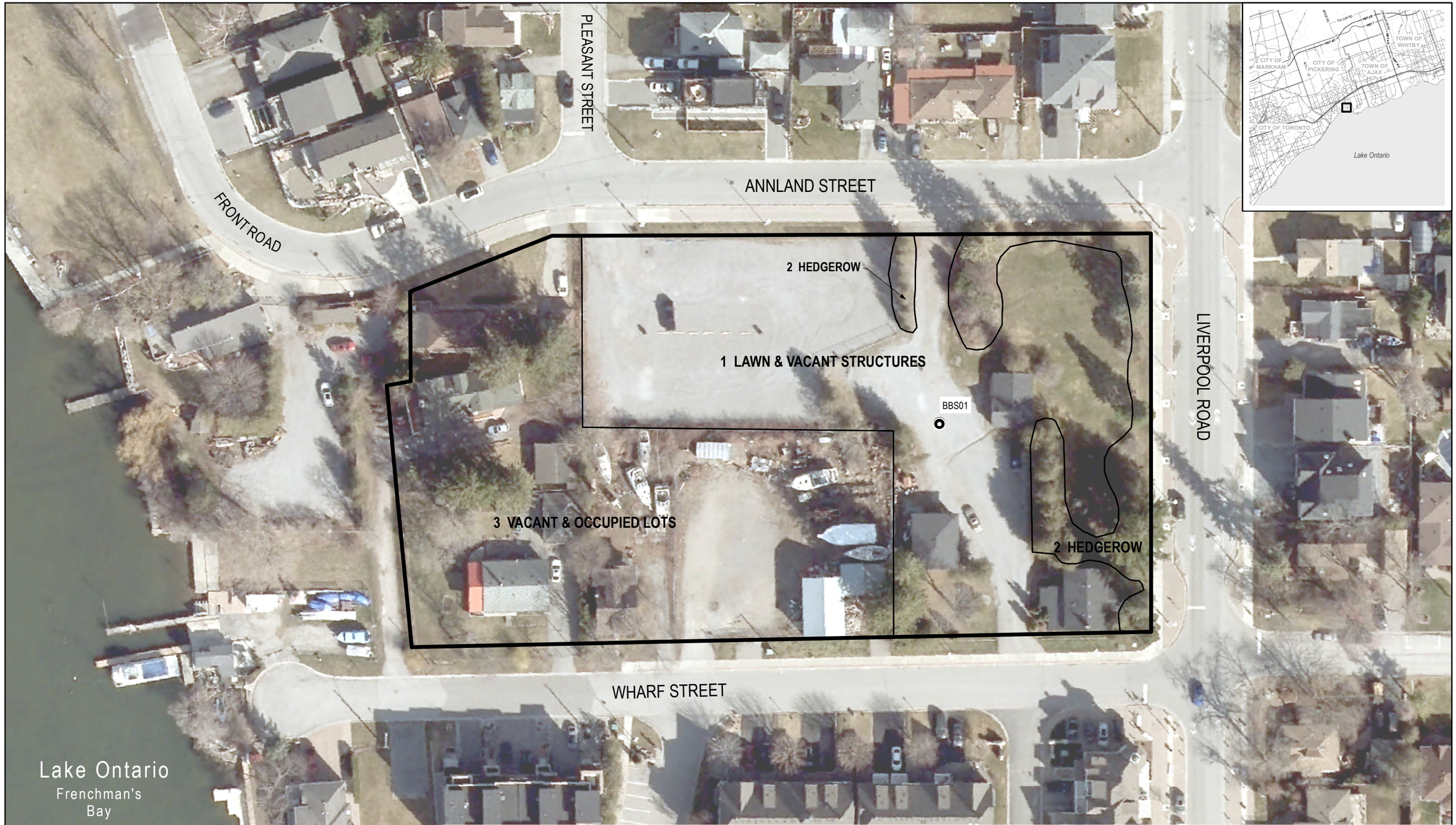
GHD (previously Niblett Environmental Associates) had completed an EIS for this site and prepared other documentation as part of a previous application. This new development plan has additional lands in the study area, a townhouse type development vs the previous condominium tower and frontage on Liverpool Road. That previous field data, EIS report, and other correspondence was reviewed to complete this updated EIS.

Key Natural Heritage Features on the property or within 120 meters of the property include:

– City of Pickering Heritage System
– New drafted Region of Durham Natural Heritage System mapping
– Possible habitat of threatened or endangered species (bats, chimney swift, barn swallow)
– Natural features and wildlife uses associated with Frenchman's Bay

1.2 Location and Study Area

The Study Area includes properties at 640 Liverpool Road, 1294, 1292, 1290, 1288, 1280 Wharf Street and 607, 609 Annland Street in Pickering, and have a total land area of approximately 1.13 hectares. The Study Area included seven lots occupied by existing homes, an abandoned building, a parking area, and a boat storage area.



Data Disclaimer

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Legend

- BBS - Breeding Bird Survey Station
- Property Limit
- Vegetation Communities

1 cm = 7 meters

0 4.5 9 13.5 18

Meters

Map Projection: Transverse Mercator
Horizontal Datum: North American 1983
Grid: NAD 1983 UTM Zone 17N

Paper Size ANSI B

N

GHD

Liverpool Road Limited Partnership
640 Liverpool Road, Pickering, ON
City of Pickering

Environmental Impact Study

Vegetation Communities Surveys & Constraints

Project No. 12586332
Revision No.
Date Nov 18, 2022

Figure 1

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Print date: 18 Nov 2022 - 09:44

Data source: Image © City of Pickering, 2021.

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

1.3.1.1 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.

1.3.2 Provincial Legislation

1.3.2.1 Endangered Species Act, 2007

The purposes of the Ontario Endangered Species Act (ESA 2007) are 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. (Government of Ontario, 2019)

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 August 1, 2018 (Government of Ontario, 2019b). 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 (Government of Ontario 2019c). Further information including a Recovery Strategy or Management Plan is required for each listed species, on a timeline dictated by the species status.

Ontario Regulation 242/08 explains possible exemptions to the ESA and details on how the purpose of the ESA is to be carried out.

1.3.2.2 Provincial Policy Statement, 2020

The Provincial Policy Statement, 2020 (PPS) is the statement of the Ontario government's policies on land use planning. It applies province-wide (in the province of Ontario) and provides provincial policy direction on land use planning. Municipalities use the PPS to develop their official plans and to guide and inform decisions on other planning matters. The PPS is issued under Section 3 of the Planning Act and all decisions affecting land use planning matters 'shall be consistent with' the Provincial Policy Statement (Government of Ontario, 2020).

Portions of Sections 2.1.4-2.1.8 of the Provincial Policy Statement (PPS 2020) apply to this project.

2.1.4 Development and site alteration shall not be permitted in:

a. significant wetlands in Ecoregions 5E, 6E and 7E1; and

b. significant coastal wetlands.

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 7E1;

b. significant woodlands in Ecoregions 6E and 7E (excluding islands in Lake Huron and the St. Marys River) 1;

c. significant valleylands in Ecoregions 6E and 7E (excluding islands in Lake Huron and the St. Marys River) 1;

d. significant wildlife habitat;

e. significant areas of natural and scientific interest; and

f. coastal wetlands in Ecoregions 5E, 6E and 7E1 that are not subject to policy

2.1.4(b) 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.

1.3.2.3 A Place to Grow: Growth Plan for the Greater Golden Horseshoe, 2020

A Place to Grow: Growth Plan for the Greater Golden Horseshoe 2020 came into effect on August 28th, 2020 replacing the Growth Plan for the Greater Golden Horseshoe 2019 (OMMAH 2019). The Growth Plan for the Greater Golden Horseshoe 2020 (herein referred to as GPGGH 2020) is a strategic, long-range, comprehensive, and integrated approach to guide future growth in Ontario. It includes planning for infrastructure, land use, economic development, and population health (OMMAH 2019).

1.3.3 Local and Other Regulatory Bodies

1.3.3.1 City of Pickering Official Plan (Office Consolidation 2022)

Schedule I (Land Use Structure) of the Pickering Official Plan shows the subject property as part of an Urban Residential Area and subcategorized as a Low Density Area. However, the subject property is within 120 metres of an Open Space System (Marina Areas), which is also shown on Schedule I.

Section 16.51 – “Key Natural Heritage and Key Hydrologic Features – outside of the Oak Ridges Moraine and Seaton Urban Area” applies to this project since it its within 120 metres of Frenchman’s Bay and an Open Space System:

16.51 Within the Open Space System, outside the Oak Ridges Moraine and the Seaton Urban Area, City Council shall:

a. recognize that Table 18 identifies minimum areas of influence and minimum vegetation protection zones related to key natural heritage and key hydrologic features, and where features are not identified on Schedules IIIB to IIID, these features shall be identified using criteria identified by the Province/relevant Conservation Authority either on a site-by site basis or through the appropriate study prior to undertaking any development or site alteration;

b. *for lands within the minimum area of influence that relates to a key natural heritage feature but outside the key natural heritage feature itself and the related minimum vegetation protection zone, require a natural heritage evaluation for an application for development or site alteration that shall:*

   i. *demonstrate that the development or site alteration applied for will have no adverse effects on the key natural heritage feature or on the related ecological functions;*

   ii. *identify planning, design and construction practices that will maintain and, where possible, improve or restore the health, diversity and size of the key natural heritage feature and its connectivity with other key natural heritage features;*

   iii. *demonstrate how connectivity within and between key natural heritage features will be maintained and, where possible, improved or restored before, during and after construction;*

   iv. *if Table 18 specifies the dimensions of a minimum vegetation protection zone, determine whether it is sufficient, and if it is not sufficient, specify the dimensions of the required minimum vegetation protection zone and provide for the maintenance and, where possible, improvement or restoration of natural self-sustaining vegetation within it; and*

   v. *if Table 18 does not specify the dimensions of a minimum vegetation protection zone, determine whether one is required, and if one is required, specify the dimensions of the required minimum vegetation protection zone and provide for the maintenance and, where possible, improvement or restoration of natural self-sustaining vegetation within it, including, without limitation, an analysis of land use, soil type, slope class and vegetation type, using criteria established by the Province, as amended from time to time;*

1.3.3.2 Toronto Region Conservation Authority and Ontario Regulation 42/06

The Conservation Authority whose jurisdiction the study area falls under is the Toronto Region Conservation Authority (TRCA). Under Conservation Authorities Act, Ontario Regulation 42/06, Regulation of Development Interference with Wetlands and Alterations to Shorelines and Watercourses is applicable. Ontario Regulation 42/06 establishes Regulated Areas where development could be subject to flooding, erosion or dynamic beaches, or where interference with wetlands and alterations to shorelines and watercourses might have an adverse effect on those environmental features. Under Ontario Regulation 42/06, any proposed development, interference or alteration within a Regulated Area requires a permit from TRCA.

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 included:

1.4.1 Data Sources

- Orthophotography/Satellite Imagery
- OMNRF Land Information Ontario (LIO) database mapping and Natural Heritage Information Centre (NHIC) Make a Map tool (2019)
- Ontario Breeding Bird Atlas data (Bird Studies Canada, (BSC) 2001-2005 field data)
- NatureCounts data (Bird Studies Canada, 2020)

1.4.2 Literature and Resources

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

1.5 Description of Development

The proposed development includes 51 three-storey townhouses with two parking spots for each, and 18 visitor parking spaces.

1.6 Scope of Report

This report provides the following information as outlined in the Terms of Reference (Sent to TRCA on June 28, 2022):

- *Baseline ELC delineation and mapping of the area*
- *Botanical inventory*
- *Results of Breeding Bird Surveys (2)*
- *Incidental observations of amphibians, birds, snakes, and other wildlife*
- *Presence of significant trees (butternut) or regionally rare plants*
- *Assessment of habitat for wildlife including wildlife linkages*
- *Presence of habitat of threatened or endangered species (butternut, bats, woodland bird species)*

This report will only deal with the suitability of the site from a biological perspective and the constraints due to the presence of the key natural heritage features and NHS policies. Any other approvals or constraints due to zoning, flood and fill regulations, health regulations, archaeology, slope stability studies, minimum distance separation or other approvals for the municipality and other agencies are the responsibility of the owner.

2. Study Methods

2.1 General Approach

The preparation of this report consisted of three distinct phases. In the first phase, available background information about the study area was compiled and reviewed. The literature review included standard sources of biological data such as provincial and regional-level natural heritage mapping and provincial-level databases on natural features and species at risk. Other sources of data included recent orthophotography, Ontario's Natural Heritage Information Centre (NHIC) Make-a-Map tool, City of Pickering Official Plan schedules and the previous environmental report from 2015 by Niblett Environmental Associates. A Terms of Reference was also submitted to TRCA on June 28, 2022 with no response received.

In our literature review, some biological data was extracted from the Integrated Shoreline Management Plan (Tommy Thompson Park) to Frenchman's Bay (TRCA, Dec. 1996), the Frenchman's Bay Stormwater Management Master Plan (MMM Group, April 2009), Durham Region Coastal Wetland Monitoring Project, Frenchman's Bay Waterfront Master Plan and the Frenchman's Bay Watershed Rehabilitation Project (2006).

The second phase consisted of site visits by GHD's Terrestrial and Wetland Biologists to collect site-specific data, and to confirm the information that had been gathered during the literature review. Surveys included botanical inventories and vegetation community mapping (according to the Ecological Land Classification System for Southern Ontario), breeding bird surveys, incidental observations of birds, amphibians, snakes and other wildlife, presence of significant trees or rare plants (butternuts), presence of habitat of threatened or endangered species and aquatic habitat assessments of the watercourse.

The final phase involved preparation of this environmental report, based upon information from both the literature review and field surveys. This report includes specific mitigation measures for protecting sensitive species and other natural features on or adjacent to the study site. It has been prepared to meet the requirements of the City of Pickering and TRCA policy requirements. The Environmental Report must demonstrate that proposed development will not

adversely affect the ecological integrity of the natural features. This report also includes a figure that illustrates the location of vegetation communities, survey stations and constraints to development.

2.1.1 Physical Site Characteristics

Site characteristics were assessed during field visits. This assessment included general documentation of existing disturbances, current property use, age of vegetation cover, topography and natural features.

2.1.2 Biophysical Inventory

2.1.2.1 Vegetation

ELC Survey Method

All vegetation encountered in the study area were inventoried during spring and summer site visits. Delineation and classification of the vegetation community types was 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 was based on published literature and standard status lists. These included SARA (2022), COSEWIC (2021), COSSARO (2021), Ontario Endangered Species Act (2008), Varga et al. (2001).

2.1.2.2 Birds

Breeding Bird Survey (BBS) Survey

Bird surveys were conducted following the protocols of the Ontario Breeding Bird Atlas (OBBA) point count methodologies. Surveys will be conducted in the peak season (April 15th-August 15th) approximately 10-15 days apart. All birds seen or heard within the five-minute station period will be documented and breeding evidence codes recorded. Surveys will be conducted in the early morning.

2.1.2.3 Other Wildlife

While surveyors were on site conducting surveys of vegetation communities (i.e., ELC and wetland) observations of any wildlife encountered on site were recorded (including mammals, amphibians and reptiles). Documentation included notes about the species detected, their location and the type of encounter (i.e., direct sightings and indirect evidence such as calls, tracks, scat, burrows, dens, trails and browse).

2.1.2.4 Significant Wildlife Habitat

Prior to site visits, GHD Biologists developed a list of candidate SWH features that may occur on the subject property (using available background information about the study area and the Significant Wildlife Habitat Criteria Schedules for Ecoregion 6E, 2015). During field visits, GHD Biologists determined whether these candidate SWH features were present or absent on site. If any candidate feature was present, additional information was collected. After analysing the field data, GHD determined which SWH were confirmed and considered the potential impacts from the proposed development on the identified SWH and identified mitigation measures to reduce these impacts.

2.1.2.5 Species at Risk

During field surveys, targeted searches for Species at Risk was conducted. As this Site is urban area with limited habitat, species searches were focussed on chimney swift habitat, barn swallow habitat and bat habitat. All chimneys were viewed to determine if they were capped or not. A thorough walk around the buildings was conducted looking for gaps, openings or broken windows where species may enter. In addition to identifying trees that may provide habitat for bat roosting or bat maternity colonies.

2.1.2.6 Natural Features

The properties within the proposed development envelope are all urban lots with no natural features and no shoreline frontage on Frenchman's Bay or the wetland. The presence of Frenchman's Bay shoreline, natural features including wetlands was included in our study area (**i.e.** Within 120 m).

3. Survey Results

The following section presents GHD site-specific survey data only. Supporting information, the background review or other sources will be presented and discussed in Section 4.0 -Discussions and Analysis.

3.1 Biological Inventories

3.1.1 Vegetation

3.1.1.1 Level of Effort

The vegetation communities were delineated within the study by GHD biologists according to the 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 Survey – Level of Effort and Environmental Conditions

Survey Date	Survey Type	Weather	Start Time	Effort
June 14, 2022	ELC, Vegetation surveys	20°C, cloud cover-50%, wind scale 0, no precipitation	6:45 am	1.25 hours x 2 biologists
September 7, 2022	ELC, Vegetation surveys	19°C, cloud cover-100%, wind scale 1, no precipitation	9:00 am	0.75 hours x 2 biologists

3.1.1.2 ELC Code Descriptions

Three vegetation communities were identified within the study area. Each of the community is described below and illustrated on Figure 1.

A total of 82 plant species were identified during field surveys. The dominant plant species in each community are described below and a complete plant list is found in **Appendix A**.

Community 1: Lawn and Vacant Structures (ELC Code: No Code)

This community was identified in the east of the Study Area and contained lawns, a parking area, and two abandoned structures. Most species identified were typical of urban areas and lawns, with several planted tree and herbaceous varieties. Some of these species included: Canada thistle (*Cirsium canadense)*, bitter nightshade (*Solanum dulcamara)*, frost-weed aster (*Symphyotrichum ericoides)*, New England aster (*Symphyotrichum novae-angliae)*, Kentucky blue grass (*Poa pratensis)*, Canada goldenrod (*Solidago canadensis)*, mouse-eared chickweed (*Cerastium fontanum).* and white clover (*Trifolium repens)*. Trees and shrubs included: lilac (*Syringa vulgaris)*, Manitoba maple (*Acer negundo)*, Norway maple (*Acer platanoides),* and eastern white cedar (*Thuja occidentalis)*.

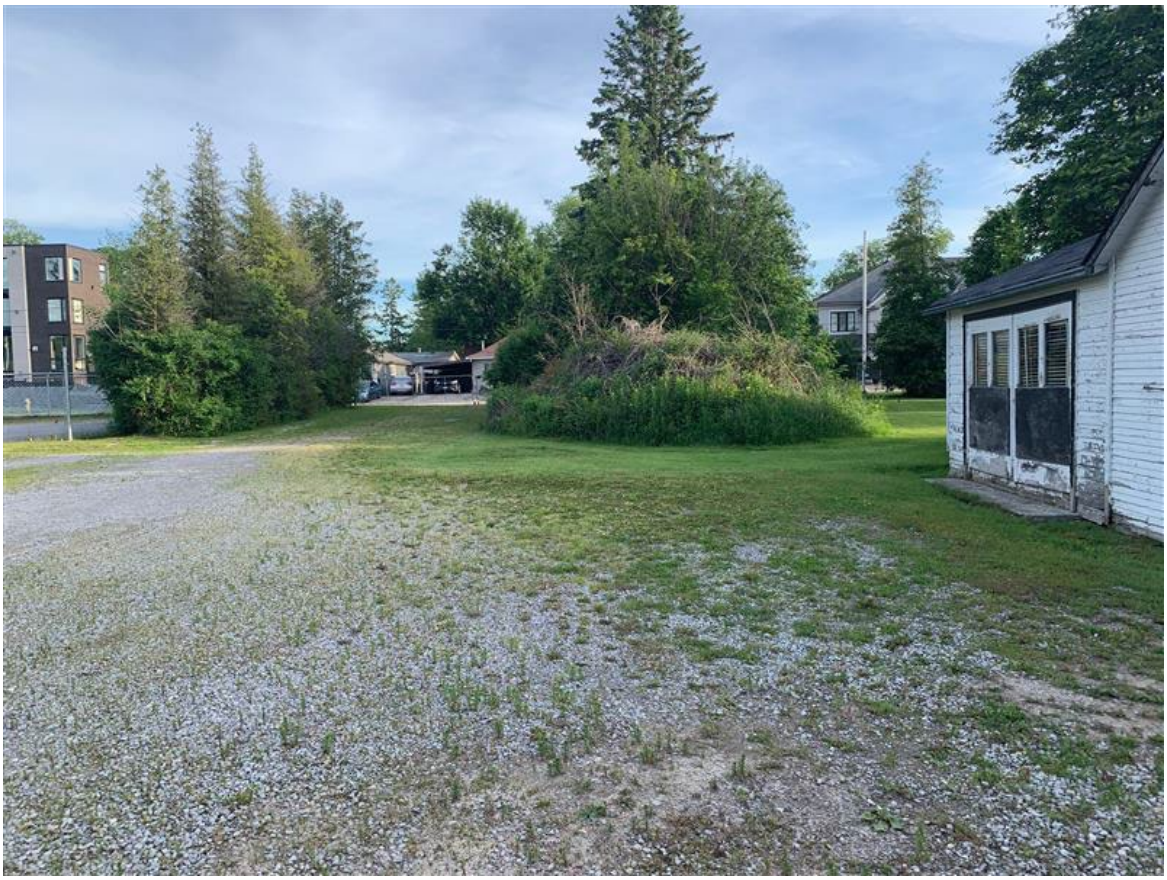

Photo 1: Community 1 (June 14, 2021)

Community 2: Hedgerows (ELC Code: No Code)

Hedgerows were identified adjacent to Community 1's boundaries. These were dominated by conifers such as eastern white cedar, eastern white pine (*Pinus strobus)*, Norway spruce (*Picea abies)* and Scot's pine (*Pinus sylvestris)*, but also included Manitoba maple and Norway maple. Groundcover species included: white-sweet clover (*Melilotus alba)*, spotted jewelweed (*Impatiens capensis)*, goutweed (*Aegopodium podagraria)*, swallow-wort (*Cynanchum rossicum)*, catnip (*Nepeta cataria)*, Tartarian honeysuckle (*Lonicera tartarica)* and ox-eye daisy (*Chrysanthemum leucanthemum)*.

Photo 2: hedgerows of Community 2 (June 14, 2021)

Community 3: White Cedar Mineral Mixed Swamp (ELC Code: SWM1)

Community 3 is the remainder of the Site and contains several private properties still occupied by tenants, as well as vacant lots with abandoned structures. Where access was permissible, GHD noted much of the plant species were like the other communities, but much more overgrown with different overall vegetative characteristics. Some of the species included white spruce (*Picea glauca)*, common yarrow (*Achillea millefolium)*, Queen-Anne's lace, curled dock (*Rumex crispus)*, garlic mustard (*Alliaria petiolata)*, rugosa rose (*Rosa rugosa)* and orchard grass (*Dactylis glomerata*).

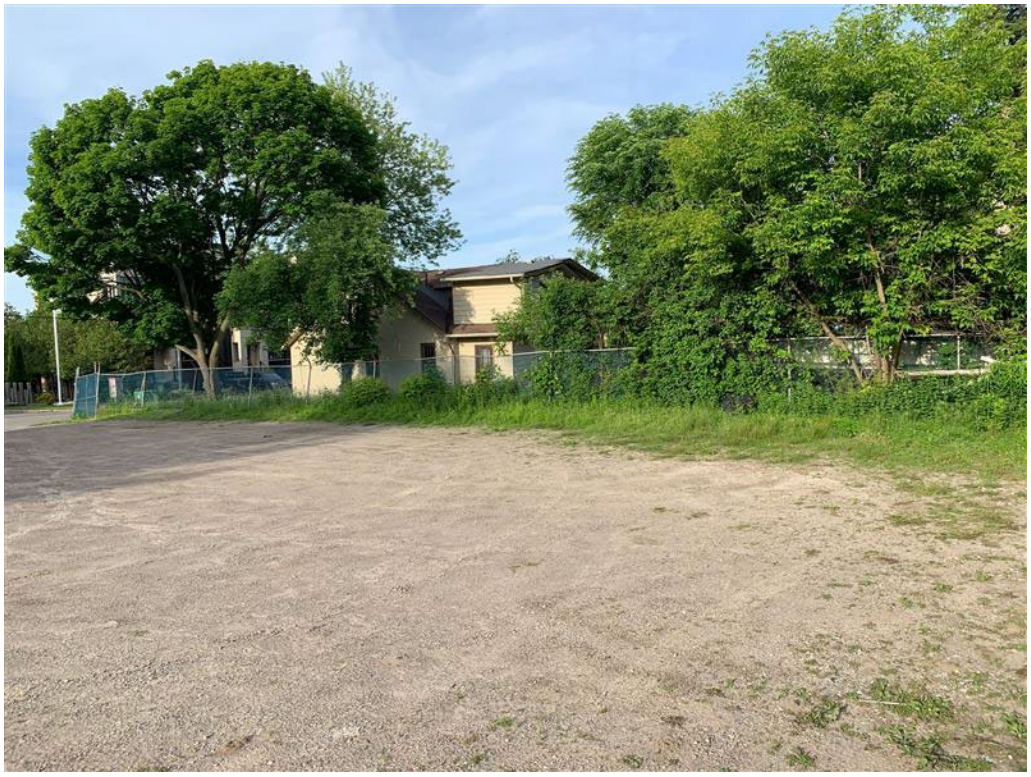

Photo 3: Vacant Lot of Community 3 (June 14, 2021)

3.1.2 Birds

3.1.2.1 Bird Surveys - Level of Effort

Surveys for 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 3.2.

Table 3.2 Bird Survey – Level of Effort

Survey Date	Survey Type	Weather	Start Time	Effort
June 14, 2022	Breeding bird survey	20°C, cloud cover-50%, wind scale 1, no precipitation	6:51 am	0.25 hrs
June 28, 2022	Breeding bird survey	13°C, cloud cover-0%, wind scale 1, no precipitation	6:11 am	0.25 hrs

Breeding Bird Surveys

A total of 16 bird species were detected by GHD biologists during the breeding bird surveys conducted in 2022 (**Appendix B).** The breeding bird surveys were conducted in the middle of the property in a location that covered all communities. Species were typical of urban residential areas, and included: blue jay (*Cyanocitta cristats)*, mourning

dove (*Zenaida macroura)*, American robin (*Turdus migratorius)*, northern cardinal (*Cardinalis cardinalis)* and house sparrow (*Passer domesticus)*.

3.1.3 Other Wildlife

GHD biologists also kept records of any mammal and/or herpetofauna species encountered during their visits to the study area. The following species were recorded during field surveys: red squirrel (*Sciurus vulgaris*), red fox (*Vulpes vulpes)* and eastern gray squirrel (*Sciurus carolinensis)*.

3.1.4 Significant Wildlife Habitat

During our SWH candidate review the following were identified as potential SWH: Bat Maternity Colonies.

4. Discussion and Analysis

4.1 Species and Communities

4.1.1 Vegetation

GHD did not find any plant species that are nationally, provincially significant (COSEWIC 2021; SARA 2021; COSSARO 2021) (**Appendix A).** None of the species are considered regionally rare (Varga, 2001).

Records obtained from the Ontario Natural Heritage Information Centre's Make-A-Map Tool (2019), indicate that one tracked plants species was historically found within the 1km x 1 km square overlapping the property (17PJ9586). The species is whorled loosestrife (*Lysimachia quadrifolia)*. GHD did not identify this unique species on the property due to lack of habitat.

No butternut (*Juglans cinerea)* trees were identified during our surveys.

4.1.2 Birds

GHD biologists identified one significant bird species on a national, provincial, or regional level on the subject property (**Appendix B**)). The species was a barn swallow which was observed foraging over the property. Despite the abandoned structures on the property, GHD did not identify any nests on these structures. All windows were sealed, which eliminated potential nesting within the structures. Being close to the shore there are likely nesting occurring on some of those shoreline structures.

Records obtained from the Ontario Natural Heritage Information Centre's Make-A-Map Tool (2019), indicate that several Species at Risk were historically found within the 1km x 1 km square overlapping the property (17PJ9586) including: black tern (*Chlidonias niger)*, barn swallow (*Hirundo rustica)*, eastern wood-pewee (*Contopus virens)*, least bittern (*Ixobrychus exilis)*, eastern meadowlark (*Sturnella magna*) and bobolink (*Dolichoynx oryzivorus*). No suitable nesting habitat was found on the property for any of these species.

A summary information sheet was generated from the 2nd Ontario Breeding Bird Atlas (Bird Studies Canada, 2006) and the latest 2021-2022 data for the 10X10 km squares (17PJ55) that included the subject property. The significant species were determined and the possibility of suitable habitat occurring on the subject property assessed.

Species recorded in these squares include least bittern (*Ixobrychus exilis*), black tern (*Chlidonias niger*), common nighthawk (*Chordeiles minor*), chimney swift (*Chaetura pelagica),* red-headed woodpecker (*Melanerpes erythrocephalus*), eastern wood-pewee (*Contopus virens*), barn swallow (*Hirundo rustica*), wood thrush (*Hylocichla mustelina*), golden-winged warbler (*Vermivora chrysoptera)*, Canada warbler (*Wilsonia canadensis*), eastern meadowlark (*Sturnella magna*), bobolink (*Dolichonyx orizivoru),* bank swallow (*Riparia riparia*) and grasshopper

sparrow (*Ammodramus savannarum*) which were recorded in the first (1981-85) and the more recent (2001-2005) atlas period.

The least bittern is a provincially and federally threatened species and is listed as a Schedule 1 species under the Species at Risk Act (SARA). This species nests in large freshwater marshes interspersed with open water and dense emergent vegetation. They require marshes of at least 5 ha in size and populations are not supported by smaller wetlands This species was not observed at the time of the site visit. There is no suitable habitat, cattail marshes in the study area.

The black tern is listed as a special concern provincially but not at risk nationally. These species nest in shallow marshes, and cattails. Nesting habitat is present in parts of Frenchman's Bay but not adjacent to the study area. Terns will forage along the shorelines.

The common nighthawk is listed by COSEWIC as a threatened species. The common nighthawk is typically found in open areas such as sand dunes, recently logged or burned over areas, pastures, open forest, gravel roads, rocky outcrops and rocky barrens, and even military base and airports (COSEWIC, 2015). There is no suitable habitat for this species on the subject property. The storage building had a metal slanted roof. No flat-topped gravel roofs are present in the study area.

The chimney swift is listed federally and provincially as a threatened species. The chimney swift is usually found within 1 km of a waterbody and, as its name implies, predominantly nests within old chimneys in urban and suburban areas. All the buildings on the properties in the study area have capped chimneys, precluding entry by birds.

The red-headed woodpecker is listed provincially as a Special Concern species; however, COSEWIC designated it as threatened (COSEWIC, 2015). This species is typically found in habitats dominated by oak and beech or forests within a floodplain area. It is also found in a variety of more open habitats (such as pastureland, golf courses, and cemeteries) however these areas must also contain many mature deciduous and dead trees for perching and nesting. There may be suitable trees in the large residential neighbourhoods. No cavities or suitable nest trees were noted during our surveys.

The eastern wood-pewee was designated as Special Concern. Breeding habitat is deciduous, mixed woods, or pine plantations. They feed on insects and other arthropods in flight. The subject property was an urbanized area with no woodlands of sufficient size in the general vicinity.

The barn swallow has recently been listed as a threatened species. This species prefers open rural and urban areas where bridges, culverts and buildings are found near rivers, lakes, marshes, or ponds. The buildings and houses did not provide for nesting habitat, including those with small porches.

The wood thrush was recently listed as Threatened. It breeds in deciduous and mixed forests where there are large trees, moderate understory, shade, and abundant leaf litter for foraging. It hops through leaf litter on the forest floor, probing for insects, bobbing upright between spurts of digging and leaf-turning. There is no suitable habitat found in the study area for this species.

There is no suitable habitat for golden-winged warbler, bobolink, eastern meadowlark, grasshopper sparrow, or Canada warbler is the urban study area.

4.1.3 Other Wildlife

Records obtained from the Ontario Natural Heritage Information Centre (2019) indicated that the following SAR wildlife records on the 1km x 1 km square overlapping the property (17PJ9586): midland painted turtle (*Chrysemys picta)*, snapping turtle (*Chelydra serpentina)*, eastern ribbon snake (*Thamnophis saurita)* and Blanding's turtle (*Emydoidea blandingii)*. No habitat for these species were identified on the property. There is overwintering and foraging habitat for snapping turtle in the bay with potential nesting habitat anywhere near the shoreline. No nests or predated nest sites or evidence of hatching was observed in the study area. There is no habitat for Blanding's turtle in the study area, although potential historical habitat in Frenchman's Bay likely occurred. Ribbonsnake habitat, found along shorelines and near watercourses is limited in the study area by the maintained lawn and yards**.** No nesting habitat was identified,

and no predated nests were identified in the gravel areas of parking lots. Fences would limit the access to most of the properties in the study area.

4.2 Natural Features

4.2.1 Provincially Significant Wetland

There are no provincially significant wetlands (PSW), ANSI's or other designated natural features on the study area properties or within 120 metres. The study area properties do not have shoreline frontages onto Frenchman's Bay, part of the Lake Ontario waterfront. The nearest PSW is the Frenchman's Bay Coastal Wetland Complex located approximately 220 m to north along the east shoreline of the bay.

4.2.2 Significant Wildlife Habitat

In the Provincial Policy Statement (2020) wildlife habitat is defined as, "… areas of the natural environment where plants, animals, and other organisms live, and find adequate amounts of food, water, shelter and space needed to sustain their populations." These documents also state, "specific wildlife habitats of concern may include areas where the species concentrate at a vulnerable point in their annual or life cycle; and areas which are important to migratory and non-migratory species."

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 identified that only one candidate SWH was possible in the study area. A summary of the habitat criteria is found in Table 4.1.

Table 4.1 List of Candidate SWH and Confirmation of Habitat on Site

Specialized Wildlife Habitat Criteria	Candidate and Confirmed Habitat Criteria	Found – Yes	Found - No
Bat Maternity Colonies	– Found in tree cavities – located in mature deciduous or mixed forest stands with >10ha large diameter trees – Maternity colonies with confirmed use by >10 big brown bats, >5 adult female silver haired bats	No confirmed SWH	Community 3 contained 2 dead snags with cavities. however, the property does not meet SWH definitions due to the lack of >10ha of large diameter trees.

5. Impact Assessment and Recommendations

The following section provides a description of the predicted impacts that may result from the proposed development. It also highlights key mitigation measures to be implemented to avoid and/or minimize adverse effects to the natural environment features within or near the project. A full list of mitigation measures has been provided in Section 7.0.

The development requires the demolition of several houses and other structures with the development envelope. The impact from this activity and land use is limited in terms of natural features and wildlife species. Loss of some of the existing trees may also impact on wildlife species but that is also limited.

The Lake Ontario Shoreline was the trigger for the following ER. No significant valley lands, wetlands or habitat for significant species were identified during field surveys.

The impact the proposed 3 story townhouses and the associated parking areas on the natural features is limited due to the current uses on those lands. The study area comprises several existing single family residential lots. The lawns were manicured and landscaped and contained very little natural regenerating vegetation.

One property was quite disturbed and was covered in gravel with some regeneration of Manitoba maple on the north side. The development will occur entirely within the current disturbed/built up area.

Most of the vegetation within the lots will be removed to accommodate the townhouses. Little diversity of vegetation existed and GHD could not place an ELC code to these areas because they were urbanized areas/lots with planted native and non-native cultivar specimen trees. The few regenerating areas were in an early successional stage and were mostly managed (mowed). Numerous invasive species existed in these areas including Japanese knotweed (*Polygonum cuspidatum*), purple loosestrife (*Lythrum salicaria*), European buckthorn (*Rhamnus cathartica*), goutweed (*Aegopodium podagraria L.)* and swallow-wort (*Cynanchum rossicum*). Removal of these species will

benefit the adjacent areas and will prevent the surrounding areas from becoming inundated with these species in the future.

5.1 Birds

The removal of the houses, structures and trees in the development envelope will result in a minor loss of bird habitat. The bird species recorded were all typical urban species and no Species at Risk were found nesting in the study area.

To be in compliance with the Migratory Birds Convention Act, no vegetation removal should occur on site during the peak breeding bird season (April 1st to August 15th). If vegetation removal cannot be avoided and is to occur within this time frame, a qualified bird biologist will be required to conduct a nest search in vegetation to be removed. It is also recommended that bird-friendly design be incorporated into the building design, where possible, to decrease bird collision and mortality from reflective surfaces.

Birds within the marsh and open waters of Frenchman's Bay will not be impacted as the development is not located along the shore and is in an existing urban residential area.

5.2 Species at Risk

Records of Species At Risk in the area general area of the property are historical in nature. While barn swallows were observed, we did not find any active or old nests on the property or on the houses or other structures.

Snag trees were identified in Community 3 which may provide habitat for roosting bat species. For this, GHD recommends that tree removal not occur within the active bat timing window between April 1st to September 31st. Contractors should also be aware that bats may be roosting in the eves or attics of the houses or other structures and during demolition may be disturbed. No evidence of bat colonies was observed or detected by GHD.

The removal of the existing planted and ornamental trees, and the native species established along lot lines, will not impact on the natural features of the area or the habitat of any Species At Risk, listed under the ESA. No habitat for migrating landbird stopover or monarch butterfly migratory stopover or breeding habitat was present.

Once the houses are demolished and existing fences removed, the construction site will be more open to access by gravid female turtles (painted turtle and snapping turtles) seeking suitable nesting areas. It is recommended that construction fencing with silt fence attached to the bottom be installed to exclude turtles from accessing the construction zone and stockpiles and disturbed sandy soils, that may be of interest to turtles looking for soft substrates to lay their eggs, especially in the late May to July period.

If a turtle is found inside the construction zone, it should be left to leave on its own. If a nest is discovered or a turtle will not leave, an MECP biologist should be contacted for advice.

5.3 Natural Heritage Features

Due to the proximity to Frenchman's Bay, potential impacts on the bay, water quality and wildlife habitat may be possible but can be mitigated.

The construction activity, excavation and post-development activity will not impact on the features or functions of the wetland or Frenchman's Bay. The potential for sediment loading from the development from runoff during construction or dewatering can be mitigated. It is recommended that a detailed sediment and erosion control plan be prepared, and that silt fence installation will be required, especially at the west end of the site to prevent any sediment laden runoff from flowing into the bay. The silt fence should be inspected and maintained throughout the construction phase and remain in place until the soils are stabilized and re-vegetated.

Frenchman's Bay is located immediately to the east and contains a provincially significant wetland, and several ecological functions and Species at Risk. As it is located more than 30 m from the Site and no shoreline work is included in the redevelopment plan, no impacts on those features, species or functions is anticipated.

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 Federal Legislation

6.1.1 Migratory Birds Convention Act, 1994 (S.C. 1994, c.22)

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 1st to August 15th (Environment and Climate Change Canada, 2014). As such clearing of trees and other vegetation for the development cannot occur during this timing window. If cutting of a few trees is required within the timing window, a qualified bird biologist should be contacted to complete a nest sweep and provide a letter to the client.

6.2 Provincial Legislation

6.2.1 Endangered Species Act, 2007

No butternut trees or other endangered or threatened species were found on site in June and July 2021. At this time, the project is in compliance with this Act. Because of the presence of snag trees on the property, GHD recommends that tree clearing be conducted outside of the active bat timing window between April 1st to September 31st. If bats or other SAR species are found during construction, MECP should be contacted.

6.2.2 Planning Act and Provincial Policy Statement, 2020

The subject property does not locate within 120 m of the provincially significant wetlands (PSWs) to the northwest. As a result, Sections 2.1.4, 2.1.5 and 2.1.6 of the Provincial Policy Statement apply. Sections 5.0 (Impact Assessment) of this report, contain recommendations that allow the proposed development to proceed in a manner consistent with the Provincial Policy Statement (PPS).

6.2.3 A Place to Grow: Growth Plan for the Greater Golden Horseshoe, 2020

The Growth Plan includes natural heritage features and key hydrologic features. The report outlines how the Growth Plan policies are met in respect to these features

6.3 Local and Other Regulatory Bodies

6.3.1 City of Pickering Official Plan

Recommendations in Section 5 and 7 of this report outlines how the City of Pickering policies have been satisfied and impacts minimized in order to be in compliant with the City of Pickering Official Plan.

6.3.2 Toronto Region Conservation Authority 42/06

There were no watercourses, seepage areas, or other hydrologic features within the development area. However, as Frenchman's Bay is within 120 meters of the development, we have provided mitigation measures and recommendations to address any potential impacts on the natural features and their ecological functions. The policies of TRCA have been addressed above.

7. Summary of Recommendations

The following section is a comprehensive list of all project mitigation measures, recommendations, best management practices and or compensation measures (if required). Many recommendations have been discussed or referenced in the body of the text and others may be newly presented standard best management practices. This list is intended to assist project reviews, contractors and clients to understand all environmental recommendations and to ensure all parties have fulsome understanding of the project. The final conclusions of this report are based on the implementation of the following.

7.1 General

1. The developable area be clearly defined and delineated and a line be staked and clearly marked in the field prior to any site preparation activities on the site.
2. Cutting of trees to facilitate the development must be completed outside of the peak breeding bird nesting season (April 1st- August 15th) and active bat season (April 1st to September 31st).
3. Prior to any site preparation activities (grading, placement of fill) erosion and sediment control measures should be installed along the four sides of construction envelope to ensure sediment laden runoff does not enter interfere with adjacent vegetation or natural features. The silt fence should be inspected and maintained throughout the construction phase and remain in place until the soils are stabilized and re-vegetated.
4. Obtain relevant permits from the Region, City and TRCA.
5. Incorporate native plantings into the landscaping around the building envelope where possible.
6. Remove invasive species around building envelope where possible (swallow-wort for example).
7. All structures have downspouts that spill out onto grassed surfaces and other infiltration measures (LID's) be created.
8. Incorporate bird-friendly infrastructure to reduce bird-window collision, where applicable.
9. If turtles are found in the construction area, they should be left to leave on their own or MECP biologists be contacted re removal/relocation.

8. Conclusion

GHD has prepared this Natural Heritage Evaluation to address potential environmental issues associated with a townhome development at 640 Liverpool Street in the City of Pickering.

Development on this site and in the recommended development envelope will result in no negative impacts on the functions of identified natural features or species provided the mitigation measures and recommendations are implemented. GHD's recommendations have been made to address potential impacts to natural heritage features and/or their functions during the pre-construction, construction, and post-construction phases.

9. References

Bird Studies Canada. 2007. Atlas of the Breeding Birds of Ontario square summary information sheets. Accessed on the World Wide Web at: https:/www.birdsontario.org/atlas/squareinfo.jsp. City of Kawartha Lakes. 2012. Official Plan

COSEWIC. 2019. Canadian Species at Risk, April 2019. Committee on the Status of Endangered Wildlife in Canada. Accessed on the World Wide Web at: https://www.canada.ca/en/environment-climate-change/services/committee-status-endangered-wildlife.html.

COSSARO. 2018. Species at Risk in Ontario (SARO), 2019. Ontario Ministry of Natural Resources Committee on the Status of Species at Risk in Ontario. Retrieved from http://cossaroagency.ca/species.

Environment and Climate Change Canada. 2014. Bird Conservation Strategy for Bird Conservation Region 13 in Ontario Region: Lower Great lakes/St. Lawrence Plain – Abridged Version. Ottawa, 34pp.

Government of Canada. 2019. SARA (Species at Risk Act) Schedule 1 (Subsections 2(1), 42(2) and 68(2)): List of Wildlife species at risk, Parts 1-4. Accessed on the World Wide Web at: http://www.registrelep-sararegistry.gc.ca/sar/index/default_e.cfm.

Government of Canada. 1994. Migratory Birds Convention Act, 1994 (S.C. 1994, c. 22). Accessed on the World Wide Web at: http://laws-lois.justice.gc.ca/eng/acts/m-7.01/.

Government of Ontario. 2019. Ontario Regulation 230/08: Species at Risk in Ontario list under the Endangered Species Act, 2007, S.O. 2007, c.6. Accessed from the World Wide Web at: https://www.ontario.ca/laws/regulation/080230.

Government of Ontario. 2019b. Ontario Regulation 242/08: General under the Endangered Species Act, 2007, S.O. 2007, c.6 Accessed from the World Wide Web at: https://www.ontario.ca/laws/regulation/080242.

Government of Canada. (2017, 11). Beaufort Wind Scale Table. Retrieved from Environment and Climate Change Canada: https://www.ec.gc.ca/meteo-weather/default.asp?lang=En&n=80C039A3-1

Government of Ontario. 2020. Provincial Policy Statement, 2020. Ministry of Municipal Affairs and Housing. Queen's Printer for Ontario. Accessed on the World Wide Web at: http://www.mah.gov.on.ca/Page215.aspx.

Government of Ontario. 2013. Ontario Regulation 159/06: Otonabee Region Conservation Authority: Regulation of Development, Interference with Wetlands and Alterations to Shorelines and Watercourses. Accessed on the World Wide Web at: https://www.ontario.ca/laws/regulation/060042

Lee, H., Bakowsky, W., Riley, J., Bowles, J., Puddister, M., Uhlig, P. and S. McMurray. 1998. Ecological Land Classification for Southern Ontario: First Approximation and its Application. OMNR, South Central Science Section, Science Development and Transfer Branch. SCSS Field Guide FG-02.

Ontario Ministry of Municipal Affairs and Housing (OMMAH). 2019. Growth Plan for the Greater Golden Horseshoe (May 2017). Queen's Printer for Ontario, 109pp + Appendices.

Ontario Ministry of Natural Resources and Forestry. January 2015. Significant Wildlife Habitat Criteria Schedules for Ecoregion 6E. Peterborough, 38pp.

Ontario Ministry of Natural Resources and Forestry. 2013. Ontario Wetland Evaluation System: Southern Manual. 3rd Edition, Version 3.2. Queen's Printer for Ontario, 284pp.

Ontario Natural Heritage Information Centre (NHIC). 2019. Make A Natural Heritage Area Map. Accessed from the World Wide Web at: http://www.gisapplication.lrc.gov.on.ca/mamnh/Index.html?site=MNR_NHLUPS_NaturalHeritage&viewer=NaturalHeritage&locale=en-US.

Miller, C. Kingsley, C. Jacobsen, K. Mewa, L. Tebby, E. Mosely and E. Zajc. 2000. Distribution and status of the vascular plans of the greater Toronto Area. Ontario Ministry of Natural Resources, Aurora District. August 2000. 102 pp.

Miller, C. Kingsley, C. Jacobsen, K. Mewa, L. Tebby, E. Mosely and E. Zajc. 2000. Distribution and status of the vascular plans of the greater Toronto Area. Ontario Ministry of Natural Resources, Aurora District. August 2000. 102 pp.

Varga, S., D. Leadbeater, J. Webber, J.Kaiser, B. Crins, J. Kamstra, D. Banville, E. Ashley, G.

Appendices

Appendix A

Plant Species by Community

APPENDIX 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
HORSETAIL FAMILY	*EQUISETACEAE*				
field horsetail	*Equisetum arvense*	2	X		X
PINE FAMILY	*PINACEAE*				
Norway spruce	*Picea abies*	1		X	
white spruce	*Picea glauca*	2		X	X
eastern white pine	*Pinus strobus*	1	X		
Scot's pine	*Pinus sylvestris*	1		X	
CYPRESS FAMILY	*CUPRESSACEAE*				
eastern white cedar	*Thuja occidentalis*	2	X	X	
BUTTERCUP FAMILY	*RANUNCULACEAE*				
Canada anemone	*Anemone canadensis*	1		X	
tall buttercup	*Ranunculus acris*	2	X		X
MULBERRY FAMILY	*MORACEAE*				
white mulberry	*Morus alba*	1		X	
GOOSEFOOT FAMILY	*CHENOPODIACEAE*				
lamb's-quarters	*Chenopodium album*	1			X
PINK FAMILY	*CARYOPHYLLACEAE*				
mouse-eared chickweed	*Cerastium fontanum*	1	X		
BUCKWHEAT FAMILY	*POLYGONACEAE*				
Japanese knotweed	*Polygonum cuspidatum*	1	X		
lady's thumb	*Polygonum persicaria*	1		X	
curled dock	*Rumex crispus*	1			X
MUSTARD FAMILY	*BRASSICACEAE*				
garlic mustard	*Alliaria petiolata*	3	X	X	X
shepherd's purse	*Capsella bursa-pastoris*	1	X		

Common Name	*Scientific Name*	Total	COMMUNITY NUMBER		
			1	2	3
PRIMROSE FAMILY	*PRIMULACEAE*				
scarlet pimpernel	*Anagillis arvensis*	1	X		
ROSE FAMILY	*ROSACEAE*				
yellow avens	*Geum aleppicum*	3	X	X	X
silverweed	*Potentilla anserina*	2	X		X
rugosa rose	*Rosa rugosa*	1			X
thimbleberry	*Rubus occidentalis*	1			X
European mountain ash	*Sorbus aucuparia*	1		X	
PEA FAMILY	*FABACEAE*				
black medick	*Medicago lupulina*	1	X		
white sweet-clover	*Melilotus alba*	3	X	X	X
red clover	*Trifolium pratense*	2	X		X
white clover	*Trifolium repens*	2	X		X
LOOSESTRIFE FAMILY	*LYTHRACEAE*				
purple loosestrife	*Lythrum salicaria*	1			X
DOGWOOD FAMILY	*CORNACEAE*				
red-osier dogwood	*Cornus stolonifera*	1			X
BUCKTHORN FAMILY	*RHAMNACEAE*				
European buckthorn	*Rhamnus cathartica*	2	X	X	
GRAPE FAMILY	*VITACEAE*				
Virginia creeper	*Parthenocissus inserta*	1	X		
wild grape	*Vitis riparia*	2	X	X	
MAPLE FAMILY	*ACERACEAE*				
Manitoba maple	*Acer negundo*	2	X	X	
Norway maple	*Acer platanoides*	3	X	X	X
WOOD-SORREL FAMILY	*OXALIDACEAE*				
European wood-sorrel	*Oxalis stricta*	2	X		X
TOUCH-ME-NOT FAMILY	*BALSAMINACEAE*				
spotted jewelweed	*Impatiens capensis*	2		X	X
CARROT FAMILY	*APIACEAE*				
goutweed	*Aegopodium podagraria L.*	2	X	X	
Queen-Anne's lace	*Daucus carota*	3	X	X	X
MILKWEED FAMILY	*ASCLEPIADACEAE*				
swallow-wort	*Cynanchum rossicum*	3	X	X	X
NIGHTSHADE FAMILY	*SOLANACEAE*				
bitter nightshade	*Solanum dulcamara*	2	X	X	
MORNING-GLORY FAMILY	*CONVOLVULACEAE*				
hedge bindweed	*Calystegia sepium ssp.americana*	1	X		

Common Name	*Scientific Name*	Total	COMMUNITY NUMBER		
			1	2	3
MINT FAMILY	*LAMIACEAE*				
wild basil	*Clinopodium vulgare*	1		X	
henbit	*Lamium amplexicaule*	1			X
motherwort	*Leonurus cardiaca*	1	X		
catnip	*Nepeta cataria*	2		X	X
heal-all	*Prunella vulgaris ssp. Lanceolata*	1			X
PLANTAIN FAMILY	*PLANTAGINACEAE*				
narrow-leaved plantain	*Plantago lanceolata*	1			X
broad-leaved plantain	*Plantago major*	2	X		X
OLIVE FAMILY	*OLEACEAE*				
white ash	*Fraxinus americana*	1		X	
lilac	*Syringa vulgaris*	1	X		
FIGWORT FAMILY	*SCROPHULARIACEAE*				
butter-and-eggs	*Linaria vulgaris*	1	X		
HAREBELL FAMILY	*CAMPANULACEAE*				
creeping bellflower	*Campanula rapunculoides*	1			X
MADDER FAMILY	*RUBIACEAE*				
rough bedstraw	*Galium asprellum*	1			X
HONEYSUCKLE FAMILY	*CAPRIFOLIACEAE*				
Morrow's honeysuckle	*Lonicera morrowii*	1		X	
tartarian honeysuckle	*Lonicera tatarica*	1		X	
ASTER FAMILY	*ASTERACEAE*				
common yarrow	*Achillea millefolium*	2	X		X
common ragweed	*Ambrosia artemisiifolia L.*	1	X		
common burdock	*Arctium minus*	2	X		X
ox-eye daisy	*Chrysanthemum leucanthemum*	1			X
chicory	*Cichorium intybus*	2		X	X
Canada thistle	*Cirsium arvense*	2	X	X	
bull thistle	*Cirsium vulgare*	2	X	X	
daisy fleabane	*Erigeron annuus*	2		X	X
prickly lettuce	*Lactuca serriola*	1		X	
pineapple weed	*Matricaria matricarioides*	1	X		
tall goldenrod	*Solidago altissima*	2		X	X
Canada goldenrod	*Solidago canadensis*	3	X	X	X
spiny-leaved sow thistle	*Sonchus asper*	3	X	X	X
heart-leaved aster	*Symphyotrichum cordifolium*	1		X	
frost-weed aster	*Symphyotrichum ericoides var.pansu*	3	X	X	X
panicled aster	*Symphyotrichum lanceolatum ssp.he*	2		X	X
New England aster	*Symphyotrichum novae- angliae*	2		X	X
common dandelion	*Taraxacum officinale*	3	X	X	X
goat's-beard	*Tragopogon dubius*	1			X
coltsfoot	*Tussilago farfara*	1	X		

Common Name	*Scientific Name*	Total	COMMUNITY NUMBER		
			1	2	3
RUSH FAMILY	*JUNCACEAE*				
path rush	*Juncus tenuis*	1	X		
GRASS FAMILY	*POACEAE*				
awnless brome grass	*Bromus inermis ssp.inermis*	1	X		
orchard grass	*Dactylis glomerata*	2	X		X
smooth crabgrass	*Digitaria ischaemum*	1	X		
reed canary grass	*Phalaris arundinacea*	1	X		
Kentucky blue grass	*Poa pratensis*	2	X		X
LILY FAMILY	*LILIACEAE*				
European Solomon's seal	*Polygonatum multiflorum*	1	X		
ORCHID FAMILY	*ORCHIDACEAE*				
helleborine	*Epipactis helleborine*	2	X	X	
Total Number of Plant Species	82		49	39	42
			Number of Plant Species Per Community		

Appendix B

Bird Status Report

APPENDIX 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. Breeding status and breeding evidence code are listed when observed. 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**	The Committee on the Status of Endangered Wildlife in Canada, October 2021.
	COSSARO	The Committee on the Status of Species at Risk in Ontario, June 2021.
	SARA	Species At Risk Act, Schedule 1, Government of Canada, February 2022.
	Area Sensitive	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 GHD)

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.

Breeding Evidence Code: (Observed By GHD)

OBSERVED
X -species observed in its breeding season (no evidence of breeding).

POSSIBLE BREEDING
H -species observed in its breeding season in suitable nesting habitat
S -singing male present, or breeding calls heard, in its breeding season in suitable nesting habitat

PROBABLE BREEDING
P -pair observed in their breeding season in suitable nesting habitat
T -permanent territory presumed through registration of territorial song on at least 2days, a week or more apart, at the same place
D -courtship or display between a male and a female or 2 males, including courtship feeding or copulation
V -visiting probable nest site
A -agitated behaviour or anxiety calls of an adult
B -brood patch on adult female or cloacal protuberance on adult male
N -nest-building or excavation of nest hole

CONFIRMED BREEDING
DD -distraction display or injury feigning
NU -used nest or egg shell found (occupied or laid within the period of study)
FY -recently fledged young or downy young, including young incapable of sustained flight
AE -adults leaving or entering nest site in circumstances indicating occupied nest
FS -adult carrying fecal sac
CF -adult carrying food for young
NE -nest containing eggs
NY -nest with young seen or heard

SOURCE: Ontario Breeding Bird Atlas March 2001

AOU Code	Common Name	Scientific Name	Observed Breeding Status	Breed Evidence Code	COSEWIC	COSSARO	SARA	Area Sensitive	Region 6		
AMKE	American Kestrel	*Falco sparverius*	F	None				No			
RBGU	Ring-billed Gull	*Larus delawarensis*	F	None				No			
MODO	Mourning Dove	*Zenaida macroura*	B	H				No			
BLJA	Blue Jay	*Cyanocitta cristata*	B	FY				No			
BARS	Barn Swallow	*Hirundo rustica*	F	None	THR	THR	THR	No			
BCCH	Black-capped Chickadee	*Poecile atricapillus*	B	None				No			
HOWR	House Wren	*Troglodytes aedon*	B	S				No			
AMRO	American Robin	*Turdus migratorius*	B	FY				No			
EUST	European Starling	*Sturnus vulgaris*	B	CF				No			
CEWX	Cedar Waxwing	*Bombycilla cedrorum*	B	None				No			
SOSP	Song Sparrow	*Melospiza melodia*	B	S				No			
NOCA	Northern Cardinal	*Cardinalis cardinalis*	B	S				No			
RWBL	Red-winged Blackbird	*Agelaius phoeniceus*	B	S				No			
COGR	Common Grackle	*Quiscalus quiscula*	B	H				No			
BHCO	Brown-headed Cowbird	*Molothrus ater*	B	P				No			
HOSP	House Sparrow	*Passer domesticus*	B	CF				No			
TOTAL SPECIES OBSERVED:	**16**	**BREEDING SPECIES OBSERVED:**	**13**		**1**	**1**	**1**	**0**	**0**	**0**	**0**

Appendix C

Mammal Status Report

APPENDIX C Mammal Status Report

Mammal species observed by GHD are listed. These species are identified by the common and scientific name used by the Natural heritage information Centre (NHIC). 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**	The Committee on the Status of Endangered Wildlife in Canada, October, 2021.
	COSSARO	The Committee on the Status of Species at Risk in Ontario, January, 2021.
	SARA	Species At Risk Act, Schedule 1, Government of Canada, 2022.
	Area Sensitive	Significant Wildlife Technical Guide, Appendix C, OMNR, Oct. 2000

Common Name		Scientific Name	COSEWIC	COSSARO	SARA	Area Sensitive
Red Squirrel		*Tamiasciurus hudsonicus*				No
Red Fox		*Vulpes vulpes*				No
Eastern Gray Squirrel (Gray Phase)		*Sciurus carolinensis*				No
No. of Species Observed in Projec	3		**0**	**0**	**0**	**0**

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