



HIDDEN RIDGE GOLF COURSE PROPERTY  
PLAN OF SUBDIVISION, PHASE 2  
PART OF LOT 24 and 25, CONCESSION 3  
TOWNSHIP OF UXBRIDGE, REGION OF DURHAM

NATURAL HERITAGE EVALUATION

**Prepared for:** China Canada Jing Bei Xin Min Intl.Co Ltd.  
**Submitted by:** Niblett Environmental Associates Inc.  
**File:** PN 17-076  
**Date:** April 2020

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**Niblett Environmental Associates Inc.**  
Biological Consultants

April 9<sup>th</sup> 2020

PN 17-076

China Canada Jing Bei Xin Min Intl. Co. Ltd.  
118 Gemini Crescent  
Richmond Hill, Ontario  
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**SUBJECT: HIDDEN RIDGE GOLF COURSE PROPERTY  
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NATURAL HERITAGE EVALUATION**

Dear Mr. Zhang,

Please find enclosed the Natural Heritage Evaluation (NHE) report for the proposed residential development on the abandoned golf course located in the Hamlet of Zephyr.

We have completed the necessary biological inventories and assessments. This report includes an assessment of the potential impacts of the draft plan of subdivision on the adjacent natural heritage features, outlines the required setback and buffers, and includes recommendations for mitigation.

Please contact our office if you have any questions or require further project support.

Sincerely,

A handwritten signature in blue ink, appearing to read "C. Ellingwood", is written over a light blue circular stamp.

Chris Ellingwood  
President and Sr. Terrestrial and Wetland Biologist

## ACKNOWLEDGEMENT

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**HIDDEN RIDGE GOLF COURSE PROPERTY  
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TOWNSHIP OF UXBRIDGE, REGION OF DURHAM**

**NATURAL HERITAGE EVALUATION**

## **1.0 Introduction**

### **1.1 Background**

Niblett Environmental Associates Inc. (NEA) has been retained by China Canada Jing Bei Xin Min Intl. Co. Ltd. to complete a Natural Heritage Evaluation (NHE) for a proposed residential development on abandoned Hidden Ridge Golf course located on Part Lot 24 and 25, Concession 3 in the Hamlet of Zephyr. The Natural Heritage Evaluation is required as the proposed development is within the Greenbelt Plan area and adjacent to a provincially significant wetland (PSW), the Zephyr-Egypt Wetland Complex. The report must meet the requirements of the Greenbelt Plan and the Township of Uxbridge Official Plan and zoning bylaws. The current report is for Phase 1 of the development even though it includes all our field data. Phase 2 submission will include an addendum EIS for any changes to the layout or the lotting that would occur. We have included recommendations for Phase 2 to assist in that process.

### **1.2 Location and Study Area**

The property is located 309 Zephyr Road, southeast of the corner of Zephyr Road and 3<sup>rd</sup> Concession Road and is described as Part of Lots 24 and 25, Concession 3 in the Hamlet of Zephyr in the Region of Durham. The subject property totals an area of approximately 100 acres. The study area for this EIS includes the western portion of the property, which includes former golf course grounds, hedgerows, open field meadows, unnamed ponds, and the edge of wetland and woodland features, equaling approximately 47 acres. The study area excludes the large-scale natural features associated with the Zephyr-Egypt Wetland Complex PSW that encompasses the eastern portion of the property, as those features are protected and will remain undeveloped.

### 1.3 Applicable Policies

#### Provincial Policy Statement

The 2014 Provincial Policy Statement (PPS) states that proposals shall be consistent with a policy that permits development adjacent to significant wetlands, significant valleylands, significant woodlands and watercourses if it has been demonstrated that there will no negative impacts on the natural features or on their ecological functions. It is also stated that the connections between natural features should be maintained and enhanced.

#### Growth Plan for the Greater Golden Horseshoe

The project is located within the area of the Growth Plan. *To address these challenges and ensure the protection and effective use of finite resources, A Place to Grow Plan, together with the Greenbelt Plan, Oak Ridges Moraine Conservation Plan, and the Niagara Escarpment Plan, builds on the Provincial Policy Statement (PPS) to establish a unique land use planning framework for the GGH that supports the achievement of complete communities, a thriving economy, a clean and healthy environment, and social equity.* As the site is also in the Greenbelt Plan area, that plan is more restrictive regarding natural features. The Growth Plan does not include natural heritage features within urban settlement boundaries.

#### Greenbelt Plan

The Greenbelt Plan (2017) map 14 shows that the study area is within the 'Protected Countryside' area. In addition, the natural features in the east portion of the subject property is mapped as part of the Natural Heritage System.

#### Durham Region Official Plan

Schedule 'A' – Map 'A2' (Regional Structure) designates the property as "Hamlet". Schedule B – Map 'B1b' – greenbelt Natural Heritage System and Key Natural Heritage and Hydrologic Features shows the property (eastern half) contains a portion of and is adjacent to Key Natural Heritage and Hydrologic Features and Greenbelt Natural Heritage System.

Guidelines under the Greenbelt Plan, Section 3.2.2: Natural Heritage System Policies were also followed. Furthermore, Section 6.26 of the Lake Simcoe Protection Plan identifies the guidelines of the Natural Heritage Evaluation.

The Greenbelt Plan requires the completion of a Natural Heritage Evaluation when development is proposed within or in the area of influence of a key natural heritage feature. The property is also within the Regulated Area of LSRCA.

#### Township of Uxbridge Official Plan

Schedule 'A6' Zoning By-law map (Detail of Zephyr Area) indicates the property is zoned Open Space (OS) with the eastern half of the property zoned Environmental Protection (EP).

#### 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.

## **2.0 Study Approach**

### **2.1 General Approach**

Our approach to preparation of the NHE consisted of four distinct phases. In the first phase, NEA will collect available information on the site including recent air photography, Township of Uxbridge Official Plan, Greenbelt Plan land use and key natural features GIS mapping, MNRFS GIS database mapping and woodland layers and other correspondence or files.

The second phase consisted of a site visit by our terrestrial, wetland and fisheries biologists to confirm the data collected in the literature review and the wetland on the property. Surveys included fish community sampling, aquatic habitat assessment, wildlife area searches, breeding bird surveys, Ecological Land Classification (ELC) mapping, vegetation community and wetland boundaries and presence of significant species including Species at Risk (SAR).

The third phase consisted of preparing an NHE report based upon both the literature and field surveys completed and following the requirements in the Township of Uxbridge Official Plan, Town zoning bylaw and the Greenbelt Plan for an NHE report. As there are several features identified, NEA will map all of the features. The report will focus on the maintenance of these features and their functions. The impact assessment and mitigation measures will focus on the wetland and ANSI, maintaining water infiltration, wildlife issues and natural linkage and corridors in the area. The report will identify planning, design and construction practices that will maintain or enhance the identified features and functions in this area of the Greenbelt.

The final phase will include a review of our NHE report by the Township of Uxbridge and the Lake Simcoe Region Conservation Authority.

### **2.2 Detailed Study Methodology**

#### **2.2.1 Vegetation**

Background information was collected from the Ministry of Natural Resources and Forestry (MNRFS), Natural Heritage Information Centre (NHIC) and ORMCP key natural heritage feature mapping and Natural Features mapping (Gov. of Ontario, 2002).

In the second stage, plants were inventoried during the field visits on June 27<sup>th</sup> and July 6<sup>th</sup>, 2017. All trees, shrubs and herbaceous plants encountered in the study area were

inventoried during the site visit. 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. 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)

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 (2019), COSEWIC (2019), COSSARO (2018), Ontario Endangered Species Act (2008), OMNR (1993/2000), and Varga et al. (2000).

### 2.2.2 Birds

Background information was collected from the 1<sup>st</sup> and 2<sup>nd</sup> Atlas of the Breeding Birds of Ontario (Cadman et al., 1987 and OBBA, 2005) for the 10 x 10 km atlas square (17QK04) that contains the study area. Records of any vulnerable, threatened or endangered species were collected from the NHIC database.

Breeding bird surveys were conducted by NEA biologists on June 27<sup>th</sup> and July 6<sup>th</sup>, 2017, during the peak of the breeding bird window (May to August). Incidental observations were recorded for all birds, herpetozoa and mammal species. All habitats in the study area were surveyed.

### 2.2.3 Wildlife

Records of any vulnerable, threatened or endangered species were collected from the NHIC database.

Incidental observations of mammals and herpetofauna were made during all surveys. Observations included direct sightings and indirect evidence such as calls, tracks, scat, burrows, dens and browse. Species significance on a national, provincial, regional and local level was based on published literature and current status lists. These included COSEWIC (2019), COSSARO (2018), ESA (2007 and updates).

### 2.2.4 Fish and Aquatic Habitat

The aquatic habitat was assessed on August 21<sup>st</sup> 2017 using standardized provincial and federal protocols using; Ministry of Transportation: Environmental Guide for Fish and Fish

Habitat and Ontario Stream Assessment Protocol: Site Features (Stanfield, 2010; MTO, DFO,OMNR, 2013). Aquatic habitat was quantified and characterized based on local substrate composition, vegetation, flow influence and condition, sediment transport, cover, channel morphology, groundwater indicators, riparian habitat, barrier presence and form, land use and landscape influences, human modifications and unique features.

Surface water quality was collected on August 21<sup>st</sup>, 2017, biologists measured surface water quality parameters with a handled YSI Professional Plus System. The following parameters were measured: dissolved oxygen (mg/L), conductivity (us/cm), total dissolved solids (mg/L), salinity (ppt) and water temperature (°C). The pH was recorded with a handheld waterproof pH meter and turbidity was recorded with a handheld LaMotte2020.

#### 2.2.5 Fish Community

Fish community sampling was conducted on August 21<sup>st</sup>, 2017, using a Smith-Root Model 24 backpack electrofisher using the single pass technique in one of the unnamed ponds (Stanfield, 2010). A seine net was used in the second unnamed pond along the pond shoreline edge in wadable habitat. Seine net dimension were 4.5 m x 1.2 m with a bag 0.9 m (wide) x 1.2 m (deep) x 1.2 m (height).

At each site, the total length (mm) and weight (g) were recorded for the first ten individuals of each species at each site. The remaining individuals for each species were counted and weighed in bulk.

### **3.0 Resource Inventory**

#### **3.1 Site Characteristics**

The topography of the surrounding area is rolling and generally drains east into the Zephyr-Egypt Wetland Complex PSW. The subject property is approximately 44 acres in size and includes an abandoned / unmaintained golf course and associated buildings and laneways. The surrounding lands include residential and rural developments, as well as natural areas. The proposed subdivision is located in the cleared area associated with the previous golf course lands.

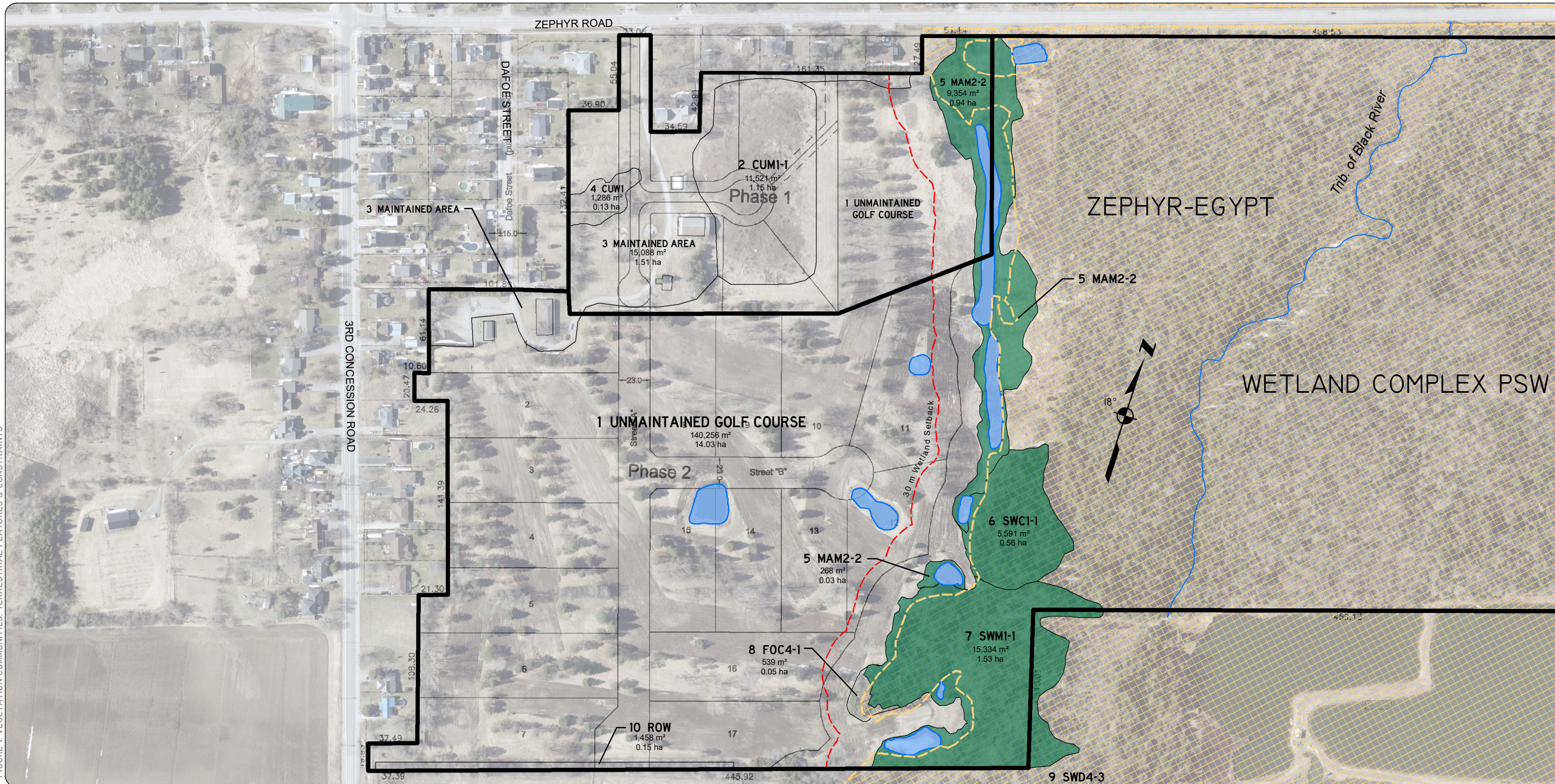
#### **3.2 Vegetation**

Ten (10) vegetation communities were identified within the study area. Each community is described below and illustrated in Figure 1.

A total of 163 plant species were identified. The majority of these are common species, typical of rural, edge, wetland and woodland communities. A complete plant list is found in Appendix I-A.



FIGURE 1: VEGETATION COMMUNITIES, TERRESTRIAL FEATURES & CONSTRAINTS



GEOPDF ENABLED FOR MOBILE USE

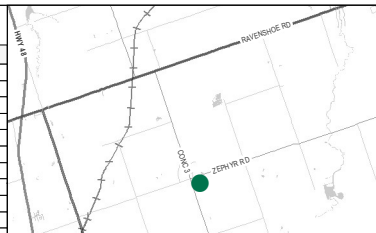
**LEGEND**

- 30 m Setback (NEA)
- Watercourse (NEA)
- Phase Limit (Ecovue, 2017)
- Vegetation Community
- Wetland Community
- Waterbody (NEA)
- Wetland, PSW (MNR, 2020)

1 CUM1-1	Vegetation community label
1,045 m <sup>2</sup>	Vegetation community area description
0.45 ha	

**ELC TYPES (1ST APPROXIMATION)**

ELC CODE	ECOSITE/VEG TYPE DESCRIPTION
CUM1-1	DRY-MOIST OLD FIELD MEADOW
CUWI	MINERAL CULTURAL WOODLAND
FOC4-1	FRESH-MOIST WHITE CEDAR CONIFEROUS FOREST
MAM2-2	REED-CANARY GRASS MINERAL MEADOW MARSH
SWC1-1	WHITE CEDAR MINERAL CONIFEROUS SWAMP
SWD4-3	WHITE BIRCH-POPLAR MINERAL DECIDUOUS SWAMP
SWM1-1	WHITE CEDAR-HARDWOOD MINERAL MIXED SWAMP



Inset points north unless otherwise stated.

**REVISION & WORK HISTORY**

REV.	BY	DATE	DESCRIPTION	REQUEST
REV-0	W.P.	2018-05-15	INITIAL MAP CREATION.	C.E.
REV-1	W.P.	2018-05-16	CHANGED MAM2-1 TO MAM2-2.	C.E.
REV-2	W.P.	2020-05-26	UPDATED TEMPLATE, ORTHOPHOTOGRAPHY AND SITE PLAN.	K.R.
REV-3	W.P.	2020-04-16	ADDED COMMUNITY 9.	K.R.

CONTACT: WILL FRIDHAM, <i>W.F.</i> / Geographer	PROJECT NO: PN 17-076	ORIGINAL DATE: 2018-05-15	<b>UTM ZONE</b> <b>17N</b>
PHONE: 1.705.878.9399 x207	PROJECT: ZEPHYR DEVELOPMENT	RECENT DATE: 2020-04-16	
EMAIL: WFRIDHAM@NIBLETT.CA	CLIENT: ECOVUE CONSULTING SERVICES INC	REVISION: REV-3	

**FIGURE 1: VEGETATION COMMUNITIES, TERRESTRIAL FEATURES & CONSTRAINTS**

PT LOTS 24 & 25, CON 3, TOWNSHIP OF UXBRIDGE  
REGION OF DURHAM  
AURORA MNR DISTRICT

SCALE  
**1 cm : 28 meters**  
(1 inch : 233 feet)



**Community 1: Unmaintained Golf Course (no ELC code applicable)**

This community represents the central portion of the study area, which has been used as a golf course in the past and is now unmaintained. The area is characterized by grassy areas interspersed with patches and rows of trees. Trees in this community include red pine (*Pinus resinosa*), Scot's pine (*P. sylvestris*), white spruce (*Picea glauca*), weeping willow (*Salix babylonica*), Norway maple (*Acer platanoides*), sugar maple (*A. saccharum ssp. saccharum*), and silver maple (*A. saccharinum*). The ground layer is generally dominated by grasses, including red fescue (*Festuca rubra*), Kentucky bluegrass (*Poa pratensis*), fowl meadow grass (*P. palustris*), awnless brome grass (*Bromus inermis*), timothy (*Phleum pretense*), and quackgrass (*Elymus repens*). In addition, a number of common forbs typical of disturbed sites have begun to colonize the area such as common dandelion (*Taraxacum officinale*), white clover (*Trifolium repens*), tall buttercup (*Ranunculus acris*), Queen Anne's lace (*Daucus carota*), bird's-foot trefoil (*Lotus corniculatus*) and broad-leaved plantain (*Plantago major*).



Photo 1: Community 1 (Photo Date: July 6, 2017).

**Community 2: Dry – Moist Old Field Meadow (CUM1-1)**

Community 2 represents an old field area previously used for agricultural purposes, in the north end of the subject property (Phase 1 area). In summer of 2017, this area was regenerating with common field and edge species that are tolerant of disturbance. The area is dominated by forbs, including Canada goldenrod (*Solidago canadensis*), tall goldenrod (*S. altissima*), Queen Anne's lace, common dandelion, broad-leaved plantain, common yarrow (*Achillea millefolium*), daisy fleabane (*Erigeron annuus*), Canada thistle (*Cirsium arvense*), common burdock (*Arctium minor*) and swallow-wort (*Cynanchum rossicum*), with grasses such as awnless brome grass, Kentucky bluegrass, timothy and orchard grass (*Dactylis glomerata*) also present. Some young Manitoba maple regeneration has also begun in this area.



Photo 2: Community 2 (Photo Date: July 6, 2017).

**Community 3: Maintained Area Around Buildings (No ELC Code Applicable)**

This community is confined to the area immediately adjacent to the existing buildings and laneway at the north end of the subject property (Phase 1 area). Several tree species are present including Manitoba maple, Norway maple and eastern white cedar (*Thuja occidentalis*). The scattered understory includes staghorn sumac (*Rhus typhina*), European buckthorn (*Rhamnus cathartica*), lilac (*Syringia vulgaris*), wild red raspberry (*Rubus idaeus*), Virginia creeper (*Parthenocissus inserta*) and wild grape (*Vitis riparia*). The ground cover is dominated by common lawn and field species such as awnless brome grass, Kentucky bluegrass, bird's-foot trefoil, Canada thistle, Queen Anne's lace, common dandelion, tall buttercup, broad-leaved plantain, narrow-leaved plantain (*Plantago lanceolata*), white clover, cow vetch (*Vicia cracca*), common milkweed (*Asclepias syriaca*), common yarrow and swallow-wort.



Photo 3: Community 3 (Photo Date: July 6, 2017).

**Community 4: Mineral Cultural Woodland (CUW1)**

Community 4 represents a small isolated woodland area near the north end of the subject property (Phase 1 area). It is dominated by exotic species. The canopy is limited to Manitoba maple, Norway maple and hybrid butternut (*Juglans x sp.*). A NEA biologist who is also a certified Butternut Health Assessor (BHA #527) assessed each tree to confirm its hybridity based on the field characteristics in the MNR assessment protocol – no true butternut (*Juglans cinerea*) were found. The understory includes some wild red raspberry and European buckthorn with Virginia creeper. The ground cover is limited to a few common species including swallow-wort, tall goldenrod, common dandelion, common burdock, yellow avens (*Geum aleppicum*) and dog violet (*Viola conspersa*).



Photo 4: Community 4 (Photo Date: July 6, 2017).



**Community 5: Reed Canary Grass Mineral Meadow Marsh (MAM2-2)**

Community 5 represents the portion of the Zephyr-Egypt Wetland Complex PSW directly adjacent to the unmaintained golf course area at the north end of the subject property (portions of Phase 1 and 2 areas). The bulk of this community is dominated by reed canary grass (*Phalaris arundinacea*), with spotted jewelweed (*Impatiens capensis*) and late goldenrod (*Solidago gigantea*) dominating the transitional edge areas, and other common species scattered throughout including coltsfoot (*Tussilago farfara*), field horsetail (*Equisetum arvense*), common cattail (*Typha latifolia*), grass-leaved goldenrod (*Euthamia graminifolia*), marsh bedstraw (*Galium palustris*), swamp milkweed (*Asclepias incarnata*), calico aster (*Sypmyotrichum lateriflorum* var. *lateriflorum*) and tall white aster (*S. lanceolatum* ssp. *lanceolatum*). Scattered trees and shrubs include Manitoba maple, Freeman's maple (*Acer x freemanii*), American elm, balsam poplar (*Populus balsamifera*), slender willow (*Salix petiolaris*), Bebb's willow (*S. bebbiana*), pussy willow (*S. discolor*), and red-osier dogwood (*Cornus stolonifera*). The ponded areas in the central portion of Community 5 include aquatic species such as common duckweed (*Lemna minor*), common waterplantain (*Alisma plantago-aquatica*), water horsetail (*Equisetum fluviatile*), wild mint (*Mentha arvensis*), American brooklime (*Veronica americana*), and cursed crowfoot (*Ranunculus scleratus*).



Photo 5: Community 5 (Photo Date: July 6, 2017).

**Community 6: White Cedar Mineral Coniferous Swamp (SWC1-1)**

This community is located in the southeast portion of the subject property and comprises a part of the Zephyr-Egypt Wetland Complex PSW. The canopy in this community is dominated by eastern white cedar, though other trees are scattered throughout, including Manitoba maple, red maple (*Acer rubrum*), white birch (*Betula papyrifera*), and American elm (*Ulmus americana*). The understory includes European buckthorn, wild red raspberry, choke cherry (*Prunus virginiana*), alternate-leaved dogwood (*Cornus alternifolia*), and American black currant (*Ribes americanum*). The ground layer is rich in ferns and forbs typical of cedar swamps, such as spotted jewelweed, bulbet bladder fern (*Cystopteris bulbifera*), sensitive fern (*Onoclea sensibilis*), Canada mayflower (*Maianthemum canadense*), ostrich fern (*Matteuccia struthiopteris*), wild sarsaparilla (*Aralia nudicaulis*), and northern lady fern (*Athyrium felix-femina*).



Photo 6: Community 6 (Photo Date: July 6, 2017).



**Community 7: White Cedar – Hardwood Mineral Mixed Swamp (SWM1-1)**

This community is located in the southeast corner of the subject property and comprises a part of the Zephyr-Egypt Wetland Complex PSW. The canopy in this community includes a mix of eastern white cedar, Manitoba maple, trembling aspen (*Populus tremuloides*) and balsam poplar. The understory includes European buckthorn, choke cherry and alternate-leaved dogwood. The ground layer is similar to that of Community 6 including spotted jewelweed, bulbet bladder fern, and sensitive fern, as well as Canada enchanter's nightshade (*Circaea lutetiana ssp. canadensis*), fowl manna grass (*Glyceria striata*), Jack-in-the-pulpit (*Arisaema triphyllum*), and rice cut grass (*Leersia oryzoides*).



Photo 7: Community 7 (Photo Date: July 6, 2017).



**Community 8: Fresh – Moist White Cedar Coniferous Forest (FOC4-1)**

Community 8 represents a small upland forest area that is contiguous with the mixed swamp of Community 7, in the southeast corner of the subject property. The canopy in this community is dominated by eastern white cedar, with some scattered Manitoba maple and American basswood (*Tilia americana*) also present. The understory is limited to European buckthorn. The ground layer in this community is very sparse, which is typical of dense cedar stands, where little light can penetrate to the forest floor. Species present include herb Robert (*Geranium robertianum*), common dandelion, garlic mustard (*Alliaria petiolata*), Canada enchanter's nightshade, yellow avens, Canada goldenrod and tall buttercup.



Photo 8: Community 8 (Photo Date: July 6, 2017).

**Community 9: Poplar Mineral Deciduous Swamp (SWD4-3)**

Community 9 is located at the southern boundary of the subject property. The canopy in this community includes abundant trembling aspen with occasional black walnut (*Juglans nigra*), black ash (*Fraxinus nigra*), eastern white cedar, scattered white willow (*Salix alba*), Manitoba maple, American elm, white birch, balsam fir (*Abies balsamea*) and white spruce (*Picea glauca*). The understory includes red-osier dogwood, European buckthorn, tartarian honeysuckle (*Lonicera tatarica*), wild grape and Virginia creeper. The ground layer is fairly diverse, characterized by abundant spotted jewelweed and sensitive fern with frequent fowl manna grass and purple-stemmed aster (*Symphyotrichum puniceum*) and occasional swallow-wort, late goldenrod and rice cut grass.



Photo 9: Community 9 (Photo Date: July 6, 2017).

**Community 10: Deciduous Hedgerow (No ELC Code Applicable)**

Community 10 represents a young hedgerow that runs along the south edge of the subject property. This hedgerow is dominated by European buckthorn, with a scattered canopy of Manitoba maple, eastern white cedar, trembling aspen, American basswood and small leaf linden (*Tilia cordata*). The ground layer is limited to a few common species such as Canada goldenrod, swallow-wort, tall buttercup and Canada thistle (*Cirsium arvense*).



Photo 8: Community 8 (Photo Date: July 6, 2017).



### 3.3 Birds

A total of 36 bird species were observed during field surveys in 2017 including common rural, edge and woodland species such as American robin (*Turdus migratorius*), black-capped chickadee (*Poecile atricapillus*), European starling (*Sturnus vulgaris*), cedar waxwing (*Bombycilla cedrorum*), yellow warbler (*Dendroica petechia*), common yellowthroat (*Geothlypis trichas*), chipping sparrow (*Spizella passerina*), song sparrow (*Melospiza melodia*), northern cardinal (*Cardinalis cardinalis*) and American goldfinch (*Carduelis tristis*) (Appendix II).

### 3.4 Wildlife

A total three mammal species were observed by NEA biologists during the surveys in 2017 - eastern cottontail (*Sylvilagus floridanus*), white-tailed deer (*Odocoileus virginianus*) (tracks), and eastern chipmunk (*Tamias striatus*). It is likely that the study area also supports a suite of other mammal species common to rural and edge habitats that were not observed, such as coyote (*Canis latrans*), eastern gray squirrel (*Sciurus carolinensis*), red squirrel (*Tamiasciurus hudsonicus*) and red fox (*Vulpes vulpes*).

NEA biologists also recorded six herpetozoa species - American bullfrog (*Lithobates catesbeianus*), green frog (*Rana clamitans*), grey treefrog (*Hyla versicolor*), northern leopard frog (*Lithobates pipiens*), snapping turtle (*Chelydra serpentina*) and midland painted turtle (*Chrysemys picta marginata*). The frogs were heard and/or seen in various locations throughout the site. The snapping turtle was found in the Habitat Zone 1 pond, and midland painted turtles were seen in the Habitat Zone 1 and Habitat Zone 2 ponds, both located within vegetation Community 1 (i.e., the central golf course area).

### 3.5 Fish and Aquatic Habitat

#### 3.5.1 Aquatic Habitat Assessments

There were several unnamed ponds located within the study area. These pond were likely manmade for the purpose of the golf course. The study area is part of the Black River subwatershed, one of the healthiest subwatersheds in the Lake Simcoe basin. The Black River subwatershed occupies 375km<sup>2</sup> of lands south of the eastern portion of Lake Simcoe. The main tributaries in the subwatershed include: Harrison Creek, Mount Albert Creek, Vivian Creek and Zephyr Creek. These watercourses mainly flow through natural features and agricultural areas before reaching Sutton, Ontario and out letting into Lake Simcoe (LSRCA, 2010).

The study area was classified into eight aquatic habitat zones (Habitat Zone 1-8). Habitat zones are established based on barriers, difference in substrate composition, riparian habitat, percent in-stream cover, hydrological connection and unique features. The aquatic habitat zone locations have been illustrated in Figure 2 and their attributes have been summarized in Table 1.

### Habitat Zone Descriptions

Habitat Zone 1 was located in the one of the northeastern ponds (Figure 2) and had an area of approximately 672 m<sup>2</sup>. The pond was isolated and not connected to any other waterbodies within the study area, therefore preventing fish movement to and from the other ponds. The substrate was entirely composed of fine organics with a minimum water depth of 0.1 m and maximum water depth of 1.2 m. The overhead cover was low consisting of non-woody vegetation. The instream cover was dense consisting of submergent, emergent and floating aquatic vegetation (Table 1). The dominant vegetation species include Eurasian water-milfoil (*Myriophyllum spicatum*), stonewort (*Chara spp.*), common floating pondweed (*Potamogeton natans*) and common cattail (*Typha latifolia*). Please refer Section 4.2 Community 1 for full vegetation community details. Biologists noted the presence of fish within this zone.



Photo 9: Habitat Zone 1, photo showing unnamed pond, riparian and in-water habitat. Photo facing northwest (Photo Date: August 21<sup>st</sup> 2017).







Habitat Zone 2 was located in an unnamed pond approximately 97 m west of Habitat Zone 1 (Figure 2) the unnamed pond had a total area of approximately 884 m<sup>2</sup>. The pond was isolated and not connected to any other waterbodies within the study area, therefore preventing fish movement to and from the other ponds. The substrate was entirely composed of fine organics with a minimum water depth of 0.1 m and maximum water depth of 1.5 m. The overhead cover was sparse consisting of non-woody vegetation. The instream cover was dense with submergent aquatic vegetation (Table 1). The dominant species include needle spike-rush (*Eleocharis acicularis*) and stonewort (*Chara spp*). Please refer Section 4.2 Community 1 for full vegetation community details. Biologist noted the presence of fish within this zone.



Photo 10 (left) and 11 (right): Habitat Zone 2, photo showing unnamed pond, riparian and in-water habitat. Photo facing northwest (Photo Date: August 21<sup>st</sup> 2017).

Habitat Zone 3 was located in an unnamed pond located 100 m northeast of Habitat Zone 1 (Figure 2). The unnamed pond was completely choked out by cattails (*Typha latifolia*) and completely isolated from any other waterbodies within the study area. The substrate was dominated by fine organics with a minimum water depth of 0.1 m and a maximum water depth of 0.3 m. The overhead and instream cover was dense completely composed of cattails (Table 1). Biologists noted that there were no fish observed in the pond and there was only a few pockets of standing water. Please refer Section 4.2 Community 1 for full vegetation community details.



Photo 12a: Habitat Zone 3, photo showing unnamed pond (outlined in red) and riparian habitat. Photo facing northeast (Photo Date: August 21<sup>st</sup> 2017).



Photo12b: Habitat Zone 3, photo showing dense cattails in unnamed pond (Photo Date: August 21<sup>st</sup> 2017).



Habitat Zone 4 was located in an unnamed pond approximately 151 m southeast of Habitat Zone 1 (Figure 2). Similar to the other ponds, the pond was isolated and not connected to any other waterbodies within the study area, therefore preventing fish movement to and from the other ponds. It is located within the White Cedar – Hardwood Mineral Mixed Swamp (Figure 1 - Vegetation Community 7).

The pond had a total area of approximately 382 m<sup>2</sup>. The substrate was dominated by fine organics with a minimum water depth of 0.2 m and a maximum water depth of 1 m. The overhead cover was low consisting of trees, shrubs and non-woody vegetation. The instream cover was dominated by submergent aquatic vegetation (Table 1). The dominant aquatic vegetation species included stonewort (*Chara spp*), common cattail (*Typha latifolia*), broad-fruited bur-reed (*Sparganium eurycarpum*), common coontail (*Ceratophyllum demersum*), swamp milkweed (*Asclepias incarnata*) and narrow-leaved cattail (*Typha angustifolia*). Please refer Section 4.2 Community 7 for full vegetation community details. Biologists noted that fish were not observed in the pond at the time of the assessment.



Photo 13: Habitat Zone 4, photo showing the western portion of unnamed pond, riparian and in-water habitat. Photo facing southwest (Photo Date: August 21<sup>st</sup> 2017).



Photo 14: Habitat Zone 4, photo showing the eastern portion of unnamed pond, riparian and in-water habitat. Photo facing southeast (Photo Date: August 21<sup>st</sup> 2017).

Habitat Zone 5 was located in an unnamed pond approximately 22 m northeast of Habitat Zone 4 (Figure 2). The pond had a total area of 102 m<sup>2</sup>. The pond was isolated and not connected to any other waterbodies within the study area, therefore preventing fish movement to and from the other ponds. It is located within the White Cedar – Hardwood Mineral Mixed Swamp (Vegetation Community 7).

The substrate was dominated by fine organics with a minimum water depth of 1 m and a maximum water depth of 1.5 m. The overhead cover was low consisting of shrubs, trees and overhanging banks. The instream cover was dense with aquatic vegetation and algae (Table 1). The dominant aquatic vegetation species included algae, star duckweed (*Lemna trisulca*), common water-meal (*Wolffia columbiana*), common duckweed (*Lemna minor*), and common cattail (*Typha latifolia*). Please refer Section 4.2 Community 7 for full vegetation community details. Biologists noted that fish were not observed in the pond at the time of the assessment.





Photo 15: Habitat Zone 5, photo showing the unnamed pond, riparian and in-water habitat. Photo facing northeast (Photo Date: August 21<sup>st</sup> 2017).

Habitat Zone 6 was located in an unnamed pond approximately 67 m northwest of Habitat Zone 5 (Figure 2). The pond had a total area of 258 m<sup>2</sup>. The pond was isolated and not connected to any other waterbodies within the study area therefore preventing fish movement to and from the other ponds. It is located within the Reed Canary Grass Mineral Meadow Marsh (Vegetation Community 5).

The substrate was dominated by fine organics with a minimum water depth of 0.1 m and a maximum water depth of 0.5 m. The overhead cover was low with trees, woody debris and non-woody debris. The instream cover was dense with small woody debris, submergent aquatic vegetation, emergent aquatic vegetation and algae (Table 1). The dominant aquatic vegetation species present included stonewort (*Chara spp*), common cattail (*Typha latifolia*) and common reed grass (*Calamagrostis deschampioides*). Please refer Section 4.2 Community 5 for full vegetation community details. Biologists noted that fish were observed in the pond at the time of the assessment.



Photo 16: Habitat Zone 6, photo showing the unnamed pond, riparian and in-water habitat. Photo facing southeast (Photo Date: August 21<sup>st</sup> 2017).

Habitat Zone 7 was located approximately 31 m north of Habitat Zone 6 in an unnamed pond (Figure 2). The pond had a total area of 158 m<sup>2</sup> and was isolated and not connected to any of the other ponds in the study area therefore preventing fish movement to and from the other ponds. However, it is located between Reed Canary Grass Mineral Meadow Marsh and the White Cedar Mineral Coniferous Swamp (Vegetation Community 5 and 6).

The substrate was composed of sand, silt and fine organics, the water depth ranged from 0.1 m to 0.4 m. The overhead cover was moderate consisting of shrubs, trees and woody debris. The instream cover was also moderate with small woody debris and algae. The dominant aquatic vegetation species include: algae, common duckweed (*Lemna minor*), water arum (*Calla palustris*), common cattail (*Typha latifolia*) and straight-leaved pondweed (*Potamogeton strictifolius*). Please refer Section 4.2 Vegetation 5 for full vegetation community details. Biologists noted that fish were not observed in the pond at the time of the assessment.





Photo 17: Habitat Zone 7, photo showing the unnamed pond, riparian and in-water habitat. Photo facing northeast (Photo Date: August 21<sup>st</sup> 2017).

Habitat Zone 8 was located in an unnamed pond approximately 98 m northeast of Habitat Zone 7 (Figure 2) and had a total area of approximately 2,193 m<sup>2</sup>. Due to the size of this pond, biologists were unable to determine the connectivity. This pond was located within the Reed Canary Grass Mineral Meadow Marsh (Vegetation Community 5).

The dominant substrate was fine organics with a minimum water depth of 0.1 m and a maximum water depth of 1 m. The overhead cover was low consisting of shrubs. The instream cover was also considered low with algae and aquatic vegetation. The dominant aquatic vegetation species included common cattail (*Typha latifoli*) and common duckweed (*Lemna minor*). Please refer Section 4.2 Community 5 for full vegetation community details. Biologists noted that fish were not observed in the pond at the time of the assessment.



Photo 18: Habitat Zone 8, photo showing the northern portion unnamed pond, riparian and in-water habitat. Photo facing northeast (Photo Date: August 21<sup>st</sup> 2017).



Photo 19: Habitat Zone 8, photo showing the southern portion unnamed pond, riparian and in-water habitat. Photo facing southeast (Photo Date: August 21<sup>st</sup> 2017).



**Table 1. Aquatic Habitat Observations (August 21st 2017).**

Habitat Zone	Percent Substrate Composition	Percent Instream Cover	Percent Canopy Cover (%)	Overhead Cover	Average Water Depth Range (m)	Zone Area (m <sup>2</sup> )
1	100% fine organics	70% submergent aquatic vegetation 10% emergent aquatic vegetation 5% floating aquatic vegetation	0-24	2% non-woody vegetation	0.1-1.2	672
2	100% fine organics	80% submergent aquatic vegetation	0-24	15% non-woody vegetation	0.1-1.5	884
3	100% fine organics	100% emergent aquatic vegetation	0-24	100% cattails	0.1-0.3	76
4	100% fine organics	2% small woody debris 80% submergent aquatic vegetation	0-24	2% trees 5% woody debris 1% non-woody debris	0.2-1	382
5	100% fine organics	95% floating aquatic vegetation	0-24	5% shrubs 5% trees 5% woody debris 1% overhanging banks	1-1.5	102
6	100% fine organics	80% submergent aquatic vegetation 2% emergent aquatic vegetation	0-24	2% trees 2% woody debris 1% overhanging banks	0.1-0.5	258
7	30% sand 20% silt 50% fine organics	5% small woody debris 5% submergent aquatic vegetation 10% emergent aquatic vegetation 20% floating aquatic vegetation	25-49	5% shrubs 20% trees 10% woody debris	0.1-0.4	158
8	100% fine organics	5% floating aquatic vegetation 5% algae	0-24	10% shrubs	0.1-1	2.19

Surface water quality parameters were collected on August 21<sup>st</sup> 2017 in approximately 0.3 and 0.4m below the surface of the water in the unnamed ponds (Habitat Zones 1 and 2). Surface water quality results have been provided in Table 2 and locations illustrated in Figure 2.

**Table 2. Surface Water Quality Results (August 21<sup>st</sup> 2017).**

Water Quality Parameters	Habitat Zone		Accepted Parameter Range
	1	2	
Environmental Conditions	Clear, sunny, hot, humid, BWS 2.	Clear, sunny, hot, humid, BWS 1.	N/A
Time of Collection (24 hr)	11:00	15:09	N/A
Air Temperature (°C)	30.9	31	N/A
Water Temperature (°C)	22.7	24.5	N/A
Dissolved Oxygen (mg/L)	9.45	10.04	5-8 mg/L
Total Dissolved Solids (mg/L)	193.05	243.10	N/A
Conductivity (us/cm)	284.5	370.4	N/A
Salinity (ppt)	0.14	0.18	N/A
pH	7.42	7.81	6.5-8.5**
Turbidity (NTU)	1.43	1.24	Normal**

Note: BWS=Beaufort wind scale (Government of Canada, 2017), N/A= not applicable and/or specific guidelines not available. \*lowest acceptable range for warm water biota (Canadian Council of Ministers of the Environment, 2002).

The surface water quality parameters collected within the subject lands were within the above acceptable range listed above for aquatic life. The data obtained can be used as baseline and compared to construction and post construction monitoring results to ensure all parameters are maintained within an acceptable range.

### 3.5.2 Fish Community

Existing fish community data was not found for the unnamed ponds within the study area, therefore NEA conducted fish community surveys on August 21<sup>st</sup> 2017 in two of the unnamed ponds (Habitat Zone 1 and 2) (Figure 2). It should be noted that although there was a total of eight unnamed ponds in the study area. Only two ponds were sampled as they are located directly in the development area. The remaining ponds were visually assessed for fish presence during the detailed habitat assessments.

Cumulatively, 96 fish were collected in Habitat Zone 1 (Figure 2). A total of three species made up the fish community and represented the following families: *Cyprinidae* and



*Gasterosteidae*. The fish community was composed of a mixture of cool and warm water fish species that are common to the Black River Sub watershed. The most abundant fish species collected was the Common Carp (*Cyprinus carpio*) and Blacknose Shiner (*Notropis heterodon*), both species had a total count of 44 individuals (Table 3).

The fish species in Habitat Zone 2 was similar to Habitat Zone 1, with a total of 73 fish individuals. The fish community was composed of three species representing the *Cyprinidae* family. The fish community present was made up of cool and warm water fish species that are common to the Black River Sub watershed. The most abundant fish species collected was the Common Carp (Table 3).

A summary of the fish community, environmental conditions and level of effort have been illustrated in Table 3. Detailed results have been provided in Appendix III.



Photo 20: Photo showing Common Carp (*Cyprinus carpio*) collected in Habitat Zone 1 (Photo Date: August 21<sup>st</sup> 2017).



Photo 21: Photo showing Goldfish (*Carassius auratus*) collected in Habitat Zone 2 (Photo Date: August 21<sup>st</sup> 2017).

**Table 3. Fish Community Data for the Unnamed Ponds within the Study Area (August 21<sup>st</sup> 2017).**

Family Name	Common Name	Scientific Name	Preferred Thermal Regime	Spawning Season	Sample Number		
					01	02	
Cyprinidae	Blacknose Shiner	<i>Notropis heterodon</i>	Coolwater	Summer (June-August)	44	9	
	Common Carp	<i>Cyprinus carpio</i>	Warmwater	Spring-Summer (May-August)	44	59	
	Goldfish	<i>Carassius auratus</i>	Warmwater	Spring-Summer (May-July)	0	6	
Gasterosteidae	Brook Stickleback	<i>Culaea inconstans</i>	Coolwater	Spring-Summer (May-July)	7	0	
<b>Fish Catch Summary</b>							
					Abundance	95	74
					Species Diversity	3	3
<b>Incidentals</b>							
Chelydridae	Common Snapping Turtle	<i>Chelydra serpentina</i>	N/A		1	0	
Lithobates	Northern Leopard Frog (tadpole)	<i>Lithobates pipiens</i>	N/A		1	0	
<b>Environmental Conditions</b>							
					Air Temp (°C)	30.9	31
					Stream Temp (°C)	22.7	24.5
<b>Sample Attributes</b>							
					Date (dd-mmm-yy)	21-Aug-17	21-Aug-17
					Gear Type*	SN	EF
					Total Effort	1 haul	7.59 sec/m <sup>2</sup>
					Frequency (hertz)	N/A	70
					Voltage	N/A	350
					Shocker Seconds	N/A	508
					Sample Length (m)	60	33.48
					Average Sample Width (m)	4.5	2

Note: (\*) EF=Electrofisher, SN=Seine Net

## 4.0 Resource Significance

### 4.1 Terrestrial Resources

#### 4.1.1 Designated Features

The study area is located wholly within the Greenbelt Plan 'Protected Countryside' area and natural features in the east portion of the subject property are mapped as part of the Natural Heritage System. The Zephyr-Egypt Wetland Complex PSW lies along the east edge of the proposed development area, which is also mapped as Key Natural Heritage Features and Hydrologic Features in relation to the Greenbelt and Natural Heritage System. The property is also within the Regulated Area of LSRCA.

#### 4.1.2 Vegetation

The NHIC database does not list any plant Species at Risk (SAR) records in this area but does list one provincially 'vulnerable' species ranked S3 - Schweintz's sedge (*Carex schweintzii*). Habitat for Schweintz's sedge is generally in calcareous swamps, marshes and stream sides. Thus, there is some potential for this species to exist within the Zephyr-Egypt Wetland Complex PSW. However, it was not observed on the subject lands.

One of the plant species, the black ash, found by NEA biologists during the field visits in 2017 is considered significant on a national, provincial or local level (Appendix I-B) (COSEWIC, 2019; COSSARO, 2018; SARA, 2018, Riley, 1989). Black ash (*Fraxinus nigra*) is listed as Threatened at a national level (COSEWIC, 2019). It is not listed in Ontario as threatened. As such, the presence of this species on private property does not require an Ontario Endangered Species Act permit, as federal species are only protected when on federal land. No vegetation communities found by NEA biologists during the field visits in 2017 are considered significant on a national, provincial or local level (COSEWIC, 2019; COSSARO, 2018).

#### 4.1.3 Birds

No nationally, provincially or regionally significant bird species were recorded during the field survey in 2017 (Appendix II) (COSEWIC, 2019; COSSARO, 2018). One bird species, yellow-bellied sapsucker (*Sphyrapicus varius*), is considered to be area sensitive (Appendix II). Area-sensitive birds require a minimum hectarage of suitable habitat to maintain its population.

The Ontario Breeding Bird Atlas data for the 10 km x 10 km square that includes the property (17PJ98) includes 13 bird species that are provincially or nationally significant: common nighthawk (*Chordeiles minor*), eastern whip-poor-will (*Antrostomus vociferus*), chimney swift (*Chaetura pelagica*), red-headed woodpecker (*Melanerpes erythrocephalus*), eastern wood-pewee (*Contopus virens*), bank swallow (*Riparia riparia*), barn swallow (*Hirundo rustica*), wood thrush (*Hylocichla mustelina*), golden-winged warbler (*Vermivora chrysoptera*), Canada warbler (*Cardellina canadensis*), grasshopper sparrow (*Ammodramus savannarum*), bobolink (*Dolichonyx oryzivorus*) and eastern meadowlark (*Sturnella magna*). None of these bird species were observed during NEA surveys. The records from the atlas listed above are likely associated with larger natural features found in the broader vicinity of the site including the PSW adjacent to the east.

#### 4.1.4 Wildlife

One wildlife SAR was observed by NEA biologists during the site visit in 2017 – snapping turtle, which is listed as Special Concern both provincially and federally (COSSARO, 2018; COSEWIC, 2019). This species was found in the Habitat Zone 1 pond on August 21<sup>st</sup> 2017. The individual observed was a mature turtle, approximately 0.5 m in length. The pond likely serves as a suitable foraging site, providing summer habitat. No sign of turtle nesting was observed. Given the shallow depth and small size of the pond, it is unlikely to provide over-wintering habitat for turtles. It is probable that critical life-stage habitat (i.e., nesting and over-wintering) for snapping turtle is limited to the adjacent PSW, which provides a much larger and more diverse range of habitat features.

The Ontario Reptile and Amphibian Atlas shows records of two additional SAR herpetofauna - milksnake (*Lampropeltis triangulum*) and Blanding's turtle (*Emydoidea blandingii*) – in the 10 km x 10 km square. Neither of these species were observed during the surveys in 2017. Milksnake was recently delisted in Ontario.

There may be suitable habitat for Blanding's turtle associated with the adjacent PSW, and those ponds, as it uses similar habitat for overwintering and foraging as the more common snapping turtle.

## 4.2 **Fish and Fish Habitat**

The unnamed ponds within the study area do not provide direct fish habitat with the possible exception of Habitat Zone 8 (connectivity is unknown). They are manmade ponds used for irrigation and are off-line ponds. The form and function of HZ8 and the associated wetland will however be protected by the 30m wetland buffer. Fish habitat is managed in Ontario federally by the Minister of Fisheries and Oceans Canada. The Fisheries Act does not apply

to the manmade golf course ponds that are indirect habitat. However it would apply to HZ8 (Figure 2) that is considered direct fish habitat.

The literature review found no provincially and/or nationally rare fish species documented within the study area (COSEWIC, 2019; COSSARO, 2018; SARA, 2019; OMNR, 2012; OMNRF, 2014). In addition, no critical habitat for aquatic SAR (DFO, 2019) or sensitive spawning habitat was identified within the study area (OMNR, 2012). A review of the list of fish species documented for the study area (Appendix III) found that none are considered significant on a national, provincial or regional level (COSEWIC, 2019; COSSARO, 2018). The four species of fish captured are considered common and widespread throughout warm and cool water systems in Ontario.

## **5.0 Description of Proposed Development**

The proposed development includes two phases. Phase 1 is located adjacent to Zephyr Road and is addressed in this report.

Phase 2 is located south of Phase 1 and includes creation of 17 estate lots to be developed with single-family dwellings, as well as roads and servicing.

The impact on the natural features from Phase 2 will be addressed in a separate addendum report. We have included all of our data in this report however, to provide the development team with the constraints and buffers that will assist in future design of that phase. The draft site plan is included in Appendix IV.

## 6.0 Impact Assessment

### 6.1 Key Natural Heritage Features

The key natural heritage features of the property identified in the literature and from NEA field surveys were reviewed and mapped to determine the ecological constraints to the draft plan of subdivision. The following sections provide an assessment of the potential impacts to the natural heritage features present.

#### 6.1.1 Provincially Significant Wetland

The Zephyr-Egypt Wetland Complex PSW is located on the eastern portion of the subject property (i.e. Communities 5, 6, 7 & 9) (Figure 1). The boundary of the wetland on the MNR database is shown on Figure 1 by the yellow dashed line. Based on our field surveys and boundary delineation exercise, the wetland boundary has been expanded to also include adjoining naturalized ponds and wetland features that were previously associated with the golf course. The wetlands provide a number of ecological functions, including their hydrology that supports the water levels that provide for amphibian habitat, fish habitat and wildlife habitat, and act as a wildlife corridor.

Phase 1 has been designed with 7 lots that are situated more than 30 metres, and up to 50 metres from the wetland boundary (Appendix IV and Figure 1). A minimum 30 metre Vegetation Protection Zone (VPZ) is required from the edge of wetlands under the PPS and Growth Plan. The buffer area incorporates the former golf holes that have been abandoned for a number of years. As a result those areas have regenerated in grasses and other herbaceous vegetation with some seedling trees establishing. There are also several trees that were between holes in that buffer zone. It is recommended that this area be left to continue to regenerate. Installation of a permanent fence at the rear of the eastern lots in Phase 1 is recommended to prevent residents from using the buffer or impacting the regenerating occurring from yard waste, mowing or other activities.

This wide buffer would provide a separation between the wetland, the ponds and the developed lots. It will provide a transition zone for wildlife that use the upland-wetland ecotone for various life processes. An appropriate zoning would assist in preventing uses that may impact on the wetland and its functions.

For Phase 2, the plan will need to be revised to remain outside for the required 30 metre buffer/VPZ from the wetland boundary (Figure 1).

### 6.1.2 Significant Woodlands

Significant woodland is present in the southeast portion of the subject property (i.e. Communities 6, 7, 8 & 9 – Figure 1). The woodland is associated with the swamp communities and treed portions of the provincially significant wetland. As the golf course created a defined edge between the maintained fairways and rough and the tree line, the forest edge has been well established. Where the woodland extends beyond the swamp communities it acts as a natural buffer to the PSW, as well as providing wildlife habitat and wildlife corridor functions.

Phase 1 is located beyond the woodland and the wetland boundary by over 50 metres. This provides an adequate buffer to those features.

For Phase 2, a minimum 30 m VPZ is required from the edge of significant woodlands. A revision to those plans is required to meet the minimum setback requirements (Figure 1).

## 6.2 **Species and Communities**

### 6.2.1 Wildlife Habitat and Species at Risk

The Zephyr-Egypt Wetland Complex PSW is a very large wetland and with associated natural areas is part of larger network of natural spaces. This facilitates the movement of wildlife across the landscape. As described in the above sections, there will be no removal of vegetation in this area and appropriate buffers will be put in place in order to ensure that the proposed development has no direct impacts on the wildlife habitat.

This habitat will continue to be suitable for area-sensitive species such as the yellow-bellied sapsucker that was observed on site by NEA biologists in 2017.

The man-made ponds located within and on the edge of the golf course have naturalized to a point that they provide habitat for a number of fish, amphibians, and reptiles. One SAR, the snapping turtle (Special Concern) was found in the Habitat Zone 1 pond on August 21<sup>st</sup> 2017. As described in Section 5.1.4, the pond provides suitable foraging and basking habitat for turtles. However, critical life-stage habitat for this species is generally limited to the PSW area. The draft plan for Phase 2 proposes removal of the Habitat Zone 1 pond. Removal of this feature would result in some loss of habitat for snapping turtle. However, given the expanse of suitable habitat associated with the adjacent PSW, removal of the pond is not anticipated to negatively impact snapping turtle. Appropriate measures will be needed to ensure any animals in the ponds are unharmed and able to relocate/or be relocated to the

main wetland.

### 6.2.2 Fish and Aquatic Habitat

The proposed works in Phase do not require any removal of the existing ponds. The pond located in Habitat Zone 8 is directly connected the Zephyr-Egypt Wetland Complex PSW and will be protected by the recommended 30 m buffer, that extends to 50 metres, avoiding potential negative impacts to fish and fish habitat.

Phase 2 will see the infilling of three ponds (i.e. HZ1, HZ2 and HZ3) within the study area. These ponds do not provide direct fish habitat, are isolated and do not connect to any waterbodies within the study area. However, due to the presence of fish species and sensitive turtle species (snapping turtle) in Habitat Zones 1 and 2, an aquatic and wildlife salvage should be conducted prior to any in-water works to remove all fish and wildlife. The salvaged fish and wildlife should be released alive into one of the ponds with similar habitat characteristics (Refer to Section 8 for details). The infilling of the pond are not protected under the *Fisheries Act* as they are no connected to direct fish habitat.



## 7.0 Mitigation Measures and Recommendations

A number of measures must be integrated into the detailed design and implemented to mitigate for the likelihood and significance of potential adverse environmental effects associated with this project. The following measures will be strictly observed by the construction crews and project managers:

### 7.1 General

- 1) Development envelope for Phase 1 will be clearly defined and delineated/staked in the field prior to any site preparation activities.
- 2) A minimum 30 meter buffer be implemented from the PSW feature (Figure 1).
- 3) The buffer area be zoned appropriately.
- 4) The buffer area be left to regenerate naturally.
- 5) The buffer area is to be clearly defined by a silt fence and temporary fencing. No storage of topsoil, construction equipment or other materials is permitted with no access for construction activities.
- 6) Any clearing or grubbing occur outside of the peak breeding bird timing window (April 15<sup>th</sup>-August 15<sup>th</sup>).
- 7) The Project Manager and Contractor are obligated to ensure that all mitigation measures are strictly observed.
- 8) Construction should be undertaken during normal weather conditions, to the extent possible, and the project shall be designed to appropriate specifications to withstand variable weather conditions.
- 9) Should any SAR be encountered during work related activities, or if there is potential to negatively impact SAR, or wildlife more generally, contact MECP immediately for guidelines on how to proceed
- 10) No in-water works within the pond located in Aquatic Habitat Zone 8.
- 11) A permanent fence be installed in Phase 1 at the rear of the eastern lots to define the rear lot line and the buffer zone from the wetland.

## **7.2 Site Access**

- 1) Existing access routes shall be used to minimize upland vegetation removal and disturbance of surface soils.
- 2) Check heavy equipment, machinery and tools prior to entering the work site to ensure they are clean and free of leaks.
- 3) No machinery will be permitted within 30 m of the PSW, retained ponds or woodland boundary.
- 4) All heavy equipment, machinery, and tools used or maintained for the purpose of this project shall be operated in a manner that prevents any deleterious substance from entering soil, or nearby watercourses.
- 5) Any stockpiled materials will be stored and stabilized away from the water above the high water mark at a minimum of 30 m where possible.

## **7.3 Sediment and Erosion Control**

- 1) The detailed sediment and erosion control (SEC) plan be designed by an engineer for each Phase and should be reviewed by a professional biologist.
- 2) A heavy duty wire-backed silt fence will be installed as per the SEC plan and maintained along the development envelope boundary as a perimeter control. Perimeter controls help prevent the transportation of sediments off-site eastwards towards the ponds and wetland. This line should be surveyed and staked in the field prior to any site preparation activities.
- 3) Grading of the site and removal or addition of fill will be restricted to the area outside of watercourse buffers. Functioning sediment control measures must be in place prior to and during the construction phase, and remain in place until all bare or exposed soils have become stabilized.
- 4) Track pads, concrete wash stations, refueling stations, and stock pile locations should be identified on the SEC plan and isolated using sediment control materials.
- 5) 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.

- 6) 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 a waterbody.
- 7) All sediment and erosion control measures shall be inspected regularly during the construction phase and periodically thereafter to ensure they are functioning properly, maintained, and upgraded or replaced as required.
- 8) 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).
- 9) The Project Manager/Contractor shall not allow any deleterious substances as defined in the Canadian Fisheries Act (such as silt), caused by the work, to enter or re-enter the watercourse.
- 10) Disturbed soils will be immediately stabilized and re-vegetation with native species suitable for the site.
- 11) All construction materials will be removed from site upon project completion.

#### **7.4 Contaminant and Spill Management**

- 1) A spill management plan will be developed for future development. The plan will provide direction for implementation actions immediately in the event of a sediment release or spill of a deleterious substance.
- 2) An emergency spill kit shall be kept on site, and employed immediately should a spill occur. In the case of a spill, the Ontario Spill Action Center shall be notified immediately at 1-800-268-6060; all provincial and federal regulations shall be adhered to.
- 3) Building material used in a watercourse will be handled and treated in a manner to prevent the release or leaching of substances into the water that may be deleterious to fish. Construction crews will be fully trained in their use to ensure timely and effective responses to spill incidents.



- 4) Vehicle and equipment refueling shall be conducted on impermeable pads/pans within a defined staging area.
- 5) Refueling and maintenance of equipment shall be conducted off slopes and away from water bodies on impermeable pads to allow full containment of spills at a recommended distance of a minimum of 30 m from the watercourse. If 30 m is not achievable a portable spill containment berm may be used.
- 6) Materials classified as potential contaminants (e.g. paint, primers, gas, oil, degreasers, grout, or other chemicals) will be used a minimum of 30 m from watercourse. If 30 m is not achievable a portable spill containment berm should be used.

## **7.5 Fish Protection**

- 1) No in-water works are permitted below the high-water and/or in the unnamed ponds outside of the building envelope.
- 2) A 30 m buffer be established from the PSW, which encompass the pond in Habitat Zone 8.
- 3) Should work conditions change such that it is possible that fish or fish habitat may potentially be impacted, all works shall cease until the problem has been corrected or authorization has been obtained from the appropriate authorities.
- 4) The Project Manager/Contractor shall not allow any deleterious substances as defined in the Canadian Fisheries Act (such as silt), caused by the work, to enter or re-enter the watercourse.

## **7.6 Aquatic Salvage Plan**

The aquatic life and wildlife salvage will be completed by a professional biologist in all isolated work areas prior to in-water works and dewatering. The following Aquatic Salvage Plan will be implemented on-site:

### **7.6.1 Fish Salvage**

- 1) A professional biologist will acquire OMNRF Scientific Fish Collection Permit and potentially a Wildlife Collection Permit for the construction area prior to in-water works.

- 2) Biologist and contractor must coordinate prior to dewatering to confirm the work timing and environmental site conditions.
- 3) Collection and relocation of fish will occur from all isolated in-water work areas prior to the commencement of any in-water works.
- 4) The contractor will have the appropriate size and number of pumps on site to dewater the isolated work area in an efficient manner.
- 5) The contractor will consult with biologist when to start and stop dewatering of the fish salvage area. This is to ensure appropriate water levels are maintained for effective use of fish removal gear while minimizing negative impacts to fish.
- 6) Fish collection methods will be chosen on site by the biologist to best suit the environmental conditions, watercourse dimensions, estimated fish abundance and size. Both passive and active live fish collection techniques are recommended and may include seine net and backpack electrofishing.
- 7) At a minimum, the selected gear type will be fished three times or until the catch approaches zero to ensure all fish have been removed from the site.
- 8) Fish will be released alive into another pond. The specific release site will be chosen by a biologist and will be of equal or greater habitat quality. Release site selection will include but not be limited to habitat type and availability, water temperature, probability of depredation and available cover.
- 9) Biologist will submit a data summary and copy of the OMNRF Fish Collection Record (FCR) after all works have been completed.

#### 7.6.2 Turtle and Amphibian Salvage

The collection of the frogs (tadpoles, adults) from the pond will occur prior to any construction works. The methods to be used include seine netting, trapping and other means to salvage these species from the work area. Turtles and amphibians will be released alive into similar habitat.

## **8.0 Conclusion**

The proposed Phase 1 subdivision does not pose a significant negative impact to the Natural Features on site, if mitigation and recommendations outlined are implemented as per section 8.0 of this report. The lots and associated building envelopes will be outside of the 30 meter buffer implemented from the PSW and Significant Woodland.

Phase 2 plan will require some revisions to meet the setback requirements. An addendum EIS will be prepared as part of that submission.



## 9.0 References

- Bakowsky, W.D. Dec. 1997. Natural Heritage Resources of Ontario: Vegetation Communities of Southern Ontario.
- Bird Studies Canada. 2001-2005. Ontario Breeding Bird Atlas: Atlas Square Summary. Available at: <http://www.birdsontario.org/atlas/atlasmain.html>.
- Canadian Council of Ministers of the Environment. (2002). *Canadian water quality guidelines for the protection of aquatic life*.
- COSEWIC. 2019. Canadian Species at Risk. Committee on the Status of Endangered Wildlife in Canada.
- COSSARO. 2018. List of Vulnerable, Threatened, Endangered, Extirpated and Extinct Species in Ontario. Committee on the Status of Species at Risk in Ontario, OMNR.
- DFO. (2019, 08 23). *Aquatic Species at Risk Map*. Retrieved from Government of Canada, Fisheries and Oceans Canada: <http://www.dfo-mpo.gc.ca/species-especes/sara-lep/map-carte/index-eng.html>
- Durham Region May 11, 2017. Official Plan. Accessed on the world wide web at <https://www.durham.ca/en/doing-business/resources/Documents/PlanningandDevelopment/2017-Durham-Regional-Official-Plan-Consolidation.pdf>
- Energy, M. o. (1994). *Waste Management Policies Guidelines Provincial Water Quality Objectives of the Ministry of Environment and Energy*. Ottawa: Queen's Printer for Ontario.
- EPA. (2012, 03 06). *Conductivity*. Retrieved 08 2014, from United States Environmental Protection Agency: <http://water.epa.gov/type/rsl/monitoring/vms59.cfm>
- EPA. (2012, 03 06). *Dissolved Oxygen and Biochemical Oxygen Demand*. Retrieved 08 2014, from United States Environmental Protection Agency: <http://water.epa.gov/type/rsl/monitoring/vms52.cfm>
- EPA. (2012, 03 06). *Water: Monitoring & Assessment*. Retrieved 08 2014, from United States Environmental Protection Agency: <http://water.epa.gov/type/rsl/monitoring/vms58.cfm>
- Government of Ontario (2014) Provincial Policy Statement. Queen's Printer for Ontario. ISBN 978 1-4606-3522-3

- Health Canada. (2009, 08 21). *Total Dissolved Solids (TDS)*. Retrieved 08 2014, from Health Canada: <http://www.hc-sc.gc.ca/ewh-semt/pubs/water-eau/tds-mdt/index-eng.php#a6>
- Hoskin Scientific. (2013). 2020we Portable Turbidity Meter Fact Sheet. Canada: Hoskin Scientific Limited.
- 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.
- LSRCA. (2010). *Black River Subwatershed Plan*. Newmarket: Lake Simcoe Region Conservation Authority.
- MPCA. (2009, February). *Low Dissolved Oxygen in Water-Causes, Impact on Aquatic Life-An Overview*. St. Paul, Minnesota, USA: Minnesota Pollution Control Agency.
- MTO, DFO, OMNR. (2013). *MTO/DFO/OMNR Protocol for Protecting Fish and Fish Habitat on Provincial Transportation Undertakings, Version 2, 2013*. Burlington, Ontario: Department of Fisheries and Oceans.
- Ontario Ministry of Natural Resources (OMNR). 1993. Ontario Wetland Evaluation System: Southern Manual. March 1993 edition and 1994, 2000 and 2002 updates.
- OMNR. 2000. Significant Wildlife Habitat Technical Manual. Appendices. October 2000.
- OMNR. 2007. Endangered Species Act. S.O. 2007, c. 6.
- OMNR. 2008-2011. Special features mapping. MNR GIS database.
- OMNR. 2010. Natural Heritage Assessment Guide. Appendix A: Addressing Potential Negative Environmental Effects. pp. 53-60.
- OMNR. 2012. *Aquatic Resource Area Survey*. Peterborough, Ontario: Land Information, Ontario Ministry of Natural Resources.
- ORCA. (2013). *Otonabee Watershed Report Card*. Peterborough: Otonabee Conservation.
- SARA (Species at Risk Act). June, 2019. 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.sararegistry.gc.ca/species/schedules\\_e.cfm?id=1](http://www.sararegistry.gc.ca/species/schedules_e.cfm?id=1).
- SARO. June 2018. List of Species At Risk in Ontario. Committee on the Status of Species at Risk in Ontario, OMNR.

Stanfield, L. (. (2010). *Ontario Stream Assessment Protocol. Version 8.0*. Fisheries Section. Peterborough, Ontario: Ontario Ministry of Natural Resources.

Stoneman, C. L., & Jones, M. L. (1996). A Simple Method to Classify Stream Thermal Stability with a Single Observation of a Daily Maximum Water and Air Temperatures. *North American Journal of Fisheries Management*, 67(4):341-347.

Township of Uxbridge 2007. Township of Uxbridge Official Plan. Accessed on the World Wide Web at:  
[https://uxbridge.ca/sites/default/files/official\\_plan\\_consolidation\\_aug07\\_0.pdf](https://uxbridge.ca/sites/default/files/official_plan_consolidation_aug07_0.pdf)

Varga, S., D. Leadbeater, J. Webber, J.Kaiser, B. Crins, J. Kamstra, D. Banville, E. Ashley, G. Miller, C. Kingsley, C. Jacobsen, K. Mewa, L. Tebby, E. Mosely and E. Zajc. 2000. Distribution and status of the vascular plants of the greater Toronto Area. Ontario Ministry of Natural Resources, Aurora District. August 2000. 102 pp.

W.I.S.E. (2017). *Wise Environmental Solutions Inc.* Retrieved from <http://wiseenv.com/>

YSI Incorporated. (2013). YSI pH10A pH/Temperature Specifications. Yellow Springs, OH, USA: YSI Incorporated.

YSI Incorporated. (2017). YSI Professional Plus-Conductivity. Yellow Springs, OH, USA: YSI Incorporated.

YSI Incorporated. (2017). YSI Professional Plus-Dissolved Oxygen Fact Sheet. Yellow Springs, OH, USA: YSI Incorporated.

YSI Incorporated. (2017). YSI Professional Plus-Salinity. Yellow Springs, OH, USA: YSI Incorporated.

YSI Incorporated. (2017). YSI Professional Plus-Total Dissolved Solids (TDS). Yellow Springs, OH, USA: YSI Incorporated.

## Appendix I-A: Plant Species 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 Heimbürger 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	5	6	7	8	9	10	
<b>STONEWORT FAMILY</b>		<b>CHARACEAE</b>											
stonewort	<i>Chara spp.</i>	3	X					X		X			
<b>HORSETAIL FAMILY</b>		<b>EQUISETACEAE</b>											
field horsetail	<i>Equisetum arvense</i>	3						X		X		X	
water horsetail	<i>Equisetum fluviatile</i>	1						X					
marsh horsetail	<i>Equisetum palustre</i>	1						X					
variegated horsetail	<i>Equisetum variegatum</i>	1						X					
<b>BEECH FERN FAMILY</b>		<b>THELYPTERIDAE</b>											
marsh fern	<i>Thelypteris palustris</i>	1										X	
<b>WOOD FERN FAMILY</b>		<b>DRYOPTERIDACEAE</b>											
northern lady fern	<i>Athyrium filix-femina</i>	1							X				
bulbet bladder fern	<i>Cystopteris bulbifera</i>	2							X	X			
ostrich fern	<i>Matteuccia struthiopteris</i>	1							X				
sensitive fern	<i>Onoclea sensibilis</i>	4							X	X	X	X	

Common Name	Scientific Name	Total	COMMUNITY NUMBER										
			1	2	3	4	5	6	7	8	9	10	
<b>PINE FAMILY</b>		<b>PINACEAE</b>											
balsam fir	<i>Abies balsamea</i>	1										X	
white spruce	<i>Picea glauca</i>	2	X									X	
Colorado spruce	<i>Picea pungens</i>	1	X										
red pine	<i>Pinus resinosa</i>	1	X										
Scot's pine	<i>Pinus sylvestris</i>	1	X										
<b>CYPRESS FAMILY</b>		<b>CUPRESSACEAE</b>											
eastern white cedar	<i>Thuja occidentalis</i>	7	X		X			X	X	X	X	X	X
<b>HORNWORT FAMILY</b>		<b>CERATOPHYLLACEAE</b>											
common coontail	<i>Ceratophyllum demersum</i>	1							X				
<b>BUTTERCUP FAMILY</b>		<b>RANUNCULACEAE</b>											
virgin's bower	<i>Clematis virginiana</i>	1					X						
tall buttercup	<i>Ranunculus acris</i>	7	X	X	X		X			X	X	X	
hooked buttercup	<i>Ranunculus recurvatus</i>	1						X					
cursed crowfoot	<i>Ranunculus sceleratus</i>	1					X						
<b>MOONSEED FAMILY</b>		<b>MENISPERMACEAE</b>											
moonseed	<i>Menispermum canadense</i>	1						X					
<b>ELM FAMILY</b>		<b>ULMACEAE</b>											
American elm	<i>Ulmus americana</i>	4			X		X	X				X	
<b>NETTLE FAMILY</b>		<b>URTICACEAE</b>											
European stinging nettle	<i>Urtica dioica L. ssp.dioica</i>	1					X						
American stinging nettle	<i>Urtica dioica ssp. Gracilis</i>	1	X										
<b>WALNUT FAMILY</b>		<b>JUGLANDACEAE</b>											
black walnut	<i>Juglans nigra</i>	1										X	
hybrid butternut	<i>Juglans x sp.</i>	1				X							
<b>BIRCH FAMILY</b>		<b>BETULACEAE</b>											
white birch	<i>Betula papyrifera</i>	2						X				X	

Common Name	Scientific Name	Total	COMMUNITY NUMBER									
			1	2	3	4	5	6	7	8	9	10
<b>PINK FAMILY</b>		<b>CARYOPHYLLACEAE</b>										
bouncing bet	<i>Saponaria officinalis</i>	1		X								
white campion	<i>Silene latifolia</i>	3	X	X	X							
<b>BUCKWHEAT FAMILY</b>		<b>POLYGONACEAE</b>										
water smartweed	<i>Polygonum amphibium</i>	1					X					
curled dock	<i>Rumex crispus</i>	3	X		X		X					
<b>ST. JOHN'S-WORT FAMILY</b>		<b>GUTTIFERAE</b>										
common St. John's-wort	<i>Hypericum perforatum</i>	2		X	X							
<b>LINDEN FAMILY</b>		<b>TILIACEAE</b>										
American basswood	<i>Tilia americana</i>	3	X							X	X	
small leaf linden	<i>Tilia cordata</i>	1									X	
<b>VIOLET FAMILY</b>		<b>VIOLACEAE</b>										
dog violet	<i>Viola conspersa</i>	1				X						
<b>GOURD FAMILY</b>		<b>CUCURBITACEAE</b>										
wild cucumber	<i>Echinocystis lobata</i>	2	X								X	
<b>WILLOW FAMILY</b>		<b>SALICACEAE</b>										
balsam poplar	<i>Populus balsamifera</i>	4	X				X		X		X	
trembling aspen	<i>Populus tremuloides</i>	4	X						X		X	
Carolina poplar	<i>Populus X canadensis</i>	1	X									
white willow	<i>Salix alba L.</i>	1									X	
weeping willow	<i>Salix babylonica</i>	1	X									
Bebb's willow	<i>Salix bebbiana</i>	1					X					
pussy willow	<i>Salix discolor</i>	1					X					
Missouri willow	<i>Salix eriocephala</i>	1					X					
slender willow	<i>Salix petiolaris</i>	1					X					

Common Name	Scientific Name	Total	COMMUNITY NUMBER											
			1	2	3	4	5	6	7	8	9	10		
<b>MUSTARD FAMILY</b>	<b>BRASSICACEAE</b>													
garlic mustard	<i>Alliaria petiolata</i>	3						X			X	X		
shepherd's purse	<i>Capsella bursa-pastoris</i>	1			X									
common peppergrass	<i>Lepidium densiflorum</i>	2	X		X									
watercress	<i>Nasturtium officinale</i>	1						X						
<b>PRIMROSE FAMILY</b>	<b>PRIMULACEAE</b>													
starflower	<i>Trientalis borealis</i>	1						X						
<b>GOOSEBERRY FAMILY</b>	<b>GROSSULARIACEAE</b>													
American black currant	<i>Ribes americanum</i>	1						X						
<b>ROSE FAMILY</b>	<b>ROSACEAE</b>													
agrimony	<i>Agrimonia gryposepela</i>	1		X										
yellow avens	<i>Geum aleppicum</i>	4		X		X				X	X			
sulfur cinquefoil	<i>Potentilla recta</i>	1		X										
choke cherry	<i>Prunus virginiana</i>	2						X	X					
wild red raspberry	<i>Rubus idaeus</i>	5	X	X	X	X		X						
<b>PEA FAMILY</b>	<b>FABACEAE</b>													
everlasting pea	<i>Lathyrus sylvestris</i>	1		X										
bird's-foot trefoil	<i>Lotus corniculatus</i>	2	X		X									
black medick	<i>Medicago lupulina</i>	3	X	X	X									
white sweet-clover	<i>Melilotus alba</i>	1			X									
white clover	<i>Trifolium repens</i>	2	X		X									
cow vetch	<i>Vicia cracca</i>	2		X	X									
<b>WATER-MILFOIL FAMILY</b>	<b>HALORAGACEAE</b>													
Eurasian water-milfoil	<i>Myriophyllum spicatum</i>	1	X											
<b>EVENING PRIMROSE FAMILY</b>	<b>ONAGRACEAE</b>													
Canada enchanter's nightshade	<i>Circaea lutetiana L. ssp. canadensis</i>	3								X	X	X		
<b>DOGWOOD FAMILY</b>	<b>CORNACEAE</b>													
alternate-leaf dogwood	<i>Cornus alternifolia</i>	2						X	X					
red-osier dogwood	<i>Cornus stolonifera</i>	2						X				X		



Common Name	Scientific Name	Total	COMMUNITY NUMBER										
			1	2	3	4	5	6	7	8	9	10	
<b>BUCKTHORN FAMILY</b>	<b>RHAMNACEAE</b>												
European buckthorn	<i>Rhamnus cathartica</i>	8	X		X	X		X	X	X	X	X	X
<b>GRAPE FAMILY</b>	<b>VITACEAE</b>												
Virginia creeper	<i>Parthenocissus inserta</i>	5			X	X		X	X			X	
wild grape	<i>Vitis riparia</i>	2			X							X	
<b>MAPLE FAMILY</b>	<b>ACERACEAE</b>												
Manitoba maple	<i>Acer negundo</i>	10	X	X	X	X	X	X	X	X	X	X	X
Norway maple	<i>Acer platanoides</i>	3	X		X	X							
red maple	<i>Acer rubrum</i>	3	X					X	X				
silver maple	<i>Acer saccharinum</i>	1	X										
sugar maple	<i>Acer saccharum ssp.saccharum</i>	1	X										
Freeman's maple	<i>Acer x freemanii</i>	2	X					X					
<b>CASHEW FAMILY</b>	<b>ANACARDIACEAE</b>												
staghorn sumac	<i>Rhus typhina</i>	2			X					X			
<b>GERANIUM FAMILY</b>	<b>GERANIACEAE</b>												
herb Robert	<i>Geranium robertianum</i>	2								X	X		
<b>TOUCH-ME-NOT FAMILY</b>	<b>BALSAMINACEAE</b>												
spotted jewelweed	<i>Impatiens capensis</i>	4						X	X	X		X	
pale snapweed	<i>Impatiens pallida</i>	1						X					
<b>GINSENG FAMILY</b>	<b>ARALIACEAE</b>												
wild sarsaparilla	<i>Aralia nudicaulis</i>	1							X				
<b>CARROT FAMILY</b>	<b>APIACEAE</b>												
Queen-Anne's lace	<i>Daucus carota</i>	3	X	X	X								
<b>MILKWEED FAMILY</b>	<b>ASCLEPIADACEAE</b>												
swamp milkweed	<i>Asclepias incarnata</i>	3	X					X		X			
common milkweed	<i>Asclepias syriaca</i>	5	X	X	X			X				X	
swallow-wort	<i>Cynanchum rossicum</i>	8	X	X	X	X		X	X			X	X
<b>NIGHTSHADE FAMILY</b>	<b>SOLANACEAE</b>												
bitter nightshade	<i>Solanum dulcamara</i>	5	X					X	X			X	X

Common Name	Scientific Name	Total	COMMUNITY NUMBER									
			1	2	3	4	5	6	7	8	9	10
<b>BORAGE FAMILY</b>		<b>BORAGINACEAE</b>										
Viper's bugloss	<i>Echium vulgare</i>	1	X									
<b>MINT FAMILY</b>		<b>LAMIACEAE</b>										
ground ivy	<i>Glechoma hederacea</i>	1	X									
American water-horehound	<i>Lycopus americanus</i>	1						X				
wild mint	<i>Mentha arvensis</i>	1						X				
<b>PLANTAIN FAMILY</b>		<b>PLANTAGINACEAE</b>										
narrow-leaved plantain	<i>Plantago lanceolata</i>	2	X		X							
broad-leaved plantain	<i>Plantago major</i>	3	X	X	X							
<b>OLIVE FAMILY</b>		<b>OLEACEAE</b>										
black ash	<i>Fraxinus nigra</i>	1										X
lilac	<i>Syringa vulgaris</i>	1			X							
<b>FIGWORT FAMILY</b>		<b>SCROPHULARIACEAE</b>										
butter-and-eggs	<i>Linaria vulgaris</i>	1			X							
common mullein	<i>Verbascum thapsus</i>	2	X					X				
American brooklime	<i>Veronica americana</i>	1						X				
<b>MADDER FAMILY</b>		<b>RUBIACEAE</b>										
white bedstraw	<i>Galium mollugo</i>	1			X							
marsh bedstraw	<i>Galium palustre</i>	1						X				
<b>HONEYSUCKLE FAMILY</b>		<b>CAPRIFOLIACEAE</b>										
tartarian honeysuckle	<i>Lonicera tatarica</i>	2	X									X
Guelder rose	<i>Viburnum americanum</i>	1										X

Common Name	Scientific Name	Total	COMMUNITY NUMBER											
			1	2	3	4	5	6	7	8	9	10		
<b>ASTER FAMILY</b>	<b>ASTERACEAE</b>													
common yarrow	<i>Achillea millefolium</i>	2		X	X									
Russian knapweed	<i>Acroptilon repens</i>	1	X											
common burdock	<i>Arctium minus</i>	5	X	X	X	X					X			
ox-eye daisy	<i>Chrysanthemum leucanthemum</i>	2	X		X									
Canada thistle	<i>Cirsium arvense</i>	5	X	X	X			X						X
bull thistle	<i>Cirsium vulgare</i>	2	X	X										
daisy fleabane	<i>Erigeron annuus</i>	3	X	X	X									
spotted joe-pyeweed	<i>Eupatorium maculatum</i>	1						X						
boneset	<i>Eupatorium perfoliatum</i>	1											X	
grass-leaved goldenrod	<i>Euthamia graminifolia</i>	2	X					X						
king devil hawkweed	<i>Hieracium x florbundum</i>	1	X											
pineapple weed	<i>Matricaria matricarioides</i>	1			X									
tall goldenrod	<i>Solidago altissima</i>	6	X	X	X	X	X						X	
Canada goldenrod	<i>Solidago canadensis</i>	4	X	X							X			X
late goldenrod	<i>Solidago gigantea</i>	3		X				X					X	
rough goldenrod	<i>Solidago rugosa ssp. rugosa</i>	1											X	
field sow thistle	<i>Sonchus arvensis ssp. arvensis</i>	4	X	X	X			X						
panicked aster	<i>Symphyotrichum lanceolatum ssp. hespe</i>	1											X	
tall white aster	<i>Symphyotrichum lanceolatum ssp. lance</i>	1						X						
calico aster	<i>Symphyotrichum lateriflorum var. laterifl</i>	1						X						
New England aster	<i>Symphyotrichum novae-angliae</i>	2		X				X						
purple-stemmed aster	<i>Symphyotrichum puniceum</i>	2						X					X	
common dandelion	<i>Taraxacum officinale</i>	7	X	X	X	X	X	X	X		X			
goat's-beard	<i>Tragopogon dubius</i>	2	X		X									
coltsfoot	<i>Tussilago farfara</i>	3	X					X					X	
<b>WATER-PLANTAIN FAMILY</b>	<b>ALISMATACEAE</b>													
common waterplantain	<i>Alisma plantago-aquatica</i>	1						X						
broad-leaved arrowhead	<i>Sagittaria latifolia</i>	1						X						

Common Name	Scientific Name	Total	COMMUNITY NUMBER										
			1	2	3	4	5	6	7	8	9	10	
PONDWEED FAMILY		POTAMOGETONACEAE											
common floating pondweed	<i>Potamogeton natans</i>	1	X										
sago pondweed	<i>Potamogeton pectinatus</i>	1					X						
straight-leaved pondweed	<i>Potamogeton strictifolius</i>	1					X						
ARUM FAMILY		ARACEAE											
Jack-in-the-pulpit	<i>Arisaema triphyllum</i>	1							X				
water arum	<i>Calla palustris</i>	1					X						
DUCKWEED FAMILY		LEMNACEAE											
common duckweed	<i>Lemna minor</i>	2					X		X				
star duckweed	<i>Lemna trisulca</i>	1							X				
RUSH FAMILY		JUNCACEAE											
Canadian rush	<i>Juncus canadensis</i>	2	X				X						
path rush	<i>Juncus tenuis</i>	1					X						
SEDGE FAMILY		CYPERACEAE											
foxtail sedge	<i>Carex alopecoidea</i>	1	X										
common lake sedge	<i>Carex lacustris</i>	1					X						
hop sedge	<i>Carex lupulina</i>	1					X						
awl-fruited sedge	<i>Carex stipata</i>	1					X						
needle spike-rush	<i>Eleocharis acicularis</i>	2	X				X						
wool-grass	<i>Scirpus cyperinus</i>	2					X				X		



Common Name	Scientific Name	Total	COMMUNITY NUMBER											
			1	2	3	4	5	6	7	8	9	10		
<b>GRASS FAMILY</b>		<b>POACEAE</b>												
creeping bent grass	<i>Agrostis stolonifera</i>	2	X					X						
marsh foxtail	<i>Alopecurus geniculatus</i>	1	X											
awnless brome grass	<i>Bromus inermis ssp.inermis</i>	3	X	X	X									
Canada bluejoint grass	<i>Calamagrostis canadensis</i>	1						X						
orchard grass	<i>Dactylis glomerata</i>	3	X	X	X									
quack grass	<i>Elymus repens</i>	2	X		X									
red fescue	<i>Festuca rubra</i>	1	X											
fowl manna grass	<i>Glyceria striata</i>	3							X	X			X	
rice cut grass	<i>Leersia oryzoides</i>	2								X			X	
reed canary grass	<i>Phalaris arundinacea</i>	4		X	X			X					X	
timothy	<i>Phleum pratense</i>	4	X	X	X			X						
common reed	<i>Phragmites australis</i>	1						X						
fowl meadow grass	<i>Poa palustris</i>	3	X					X					X	
Kentucky blue grass	<i>Poa pratensis</i>	3	X	X	X									
<b>BUR-REED FAMILY</b>		<b>SPARGANIACEAE</b>												
broad-fruited bur-reed	<i>Sparganium eurycarpum</i>	1								X				
<b>CATTAIL FAMILY</b>		<b>TYPHACEAE</b>												
narrow-leaved cattail	<i>Typha angustifolia</i>	1									X			
common cattail	<i>Typha latifolia</i>	4	X					X		X			X	
<b>LILY FAMILY</b>		<b>LILIACEAE</b>												
orange day-lily	<i>Hemerocallis fulva</i>	1	X											
Canada mayflower	<i>Maianthemum canadense</i>	1							X					
<b>ORCHID FAMILY</b>		<b>ORCHIDACEAE</b>												
helleborine	<i>Epipactis helleborine</i>	2	X								X			
<b>Total Number of Plant Species</b>	163		70	32	44	12	64	26	29	14	40	11		
<b>Number of Plant Species Per Community</b>														

## 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).

<b>NATIONAL RANKING</b>	<b>Committee on the Status of Endangered Wildlife in Canada (COSEWIC), Government of Canada</b>	
	<b>Species at Risk Act (SARA), SCHEDULE 1 (Subsections 2(1), 42(2) and 68(2)), Government of Canada</b>	
<b>PROVINCIAL RANKING</b>	<b>Species at Risk in Ontario (COSSARO), Government of Ontario</b>	
	<b>Provincial Rank (SRANK), Natural Heritage Information Center, Government of Ontario</b>	
<b>REGIONAL RANKING</b>	<b>Riley PDVN</b>	Riley, 1989, Peterboro/Durham/Victoria/Northumberland County

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

Common Name	Scientific Name	NATIONAL RANKINGS		PROVINCIAL RANKINGS		REGIONAL RANKINGS						
		COSEWIC	SARA	COSSARO	SRank	Riley PDVN						
black ash	Fraxinus nigra	THR Nov/18										
<b>Plants with Ranking</b>	<b>Total:</b>	<b>Status List Totals:</b>										
	1	1	0	0		0	0	0	0	0	0	0

## Appendix II: Bird Status Report



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## APPENDIX II      Bird Status Report - Comprehensive

Bird species observed by NEA 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.

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

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

<b>Breeding Status: (Observed By NEA)</b>	<b>B</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).
	<b>F</b> -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).
	<b>M</b> -species observed outside of breeding season for that species and in area outside of the known

AOU Code	Common Name	Scientific Name	COSEWIC	COSSARO	SARA	Area Sensitive	Region 6
WODU	Wood Duck	<i>Aix sponsa</i>				No	
GBHE	Great Blue Heron	<i>Ardea herodias</i>				No	
TUVU	Turkey Vulture	<i>Cathartes aura</i>				No	
OSPR	Osprey	<i>Pandion haliaetus</i>				No	
RTHA	Red-tailed Hawk	<i>Buteo jamaicensis</i>				No	
KILL	Killdeer	<i>Charadrius vociferus</i>				No	
MODO	Mourning Dove	<i>Zenaida macroura</i>				No	
BEKI	Belted Kingfisher	<i>Megaceryle alcyon</i>				No	
YBSS	Yellow-bellied Sapsucker	<i>Sphyrapicus varius</i>				Yes	
NOFL	Northern Flicker	<i>Colaptes auratus</i>				No	
EAPH	Eastern Phoebe	<i>Sayornis phoebe</i>				No	
GCFL	Great Crested Flycatcher	<i>Myiarchus crinitus</i>				No	
EAKI	Eastern Kingbird	<i>Tyrannus tyrannus</i>				No	
WAVI	Warbling Vireo	<i>Vireo gilvus</i>				No	
REVI	Red-eyed Vireo	<i>Vireo olivaceus</i>				No	
BLJY	Blue Jay	<i>Cyanocitta cristata</i>				No	
AMCR	American Crow	<i>Corvus brachyrhynchos</i>				No	
CORA	Common Raven	<i>Corvus corax</i>				No	
NRWS	Northern Rough-winged S	<i>Stelgidopteryx serripenni</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	
GRCA	Gray Catbird	<i>Dumetella carolinensis</i>				No	
EUST	European Starling	<i>Sturnus vulgaris</i>				No	
CEWX	Cedar Waxwing	<i>Bombycilla cedrorum</i>				No	
YEWA	Yellow Warbler	<i>Dendroica petechia</i>				No	
COYE	Common Yellowthroat	<i>Geothlypis trichas</i>				No	

CHSP	Chipping Sparrow	<i>Spizella passerina</i>				No		
SASP	Savannah Sparrow	<i>Passerculus sandwichensi</i>				No		
SOSP	Song Sparrow	<i>Melospiza melodia</i>				No		
WTSP	White-throated Sparrow	<i>Zonotrichia albicollis</i>				No		
NOCA	Northern Cardinal	<i>Cardinalis cardinalis</i>				No		
INBU	Indigo Bunting	<i>Passerina cyanea</i>				No		
RWBL	Red-winged Blackbird	<i>Agelaius phoeniceus</i>				No		
COGR	Common Grackle	<i>Quiscalus quiscula</i>				No		
AMGO	American Goldfinch	<i>Carduelis tristis</i>				No		
<b>TOTAL SPECIES OBSERVED:</b>	<b>36</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>

## Appendix III: Fish Sampling Record



# Appendix III: Fish Sampling Record

Project : 17-076

ProjectName: Zephyr Development

Waterbody/Watercourse: Unnamed Ponds

Sample Site: 17076\_01

SAMPLE: S17076\_01FC01

Fishing Method:

Seine

Date

21-Aug-17

## FISH OBSERVATIONS - INDIVIDUALS

MNR Code	Common Name	Scientific Name	Weight (g)	Total Length
180	Minnow Family	<i>Cyprinidae</i>		
186	Common Carp	<i>Cyprinus carpio</i>	0.8	36
186	Common Carp	<i>Cyprinus carpio</i>	0.8	39
186	Common Carp	<i>Cyprinus carpio</i>	2.3	49
186	Common Carp	<i>Cyprinus carpio</i>	0.5	34
186	Common Carp	<i>Cyprinus carpio</i>	0.3	25
186	Common Carp	<i>Cyprinus carpio</i>	8.9	80
186	Common Carp	<i>Cyprinus carpio</i>	1.1	41
186	Common Carp	<i>Cyprinus carpio</i>	17.8	101
186	Common Carp	<i>Cyprinus carpio</i>	0.5	34
186	Common Carp	<i>Cyprinus carpio</i>	2	51
200	Blacknose Shiner	<i>Notropis heterolepis</i>	1.4	50
200	Blacknose Shiner	<i>Notropis heterolepis</i>	0.5	35
200	Blacknose Shiner	<i>Notropis heterolepis</i>	1.3	46
200	Blacknose Shiner	<i>Notropis heterolepis</i>	0.6	36
200	Blacknose Shiner	<i>Notropis heterolepis</i>	0.6	39
200	Blacknose Shiner	<i>Notropis heterolepis</i>	1.1	50
200	Blacknose Shiner	<i>Notropis heterolepis</i>	0.7	44
200	Blacknose Shiner	<i>Notropis heterolepis</i>	1	45
200	Blacknose Shiner	<i>Notropis heterolepis</i>	1	45
200	Blacknose Shiner	<i>Notropis heterolepis</i>	0.7	39
200	Blacknose Shiner	<i>Notropis heterolepis</i>	0.7	36
280	Stickleback Family	<i>Gasterosteidae</i>		
281	Brook Stickleback	<i>Culaea inconstans</i>	0.4	40
281	Brook Stickleback	<i>Culaea inconstans</i>	1.4	50
281	Brook Stickleback	<i>Culaea inconstans</i>	0.8	45
281	Brook Stickleback	<i>Culaea inconstans</i>	0.6	39
281	Brook Stickleback	<i>Culaea inconstans</i>	0.5	39
281	Brook Stickleback	<i>Culaea inconstans</i>	0.9	46

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281	Brook Stickleback	<i>Culaea inconstans</i>	0.4	39
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FISH OBSERVATIONS - BULK

MNR Code	Common Name	Scientific Name	Weight (g)	Number of Fish
180	Minnow Family	<i>Cyprinidae</i>		
200	Blacknose Shiner	<i>Notropis heterolepis</i>	19.5	33
186	Common Carp	<i>Cyprinus carpio</i>	17.3	12
186	Common Carp	<i>Cyprinus carpio</i>	33.3	15
186	Common Carp	<i>Cyprinus carpio</i>	11	7

Number of Species in Sample: 3

Number of Fish Collected in Sample: 95

Sample Site: 17076\_02

SAMPLE: S17076\_02FC01

Fishing Method: Electrofishing

Date

21-Aug-17

FISH OBSERVATIONS - INDIVIDUALS

MNR Code	Common Name	Scientific Name	Weight (g)	Total Length
180	Minnow Family	<i>Cyprinidae</i>		
181	Goldfish	<i>Carassius auratus</i>	8.7	79
181	Goldfish	<i>Carassius auratus</i>	8.3	80
181	Goldfish	<i>Carassius auratus</i>	4.8	68
181	Goldfish	<i>Carassius auratus</i>	14.3	94
181	Goldfish	<i>Carassius auratus</i>	12.8	90
181	Goldfish	<i>Carassius auratus</i>	9.5	84
186	Common Carp	<i>Cyprinus carpio</i>	17.3	99
186	Common Carp	<i>Cyprinus carpio</i>	1	42
186	Common Carp	<i>Cyprinus carpio</i>	4.7	65
186	Common Carp	<i>Cyprinus carpio</i>	2.5	56
186	Common Carp	<i>Cyprinus carpio</i>	0.3	27
186	Common Carp	<i>Cyprinus carpio</i>	0.9	40
186	Common Carp	<i>Cyprinus carpio</i>	0.5	35
186	Common Carp	<i>Cyprinus carpio</i>	1.1	41
186	Common Carp	<i>Cyprinus carpio</i>	6	70
186	Common Carp	<i>Cyprinus carpio</i>	0.8	37
200	Blacknose Shiner	<i>Notropis heterolepis</i>	0.2	28
200	Blacknose Shiner	<i>Notropis heterolepis</i>	0.2	30
200	Blacknose Shiner	<i>Notropis heterolepis</i>	0.1	15
200	Blacknose Shiner	<i>Notropis heterolepis</i>	0.1	20
200	Blacknose Shiner	<i>Notropis heterolepis</i>	0.3	31
200	Blacknose Shiner	<i>Notropis heterolepis</i>	0.9	45
200	Blacknose Shiner	<i>Notropis heterolepis</i>	0.1	30
200	Blacknose Shiner	<i>Notropis heterolepis</i>	0.7	40
200	Blacknose Shiner	<i>Notropis heterolepis</i>	0.1	20

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FISH OBSERVATIONS - BULK

MNR Code	Common Name	Scientific Name	Weight (g)	Number of Fish
180	Minnow Family	<i>Cyprinidae</i>		
186	Common Carp	<i>Cyprinus carpio</i>	9.9	9
186	Common Carp	<i>Cyprinus carpio</i>	14.4	17
186	Common Carp	<i>Cyprinus carpio</i>	21.8	23

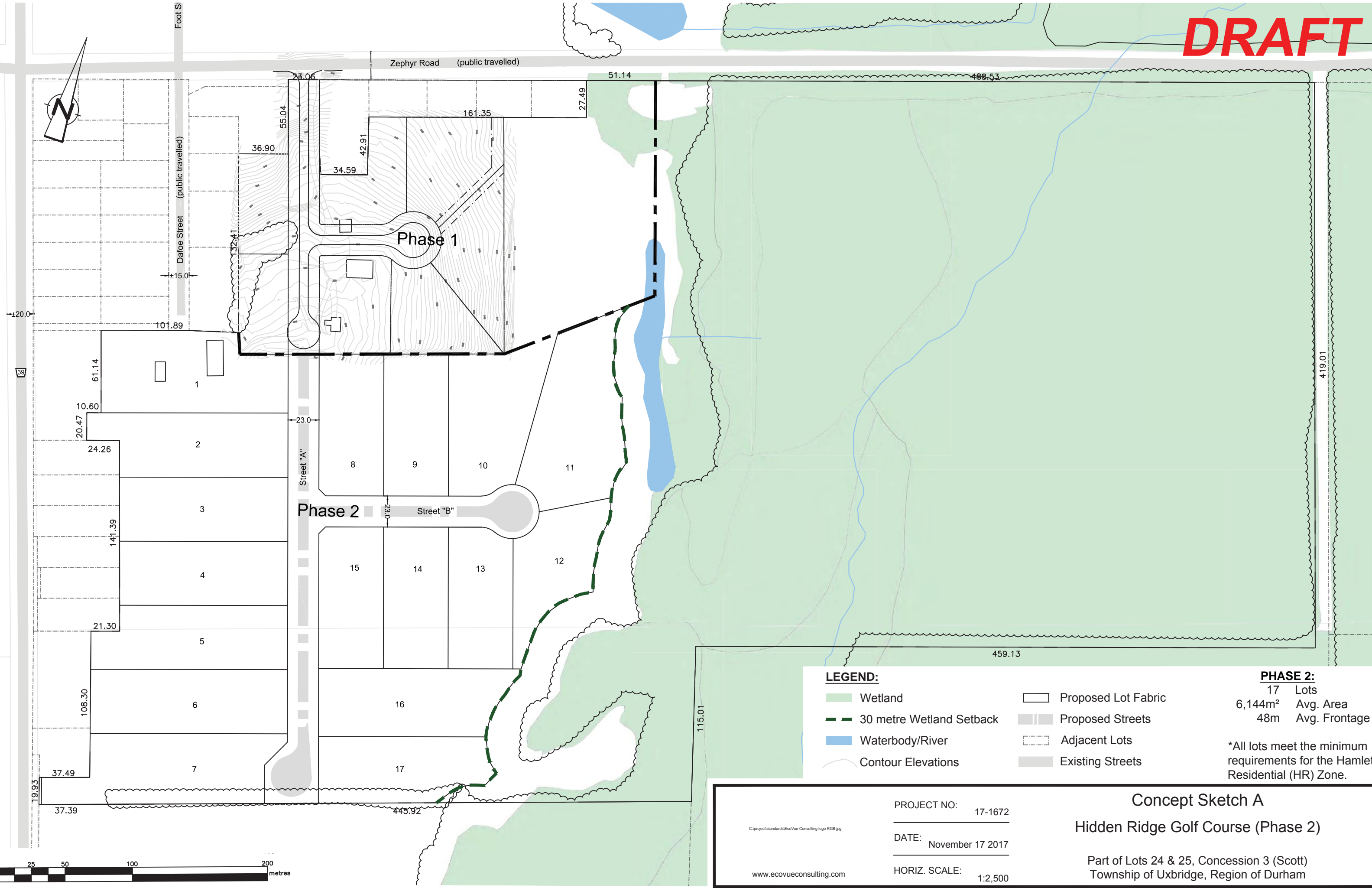
Number of Species in Sample: 3

Number of Fish Collected in Sample: 74

## Appendix V: Site Plan (Aug 4 2017)



**DRAFT**



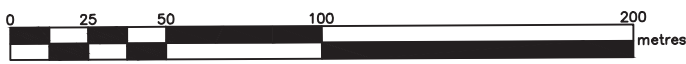
**LEGEND:**

- Wetland
- 30 metre Wetland Setback
- Waterbody/River
- Contour Elevations
- Proposed Lot Fabric
- Proposed Streets
- Adjacent Lots
- Existing Streets

**PHASE 2:**

17 Lots  
 6,144m<sup>2</sup> Avg. Area  
 48m Avg. Frontage

\*All lots meet the minimum requirements for the Hamlet Residential (HR) Zone.



C:\projectstandards\EcoVue Consulting logo RGB.jpg

www.ecovueconsulting.com

PROJECT NO: 17-1672

DATE: November 17 2017

HORIZ. SCALE: 1:2,500

**Concept Sketch A**  
**Hidden Ridge Golf Course (Phase 2)**

Part of Lots 24 & 25, Concession 3 (Scott)  
 Township of Uxbridge, Region of Durham