

Environmental Impact Study Report

Brighthouse Farm – Accommodation Area

1244 County Road #2, Hallowell Township, Prince Edward County

Prepared for:

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Submitted by:

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Project: 1836383

September 2020

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1. Introduction

The Greer Galloway Group has been retained by Ms. Jessica Schnurr, owner of the property located at civic address 1244 County Road #2, Hallowell Township, County of Prince Edward to prepare an Environmental Impact Study (EIS) report in support of the proposed development of an Accommodation Area adjacent to a Provincially Significant Wetland. Figure 1, Site Location Plan, shows the location of the property. This report has been prepared to satisfy requirements of the Municipality of Prince Edward County. The Municipality has requested an EIS as the area proposed for development is adjacent to the Hubb's Creek Provincially Significant Wetland (PSW).

This report was undertaken to characterize the existing conditions of the area proposed for development and the adjacent wetland, by assessing background information obtained from published sources, from regulatory agencies, and through field assessments. The report contains the information required for an EIS based on the County's Terms of Reference which requires that the study:

- a. Identify and evaluate the nature and boundaries of any natural heritage features, associated natural heritage corridors/linkages, ecological functions, and values on or adjacent to the site that could be adversely affected by the proposed development;
- b. Describe and map proposed development activities;
- c. Predict the effects of the proposed development on the various components of the environment on and adjacent to the site, such as wildlife, fish, vegetation, soil, surface water, groundwater, air and any other relevant factors, taking into consideration effects during and after site disturbance;
- d. Identify and evaluate the significance of all predicted adverse and positive effects on the various environmental considerations including impacts to natural features and their ecological functions;
- e. Itemize and recommend all measures that can be taken to avoid, reduce, or mitigate the predicted negative impacts; and
- f. Evaluate the cumulative effect that the project (and any other known projects or activities) may have following implementation of any mitigation measures on the natural features and ecological functions identified for protection.

2. Background

The subject property is located in a rural area on the east side of County of Road #2, approximately 5 km north of the community of Wellington. The area proposed for development is adjacent to Hubb's Creek Provincially Significant Wetland which is shown in Figure 2. Access to the site is through a seasonal entrance over an agricultural field and then through a 5 m wide agricultural road located across the vegetated area.

The owner is proposing the development of an Accommodation Area on a 3.2 ha area on the southeast part of the property located on Part 1 and 2 of Lot 18, Plan 33, Hallowell Township, Prince Edward County (civic address 1244 County Road #2). According to Prince Edward County Official Plan, the agricultural field proposed for construction of the cabins and the adjacent wetland are zoned Environmental Protection while the north part of the property is zoned Rural. According to the Ministry of Natural Resources and Forestry (MNRF) Natural Heritage map, the Hubb's Creek originates within the Provincially Significant Wetland (PSW) on the east side of the property boundary, then flows southwest. There are no buildings or structures on the area proposed for development; however, inorganic debris (mainly household waste) was observed in several areas within the PSW.

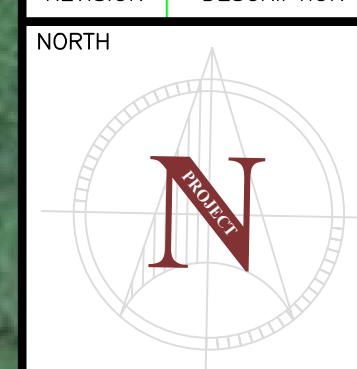
- NOTES:**
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 6. ANY CHANGES MUST BE APPROVED BY THE ENGINEER.


 A DETAIL NO.
 B DRAWING NO. — WHERE DETAILED

LEGEND

 PROPERTY BOUNDARY

01	-	YY/MM/DD
REVISION	DESCRIPTION	DATE



PROJECT

SCHNURR PROPERTY
DEVELOPMENT

1244 COUNTY ROAD 2
PARTS 1 AND 2 OF LOT 18, PLAN 33
HALLOWELL TOWNSHIP
PRINCE EDWARD COUNTY

JESSICA SCHNURR

DRAWING TITLE
SITE LOCATION MAP

DESIGNED BY

DRAWN BY SA

REVIEWED BY YR

APPROVED BY _____

PROJECT DATE 2019/07/31

PROJECT # 18-3-6383

DRAWING #
FIGURE 1

DRAWING SCALE (ISO A1)
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GREER GALLOWAY
CONSULTING ENGINEERS
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PROVINCIALY SIGNIFICANT WETLAND

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REVISION	DESCRIPTION	DATE
NORTH		STAMP
		
PROJECT SCHNURR PROPERTY DEVELOPMENT 1244 COUNTY ROAD 2 PARTS 1 AND 2 OF LOT 18, PLAN 33 HALLOWELL TOWNSHIP PRINCE EDWARD COUNTY		
JESSICA SCHNURR		
DRAWING TITLE HUBBS CREEK SWAMP- PROVINCIALY SIGNIFICANT WETLAND		
DESIGNED BY -		
DRAWN BY SA		
REVIEWED BY YR		
APPROVED BY -		
PROJECT DATE 2019/07/31 (YYYY/MM/DD)		
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3. Environmental Policy Context

This EIS report has been prepared with reference to the federal, provincial, regional and local legislation and policies which are described in the following subsections:

Species at Risk Act (2002)

The purposes of the Species at Risk Act (SARA) are to prevent wildlife species in Canada from disappearing; to provide for the recovery of wildlife species that are extirpated (no longer exist in the wild in Canada), endangered, or threatened as a result of human activity; and to manage species of special concern to prevent them from becoming endangered or threatened. A series of measures applicable across Canada provides the framework to accomplish these goals. Some of these measures establish how governments, organizations, and individuals in Canada work together, while others implement a species assessment process to ensure the protection and recovery of species.

Provincial Policy Statement

The Ontario Planning Act (1990) requires that planning decisions be consistent with the Provincial Policy Statement, 2014 (PPS). Section 2.1 of the PPS provides direction to regional and local municipalities for the establishment of policies to protect the natural heritage features and functions.

Under Section 2.1.5 Development and Site Alteration shall not be permitted in:

- a. *Significant wetlands;*
- b. *Significant habitat for endangered and threatened species;*
- c. *Fish habitat;*
- d. *Significant woodlands;*
- e. *Significant valleylands;*
- f. *Significant wildlife habitat; and*
- g. *Significant areas of natural and scientific interest; and*

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

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

Significant wetlands can be designated and/or identified either by the Ministry of Natural Resources and Forestry and/or the Local Municipality. Significant habitat of Endangered or Threatened species is approved by the MNRF if a species is identified on a subject land through site specific investigation or through review of existing information. Fish habitat is regulated by Fisheries and Ocean Canada (DFO) with Conservation Authorities often acting on their behalf. The identification and regulation of the remaining features is responsibility of the municipality or other local planning authority.

Endangered Species Act (2007)

Species listed on the Species at Risk in Ontario (SARO) list as endangered or threatened are protected under the *Endangered Species Act*, 2007 (ESA). Section 9(1) of the ESA prohibits a person from killing, harming, harassing, capturing or taking a member of a species listed as endangered, threatened or extirpated on the SARO list. Section 10(1) of the ESA prohibits the damage or destruction of habitat of a species listed as endangered or threatened on the SARO list.

Conservation Authority

The Quinte Region Conservation Authority (Quinte Conservation) regulates watercourses, wetlands, and hazardous lands (valleylands, shorelines, floodplains) under the Ontario Regulation 319/09, as made under Section 28 of the *Conservation Authorities Act*. The purpose of the regulation is to prevent and restrict development and site alterations near water and wetlands to protect the public from flooding, erosion and other natural hazards. The regulation establishes guidelines for development, interference with wetlands and alterations to shorelines and watercourses.

For any proposal for development located within 30 m of an evaluated wetland or a wetland less than 2 ha in size (or within 120 m of a Provincially Significant Wetland, or a wetland greater than 2 ha), Quinte Conservation can require that an EIS be prepared to satisfaction of the Authority. The Conservation Authority may require buffers between these features and the proposed developments to maintain and protect wetlands and watercourses.

Municipality of Prince Edward County

The designated Environmental Protection lands which include wetlands and other natural heritage features such as woodlands, fish habitat and wildlife habitat, are important for their environmental and social values as a legacy of the natural landscapes of Prince Edward County. The area proposed for development and the Hubb's Creek Provincially Significant Wetland have a land use designation of Environmental Protection identified on Schedule "E" of the Official Plan.

The County of Prince Edward comprehensive Zoning By-law 1816-2006 (October 23, 2006), Schedule A6-West establishes a land use designation of Rural 3 (RU3) and Environmental Protection (EP). The agricultural field proposed for construction of the cabins and the adjacent wetland are in the Environmental Protection zone while the north part of the property is in the Rural zone. Non-residential uses are permitted in the Environmental Protection areas. Uses permitted in the Environmental Protection Areas are of low impact as described in the Zoning By-law document. See Figure 3: Land Use Designation.

4. Proposed Development

Ms. Schnurr is proposing the development of 15 rental cabins which will include a bathing pond, sauna and hot tub on a 3.2 ha irregular shaped area located in the southeast portion of the property. The development will be serviced by private well and septic system. Also, the owner is proposing the creation of two new lots each of them 0.835 ha in size and located on the meadow vegetation southwest of the property.

The development is proposed to be built on an agricultural field which is adjacent to Hubb's Creek PSW. The cabins are proposed on the northwest part of the field while the south part of the field will be used to grow fruits, vegetables, and flowers. Based on the site investigations carried out to confirm the PSW boundary within the property, a 30 m setback from the wetland boundary in the area around the agricultural field and a 40 m setback from the wetland west boundary have been established. The proposed development and the two new lots will be outside the established setbacks.

Access to campsite from County Road #2 will be via an upgraded seasonal entrance which currently runs over an agricultural field, then along the agricultural road which runs through the vegetated area. The access road is currently 5 m wide and will be extended to 6 m wide. See Appendix A: Concept Site Plan.

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PROPERTY BOUNDARY

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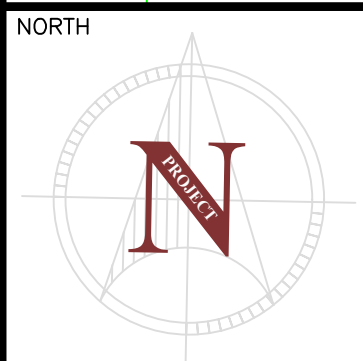
RURAL ZONE

EP

ENVIRONMENTAL PROTECTION ZONE

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REVISION	DESCRIPTION	DATE

NORTH



STAMP

PROJECT

SCHNURR PROPERTY DEVELOPMENT
 1244 COUNTY ROAD 2
 PARTS 1 AND 2 OF LOT 18, PLAN 33
 HALLOWELL TOWNSHIP
 PRINCE EDWARD COUNTY

JESSICA SCHNURR

DRAWING TITLE

LAND USE DESIGNATION ZONING
 BY-LAW No.1816-2006

DESIGNED BY

-

DRAWN BY

SA

REVIEWED BY

YR

APPROVED BY

-

PROJECT DATE

2019/07/31

(YYYY/MM/DD)

PROJECT #

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FIGURE 3

DRAWING SCALE (ISO A1)

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5. Study Approach

5.1 Study Area

The study area for this EIS is the area proposed for development and the adjacent wetland.

5.2 Field Survey

The wetland was evaluated through field surveys. Field surveys were carried out to determine the existing conditions of the natural features, document breeding birds and other wildlife, and determine the general characteristics of the study area.

Table 1: Summary of Natural Environment Site Investigations

Date	Inspection staff	Type of Survey
June 28, 2019	Y. Ramirez & C. Bird	Breeding Birds; Ecological Land Classification; plant inventory; wildlife and wildlife habitat assessments.
July 5, 2019	Y. Ramirez & C. Bird	Breeding Birds; Ecological Land Classification; plant inventory; wildlife and wildlife habitat assessments.
July 10, 2019	Y. Ramirez & C. Bird	Plant inventory; wildlife and wildlife habitat assessments; Wetland boundary assessment.

5.3 Vegetation Community Mapping

Vegetation Communities were determined using a combination of aerial photography and field surveys. Aerial imagery allowed the delineation of distinct community boundaries and field assessments allow the collection of data to classify each community type. The Ecological Land Classification for Southern Ontario (Lee et al., 1998) was used to classify the vegetation communities. All the vegetation communities within the study area were classified to at least the “ecosite” level.

5.4 Wildlife Surveys

Specific Wildlife surveys were not conducted as part of this study. However, all observed species were documented, including birds, reptiles, amphibians and mammals. Any sightings or signs (i.e. scats, tracks, vocalizations) indicating potential use of the site by wildlife was documented.

5.5 Species at Risk

Species at Risk (SAR) included those species listed in the ESA and the SARA. An assessment was conducted to determine presence and potential habitat for SAR in the study area. An initial desktop review for potential Species at Risk (SAR) was also completed. The MNRF online NHIC map was consulted to identify the SAR likely to be present in the property and adjacent land. Available information was reviewed for additional records of SAR. No species-specific surveys were conducted for SAR, but any SAR observed during the field surveys were recorded.

6. Existing Conditions

The 37.35 ha “L” shaped property includes a farmhouse, two sheds, a barn, three agricultural fields and vegetated area. The 15 rental cabins are proposed to be located on the agricultural field located in the southeast portion of the property. This field is currently planted in soybeans and is surrounded by vegetation (woodland/wetland) on all sides except for the access road. No structures or buildings were observed within the wetland except for a remnant of a ladder and old wood boards observed on the east side of the wetland which we interpret to be an old tree stand used for deer hunting. The area within the field and the woodland is observed to be impacted due to open areas that allow the establishment of opportunistic species forming a thick layer of shrub and herbaceous species. Inorganic debris of household origin (bottles, food containers, pots, etc.) was observed in several parts within the woodland.

Existing access to the proposed area for development is through the seasonal entrance located on the agricultural field parallel to County Road #2, then through the agricultural road that crosses the vegetated area. The road in this area is approximately 5 m wide covered with grasses and weedy species. There is a 50 cm diameter culvert approximately 40 m before reaching the edge of the field. Both sides of the access road are covered with species typical of disturbed areas. The culvert allows the flow of an identified seasonal watercourse that runs from east to west. A photo log showing the existing conditions of the property is included in Appendix D.

6.1 Geology and Soils

The property consists of soils of the Ameliasburg Series. The Ameliasburg soils are derived from weathering of the underlying bedrock together with deposits of morainic, lacustrine and outwash origin. The soil depth typically ranges from 0.30 to 1 metre. The soils are stony, clay loam overlying limestone bedrock with fair to good drainage (Richards and Morwick, 1948).

Paleozoic bedrock of the Lindsay Formation underlies the area. The Lindsay Formation is the youngest formation found in the County, it is composed of pale to medium grey, sublithographic to finely crystalline, nodular and shaly limestone. Bioclastic limestone is locally common. The thickness of the formation is estimated to be about 60 m (Carson, 1981).

6.2 Topography and Drainage

Elevations in the property were determined from the Ontario topographic Mapping (MNR). The topography in the area is slightly undulated with small depressional areas. The highest elevation in the property is reported on the northwest corner as 108 mASL. An elevation of 102 mASL is reported in the wetland (southwest) corresponding to the lowest elevation. The Topographic survey completed by Greer Galloway in the agricultural road and the agricultural field indicates a relatively flat area except for a change in elevation on the central part of the field. The lowest elevation measured was 102.5 mASL at the edges of the field and the highest on the central part as 104.5 mASL.

Drainage in the property is determined by the slope, the field drains to the woodland and wetland surrounding it then to the southwest. Three intermittent tributary channels were observed within the wetland, one located in the east part of the wetland and the other in the north. The main branch of Hubb's Creek enters the property from the north and then splits into these two branches before recombining further to the southwest. The third tributary runs close to the west border of the wetland in southeast direction joining the north tributary before reaching the open wetland.

6.3 Hydrology and Hydrogeology

NHIC online mapping shows that the Hubb's Creek originates on the east part of the property, then flows southwest beyond the property to the other part of the PSW and ultimately to the Huycks Bay some 12 km to the west. The Hubb's Creek was not observed in the location showed in the NHIC map. However, water surface channels were observed on the north, east and west side of the PSW which indicate possible changes in surface water flow.

Groundwater flow closely follows the topography of the area flowing outwards from the flat land toward the shorelines. Portions of the site are recharge areas owing to the separation between the ground surface and the water table and to the presence of joints and fractures beneath shallow soils.

6.4 Vegetation Communities

Four vegetation communities were identified in the Hubb's Creek Provincially Significant Wetland within the property. See Figure 4: Natural Heritage Features. The PSW boundary was confirmed during site investigations, indicating the wetland communities do not match the boundary shown in the MNRF online mapping. Based on the existing vegetation communities, the PSW boundary was updated. The vegetation community identified outside the PSW was a meadow which is located between County Road #2 and the PSW in the south part of the property. Forest vegetation is present around the active agricultural field where the cabins are proposed. Hedgerow vegetation was observed between the meadow and an agricultural field and along the east and west property boundary. Woodland vegetation was identified between the wetland and the existing agricultural field. The agricultural access road is approximately 5 m wide covered with grasses and herbaceous (weedy) species. Vegetation along both sides of the agricultural access road is characteristic of disturbed areas with presence of native and non-native species such as grasses, forbs, and shrubs. The edge vegetation on either side of the agricultural road is at least 2 m wide. Disturbance in the woodland vegetation is evidenced by the composition of species, where Common Buckthorn has a significant presence, suppressing the growth of native species. Other invasive species characteristic of disturbed lands include Poison Ivy (*Toxicodendron radicans*) and Tatarian Honeysuckle (*Lonicara tatarica*). A list of plant species identified in the property is included in Appendix B.

Dry - Fresh Poplar Deciduous Forest (FOD3-1)

This community was found between the agricultural field proposed for development and the silver maple swamp. The dominant canopy species in this community is the Trembling Aspen (*Populus tremuloides*), Largetooth Aspen (*Populus grandidentata*) and Black Ash (*Fraxinus nigra*), and the dominant species in the understory was Common Buckthorn (*Rhamnus cathartica*). A more diverse community was found southwest of the site with species such as White Birch (*Betula papyrifera*), Sugar Maple (*Acer saccharum*), White Oak (*Quercus alba*), and Hemlock (*Tsuga canadensis*). The presence of buckthorn in this community affects the diversity of species found. *Phellinus tremulae* was observed in several standing and dead fallen aspens. This fungus attacks living aspens and causes the aspen trunk rot disease.

Fresh - Moist Ash Lowland Deciduous Forest (FOD7-2)

This community was found north of the area proposed for development. The dominant canopy species is the Black Ash (*Fraxinus nigra*) with Green Ash (*Fraxinus pennsylvanica*), White Ash (*Fraxinus Americana*), and American Elm (*Ulmus ameticana*). The understory layer is dominated by Common Buckthorn. Branches, moss, Prickly Ash, Enchanter's Nightshade (*Circaea lutetiana*), Gooseberry, Ash and Buckthorn seedlings among the species covering the ground.

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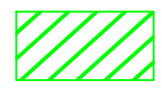
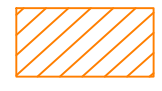
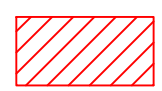
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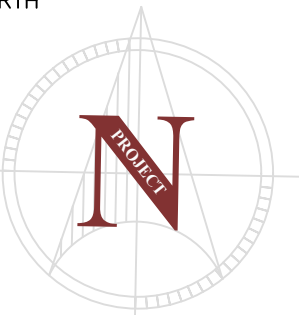
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PROPERTY BOUNDARY
WATERCOURSE
ACCESS ROAD
FOC 4-1 - FRESH-MOIST WHITE CEDAR CONIFEROUS FOREST
FOD 3-1 - DRY-FRESH POPLAR DECIDUOUS FOREST
SWD 6-2 - SILVER MAPLE ORGANIC DECIDUOUS SWAMP
FOD 7-2 - FRESH MOIST ASH LOWLAND DECIDUOUS FOREST
CUM 1-1 - DRY-MOIST OLD FIELD MEADOW
AG - AGRICULTURAL FIELD

01	-	YY/MM/DD
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PROJECT SCHNURR PROPERTY DEVELOPMENT 1244 COUNTY ROAD 2 PARTS 1 AND 2 OF LOT 18, PLAN 33 HALLOWELL TOWNSHIP PRINCE EDWARD COUNTY		
JESSICA SCHNURR		
DRAWING TITLE NATURAL HERITAGE FEATURES (ELC VEGETATION COMMUNITIES)		
DESIGNED BY —		
DRAWN BY SA		
REVIEWED BY YR		
APPROVED BY —		
PROJECT DATE 2019/07/31 (YYYY/MM/DD)		
PROJECT # 18-3-6383		
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Fresh - Moist White Cedar Coniferous Forest (FOC4-1)

Patches of Eastern White Cedar (*Thuja occidentalis*) were observed north and west within the deciduous forest and west within the Silver Maple swamp indicating changes in elevation within these communities. In areas where the White Cedar dominate the canopy, the ground cover is minimal. Grasses, mosses, Jack-in-the-pulpit (*Arisaema triphyllum*), Helleborine (*Epipactis helleborine*), and White Cedar saplings cover the ground.

Silver Maple Organic Deciduous Swamp (SWD6-2)

The swamp forest consists mainly of Silver Maple (*Acer saccharinum*) with Black Ash and American Elm. Open areas within the swamp were observed dominated with Reed Canary Grass (*Phalaris arundinacea*). The understory layer is dominated with sapling of Silver Maple, Black Ash and White Elm. The ground cover is dominated with sedges, rushes, ferns, mosses, and other water tolerant plant species. Common Cattail (*Typha latifolia*), Narrow-leaved Cattail (*Typha angustifolia*), Common Reed (*Phragmites australis*) and Reed Canary Grass were observed in the open area on the east side of County Road #2.

Dry – Moist Old Field Meadow (CUM1-1)

This community is found in the old agricultural field and it is completely vegetated, Eastern Red Cedar (*Juniperus virginiana*) dominates the shrub layer with scattered Crack Willow and Black Ash. The area is covered with Reed Canary Grass, Canada Bluegrass (*Poa compressa*), Goldenrods, sedges, wildflowers and other grasses. A Common Buckthorn thicket is found along the north part of this community.

6.5 Aquatic Habitat

Three water surface features were identified within the PSW. The features are seasonal in nature, with drying conditions during the summer. During the first visit, the feature located in the east side of the property contained standing water, and minnows and tadpoles were observed in it. During the second visit, the feature was dry. The shape of the channel was not well defined and appears to vary in location from year to year. The second feature in the north part of the property was observed to be dry during both site visits. This feature has well defined channel with a moss-covered bottom within the Black Ash forest. It is possible that these two features originate from the same branch and bifurcate at some point in the northeastern part of the wetland although this was not observed during our visits. The north feature flows in a westerly direction and crosses the agricultural road through a culvert, then continues flowing to the southwest toward the swamp. The feature in the east side flows to the south until it reaches the swamp which drains to the southwest.

The third water surface feature was observed in the west part of the PSW close to the edge of the wetland. This feature runs in a north-south-east direction toward the swamp. The northern part of the feature was mainly covered with grasses, but the southern part has a well defined channel. Branches and trucks were observed over the feature, and mosses on the channel bed.

6.6 Terrestrial Wildlife

6.6.1 Breeding Birds

A total of thirty-one (31) species of birds were recorded as incidental observations. Most of the observed species are common and widespread in Ontario and have been reported in the area. A list of Wildlife species identified during the site investigations is included in Appendix C.

6.6.2 Mammals

Five (5) mammals were observed to use the property. Raccoon (*Procyon lotor*) prints were observed in the wetland. Coyote (*Canis latrans*) scats were observed in the agricultural field west of the wetland. White-tailed

Deer (*Odocoileus virginianus*) prints were observed all around the PSW and a deer was observed resting in the meadow. A Red Squirrel (*Tamiasciurus hudsonicus*) was observed in the east part of the woodland. Eastern Chipmunk (*Tamias stratus*) scats were observed at the edge of the Black Ash forest.

6.6.3 Frogs

The amphibian species observed during the site assessments include Northern Leopard Frog (*Rana pipiens*), American Toad (*Anaxyrus americanus*), American Bullfrog (*Rana catesbeiana*), and Wood Frog (*Rana sylvatica*). Tadpoles were present in the area with stagnant water. No frog call survey was performed.

6.6.4 Reptiles

Visual observations of reptiles were completed during each site visit. It is known that of snapping turtles are present in this area; however, no Snapping Turtles or other reptiles were observed.

6.6.5 Species at Risk

One SAR record was obtained from the NHIC database for the Snapping Turtle (*Chelydra serpentina*). Additional records of SAR were obtained from the sources of information provided by the MECP. A list of SAR potentially to be present in the area is included in the following Table.

Table 2: Potential Endangered and Threatened Species within the Study Area

Common Name	Scientific Name	Federal Status	Provincial Status	Probability of Occurrence	Rationale
Birds					
Least Bittern	<i>Ixobrychus exilis</i>	Threatened	Threatened	Low	Preferred habitat for this species are wetlands specially cattail marshes with a mix of open pools and channels which are not present in the study area.
Short-eared Owl	<i>Asio flammeus</i>	Special Concern	Special Concern	Low	The Short-eared Owl is found in grasslands, coastal marshes and tundra where it nests on the ground and hunts for small mammals. They are also found in man-made agricultural habitats (e.g. managed grasslands). Suitable habitat is not found in the study area.
Common Nighthawk	<i>Chordeiles minor</i>	Threatened	Special Concern	Low-Medium	Habitat includes sand dunes, beaches, logged areas, forest clearings, short-grass prairies, pastures, open forests, riverbanks, outcrops, quarries. Potential suitable habitat is found in the woodland and the meadow.
Whip-poor-will	<i>Antrostomus vociferus</i>	Threatened	Threatened	Low	The whip-poor-will uses forested areas for roosting and nesting. Nesting areas include most types of forest at early stages of succession or edges of forests with a dense tree cover but showing similar structure at the ground level, rock or sand barrens with scattered trees, savannahs, old burns, as well as sparse conifer plantations. Suitable nesting conditions are not found in the woodland.
Chimney Swift	<i>Chaetura pelagica</i>	Threatened	Threatened	Low-Medium	Nesting habitat includes cave walls and hollow trees or tree cavities in old growth forests, man-made structures such as chimneys, barns, silos, and abandoned buildings. This species was not observed; however, potential

Common Name	Scientific Name	Federal Status	Provincial Status	Probability of Occurrence	Rationale
					habitat is to be found in the forest or chimneys of neighbouring houses.
Red-headed Woodpecker	<i>Melanerpes erythrocephalus</i>	Threatened	Special Concern	Medium-High	Suitable nesting areas include a high density of dead trees used for nesting and perching. They are found in a variety of natural and disturbed areas. Suitable habitat is present in the forest.
Loggerhead Shrike	<i>Lanius ludovicianus</i>	No status eastern subspecies	Endangered	Low	Habitat includes dense trees or shrubs for nesting, elevated perches for hunting, mating, and territory advertisement, short to medium height grassy areas for foraging. Suitable habitat for this species is not found in the study area.
Barn Swallow	<i>Hirundo rustica</i>	No status	Threatened	Low-Medium	The natural habitat of Barn Swallow includes caves, holes, crevices and ledges in cliff faces but anthropogenic features are often used in farmlands, rural, suburban areas, and villages where they build the nest around many kinds of structures, especially barns and other farm outbuildings, under bridges, wharves, boat-houses, and culverts. Barn swallows were observed in neighbouring lands, but not in the study area.
Wood Thrush	<i>Hylocichla mustelina</i>	Threatened	Special Concern	High	Wood Thrush nests mainly in second-growth and mature deciduous and mixed forests, with saplings and well-developed understorey layers. The species prefers large forest mosaics and small forest fragments. Wood Thrush was recorded in the woodland.
Eastern Wood-pewee	<i>Contopus virens</i>	Special Concern	Special Concern	High	The Eastern Wood-Pewee prefers mature and intermediate-age deciduous and mixed forest having an open understorey. Eastern Wood-pewee was recorded in the woodland.
Canada Warbler	<i>Cardellina canadensis</i>	Threatened	Special Concern	Medium	The Canada Warbler breeds in moist, mixed coniferous-deciduous forests with well-developed shrubby understorey and lush ground layer, upturned tree root, rotted moss-covered stump, logs close to streams, springs, or seepages or in cool, moist ravines with abundant forest or regenerated forest recovered from natural or anthropogenic disturbances. Suitable habitat is found in the woodland.
Henslow's Sparrow	<i>Ammodramus henslowii</i>	Endangered	Endangered	Low	Suitable habitat is found in large abandoned fields, ungrazed and lightly grazed pasture, fallow hayfields with high clover and alfalfa content, grassy swales in open farmland, wet meadows, and infrequently mowed fields with vegetation over 30 cm tall. No suitable habitat is found in the study area.
Bobolink	<i>Dolichonyx oryzivorus</i>	Threatened	Threatened	Low-Medium	Habitat includes hayfields, pastures, fallow or abandoned fields, meadows, and tall grass prairie remnants, savannahs and alvar grasslands. Habitat for this species is considered marginal within the study area, but

Common Name	Scientific Name	Federal Status	Provincial Status	Probability of Occurrence	Rationale
					there is potential for the species to use the meadow for foraging.
Eastern Meadowlark	<i>Sturnella magna</i>	Threatened	Threatened	Low-Medium	Habitat includes hayfields, pastures, fallow or abandoned fields, meadows, and tall grass prairie remnants, savannahs and alvar grasslands. No suitable habitat for this species is found in the study area, but there is potential for the species to use the meadow for foraging.
Amphibian and Reptile					
Snapping Turtle	<i>Chelydra serpentina</i>	Special Concern	Special Concern	High	Preferred habitat is slow-moving water with soft mud bottom and dense aquatic vegetation. Nesting takes place on sand and gravel banks along waterways, including artificial dam and railways embankments. Suitable habitat is found in the swamp.
Mammals					
Northern Myotis	<i>Myotis septentrionalis</i>	Endangered	Endangered	Medium-High	Hibernation roosts for the four species are found in caves, hollow trees, abandoned buildings, and abandoned mines. Most species choose maternity roosts in woodlands with appropriate tree cavities, caves, crevices, under loose bark, and cracks in cliffs. Eastern Small-footed Myotis and Little Brown Myotis are found in buildings and rocky habitats. Potential habitat for these bat species is found in the woodland.
Eastern Small-footed Myotis	<i>Myotis leibii</i>		Endangered	Medium-High	
Little Brown Myotis	<i>Myotis lucifugus</i>	Endangered	Endangered	Medium-High	
Tri-coloured Bat	<i>Perimyotis subflavus</i>	Endangered	Endangered	Medium-High	
Insects					
Monarch	<i>Danaus plexippus</i>	Special Concern	Special Concern	High	Caterpillars feed on milkweed plants found in meadows and open areas. Adult butterflies are found in diverse habitats where they feed on nectar from a variety of wildflowers. Suitable habitat is present on the property. Butterflies were observed in the vegetation bordering the agricultural field and the meadow.

Wood Thrush is listed as a Special Concern species under the Ontario's Endangered Species Act (2007) and Threatened under the SARA. The species is threatened by habitat loss on its wintering grounds and habitat fragmentation and degradation on its breeding grounds. It also suffers of high rates of nest predation and cowbird parasitism associated with habitat fragmentation on the breeding grounds. Wood Thrush found in private lands is for the most unprotected, unless the land is protected through voluntary conservation and stewardship programs. Thrushes breeding on private lands are also protected under the Migratory Bird's Convention Act. Wood Thrush was recorded in the woodland during the three site visits.

Eastern Wood-Pewee is listed as a species of Special Concern under the Ontario's Endangered Species Act (2007) and the SARA. There is no habitat protection for this species since is listed as Special Concern and not as a Threatened or Endangered. This species is still a common species in deciduous and mixed forests of all sizes. Eastern Wood Pee-wee was recorded in the woodland during the first and second site visit.

The Monarch Butterfly is listed as a species of Special Concern under the Ontario's Endangered Species Act (2007) and the SARA. Monarchs use three different types of habitat. Caterpillars feed on milkweed plants

found in meadows and open areas. Adult butterflies are found in diverse habitat where they feed on nectar from a variety of wildflowers. Roadsides are important habitat for breeding Monarchs, as roadside verges are periodically disturbed thus allowing milkweeds to grow (COSEWIC, 2016).

Adult butterflies were observed in the vegetation around the agricultural field and in the meadow where milkweed plants and wildflowers are present. As the milkweed is found around the agricultural field, there is potential for adult butterflies to be disturbed/affected during the construction work. Mitigation measures should be applied to prevent damage to milkweed plants, caterpillars and adult butterflies.

7. Significant Natural Heritage Features and Functions

7.1 Significant Woodlands

The woodland surrounding the agricultural field is considered significant as it is part of the PWS and plays an important role in the ecological functions of the ecosystem. The woodland shows signs of disturbance; however, it supports species listed in the Ontario's Endangered Species Act (2007) and the SARA, and other wildlife that depends in the woodland for habitat and food. The wetland around the proposed area for development is part of a total area of 390.2 ha of the Hubb's Creek PSW.

7.2 Areas of Natural and Scientific Interest (ANSI)

The property is not located within an Area of Natural and Scientific Interest. The Hubb's Creek PSW connects with the Big Swamp Little Swamp Complex PSW and the Big Swamp – ANSI, Life Science located north-east of the property. The connectivity of these natural heritage systems is important in the conservation of the wetland ecosystem and its diversity in flora and fauna.

7.3 Significant Habitat for Provincially Endangered and Threatened Species

The wetland meets the criteria for Snapping Turtle habitat. There are significant opportunities for this species to breed, foraging and hibernate in the wetland. Snapping Turtles were not observed during the site investigations; however, recent observations have been documented within the general area.

Wood Thrush was recorded during the site visits, indicating this species is nesting in the woodland.

Potential roosting habitat for bats is present in the PSW. In addition, the wetland provides food to bats.

7.4 Significant Wildlife habitat

The PPS requires the protection of areas of significant wildlife habitat. Environmental Protection areas in the County such as significant woodlands, wetlands and valleylands often also protect significant wildlife habitat. The 390 ha Hubb's Creek PSW maintains wildlife linkage or connectivity functions with significant natural heritage features located to the north which allows a rich and diverse wildlife community.

White-tailed Deer prints were observed around the wetland and an individual was observed resting on the meadow. It has been documented that the deer overwinter in the Hubb's Creek PSW. Coyote and fox have been reported in the area and prints and scats were found on the agricultural field.

The forest has the potential to function as habitat for endangered bat species. Damaged and decaying live and dead trees (snags) occur throughout the forest, and the wetland may provide roosting habitat and a source of food for woodpecker species.

The wetland is a significant habitat for breeding amphibians.

7.5 Connectivity and Ecological Linkages

The Hubb's Creek PSW extends to the south-west of County Road #2 and maintains linkage or corridors with the wetlands located to the north-east. The PSW is an important area for movement of wildlife. Protection of the natural heritage features allows the wildlife to move to other places (habitat) and maintaining diversity of species. Presence of roads affect the connectivity due to road mortality or changes in species behaviour as the species avoid crossing roads.

8. Opportunities and Constrains

The proposed area for the development of 15 rental cabins has been affected for many years due to the agricultural activities on it. An aerial photograph from 1954 shows that the area proposed for development was cleared and in active agricultural use at that time. The agricultural field is surrounded by a Provincially Significant Wetland. Development in and within the wetland and the 30 m buffer is not permitted. This important feature and its associated buffer are considered constraints to the proposed development. Limiting the development within the cleared area and outside the PSW and buffer will provide the opportunity to preserve the ecological functions of the PSW. Mitigation measures recommended to improve the quality of the woodland will also contribute to the preservation of the ecosystem.

9. Impact Assessment and Recommendations

9.1 Direct and Indirect Impacts

Minimal impacts are anticipated to result from the construction of the proposed development as the cabins and associated infrastructure are to be located within the cleared field outside the buffer area surrounding the woodland and wetland area. In addition, measures should be applied to mitigate prevent and compensate such impacts as might occur.

An evaluation of the direct and indirect impacts caused by the proposed project is provided in the following table.

Table 3: Potential Impacts and Prevention, Mitigation and Restoration Measures

Potential Impacts	Prevention, Mitigation and Restoration Measures
Significant Wetlands	
Direct Impacts during Construction: Location of the cabins in close proximity to a Provincially Significant Wetland.	- The location of the development is proposed in the area that has been subject to agricultural practices which does not contain any of the original natural features. - The location of the new lost is proposed on the meadow vegetation. - The access is proposed to be located on an agricultural field and the existing access that is vegetated with species typical of disturbed areas. Wetland species are not observed in the immediate area to the access road. - Development will be restricted to the area outside the PSW and buffers. - A 30 m and a 40 m setbacks have been established from the updated PSW boundary.
Habitat for Threatened and Endangered Species	
Direct Impacts during Construction: Potential contravention of the Endangered Species Act., 2007 if Snapping Turtles are harm.	- Use of fencing to establish the working area prior to the initiation of construction work to avoid unnecessary damage to the vegetation. - Application of erosion and sedimentation control measures. - It is recommended that construction workers be briefed on the potential species to be found on the area for development and made them familiar with the regulations of the ESA. - Best practices should be implemented during the construction to ensure species are not harmed by equipment or workers activities. - Restrict construction activities to the area designated for construction. Minimize any disturbance to the surrounding areas. - Workers must be vigilant and check work areas for the presence of snakes and turtles. If turtles or snakes are encountered, work should be temporarily suspended until the animal is out of harm's way. Activities which may cause adverse impacts to a species or habitat (e.g. use of heavy equipment) should commence after Aug 31st.
Indirect Impact during Construction - Removal of Wood Thrush breeding habitat. - Potential contravention of the Endangered Species Act., 2007 if active nests are removed during the breeding season or destruction of habitat for Wood Thrush. - Potential contravention of the Endangered Species Act., 2007 if the habitat for Snapping Turtle is destroyed. - Harm to Monarch butterfly and caterpillar during removal of vegetation and construction activities.	- Construction of the cabins outside the breeding season for SAR species. - Inspection of the area prior to removal of vegetation to ensure Monarchs are not harmed. - Restrict construction activities to the area designated for the development. Minimize any disturbance to the PSW. - It is recommended that construction workers be briefed on the potential species to be found on the area for development and made them familiar with the regulations of the ESA. - The construction area should be inspected prior to beginning construction to ensure that Monarch caterpillars are not harmed.

Potential Impacts	Prevention, Mitigation and Restoration Measures
- Removal of Monarch food resources (milkweed and wildflowers). - Harm to Easter Wood-pewee during construction. - Noise of machinery early in spring.	
Direct Impacts Post-Construction: - Removal of breeding habitat for construction of additional buildings. - Harm of butterflies flying over the landscaping areas within the development. - Disturbance of the PSW due to trespassing and destruction of SAR habitat.	- Construction of a permanent fence or a natural barrier around the PSW to avoid damage to SAR habitat or disturbance of SAR life cycles. - People should refrain from catching butterflies or caterpillars if present in the landscaping areas within the development. - Use of native wildflowers is recommended for landscaped areas in the development. - Install signage along the development boundary to prevent trespassing of visitors to SAR habitat.
Wildlife	
Potential Impacts	Prevention, Mitigation and Restoration Measures
Direct Impacts during Construction: Disturbance of wildlife movement.	- Construction of a permanent fence or a natural barrier around the PSW to prevent people from walking through the area and inadvertently causing damage to the natural heritage features or disturbance of wildlife life cycles. - The permanent fence should contain passages to allow the movement of turtles, snakes, amphibians, and small mammals. - Application of erosion and sedimentation control measures. - Perform searches prior to construction activities to ensure fauna will not be affected by machinery.
Indirect Impacts during Construction - Harm to wildlife by machinery during movement of wildlife to other areas of the property. - Potential contravention of the Migratory Bird Convention Act., 1994 if removal of bird habitat.	- Workers should be aware of presence of wildlife and potential for them to cross through or enter the construction area. - Removal of vegetation (invasive species) prior to nesting season (April 15th – August 31th). - Workers must be vigilant and check work areas for the presence of breeding birds and nests containing eggs and/or young. If breeding birds and/or nests are encountered, works should not continue in the location of the nest until after August 31st (or as soon as it has been determined that the young have left the nest). - Workers must be vigilant and check work areas for the presence of snakes and turtles. If turtles or snakes are encountered, work should be temporarily suspended until the animal is out of harm's way.
Direct Impacts Post-Construction: - Increase of generalist species. - Changes in wildlife behavior due to presence of humans and outside lighting	- Maintain a permanent fence or a natural barrier around the development to avoid disturbance to wildlife. - Avoid the removal of vegetation from the woodland to ensure habitat for wildlife (bats, snakes, etc.) is preserved.

Potential Impacts	Prevention, Mitigation and Restoration Measures
	- Outdoor lighting should be low wattage, energy efficient and producing minimal glare to prevent impacts on wildlife. - Visitors should be aware of the importance of this unique area and the need to preserve the natural features and the wildlife.
Terrestrial Habitat	
Direct Impacts during Construction: - Removal of native substrate for foundations and grading. - Damage of vegetation out of the construction area by machinery.	- Use of permanent fencing to establish the working area and to avoid unnecessary damage to vegetation. - Removal of vegetation should be restricted to invasive species. - Removal of invasive species is recommended to take place before May 1st or after August 31st to avoid contravention of the Migratory Bird Convention Act, 1994. - Application of erosion and sedimentation control measures. - Storage, handling and disposal of material used or generated (e.g. organics, soil, grass, woody debris, temporary stockpiles, etc.) during the site preparation should be carried out in a manner that prevents these materials from entering into naturalized areas in the vicinity of the excavation site. - The use of 'Clean Equipment Protocol' during construction activities is strongly recommended in order to reduce the spread of exotic species of plants. - Clean/screened soil should be used on the landscaped areas of development. - Install signage to prohibit dumping and trespassing to natural areas.
Indirect Impacts during Construction: Deposit of sediment over the surrounding forest and swamp vegetation.	- Minimize the area to be impacted. - Silt fencing should be established and regularly inspected to ensure that the vegetation is not affected by construction activities.
Direct Impacts Post-Construction: - Loss of vegetation due to refuse/vegetation dumping on the vegetated area out of the development. - Introduction of non-native species as part of the landscaping areas of the development. - Loss of natural vegetation due to installation of building structures (e.g. sheds, forts) and storage of material (e.g. lumber, yard tools) within the natural area. - Damage to vegetation due to an increase of presence of people that could access the vegetated areas.	- Removal of erosion and sediment control structures once the vegetation has stabilized. - Revegetation of areas affected by construction activities with native species. - Revegetation of portions of the cleared field that no longer will be actively farmed. - Removal of invasive species. - Use of native species in landscaping areas and areas to be naturalized. - Implementation of a management plan for elimination of invasive species in adjacent areas of the development. - Maintain a permanent fence or natural barrier around the PSW to avoid the spreading of non-native species and the deposition of garbage carried by the wind. - Install signage along the development boundary to prevent trespassing to the PSW. - Regular inspection of the permanent fence/natural barrier to ensure the PSW continue to be protected.

Potential Impacts	Prevention, Mitigation and Restoration Measures
Hydrology/Hydrogeology	
Direct Impacts during Construction: • Changes in hydrogeology/hydrogeology (Runoff / Infiltration) as a result of excavations and exposure of native material. • Contamination of the groundwater due to inappropriate installation of a drilled well. • Contamination of groundwater due to inappropriate installation of septic system.	• Minimize changes to existing land contours and drainage patterns due to grading to reduce/eliminate potential for changes to the existing drainage and hydrology. • Storage or stockpiling of material should be in designated areas within the proposed area to be affected and covered to runoff or deposition in adjacent land. • Carry out refueling of generators and construction equipment over an area provided with spill containment. • The construction contractor should have a spills kit and an emergency plan in the case of spills. • All wells and septic systems to be constructed to applicable design codes (e.g. OBC, O. Reg. 903).
Direct Impacts Post-Construction: • Changes in the surface of the driveway • Contamination of groundwater due to failure of septic bed. • Contamination of groundwater due to improper installation of a supply water well. • Contaminations of surface water due to improper maintenance of the stormwater management system.	• Regular inspection of the stormwater management system to ensure contaminated water is not directed to the PSW. • Construction of septic system in accordance with the Ontario Building Code. • Abandonment of any dry or unsuitable wells in accordance with O. Reg. 903. • Regular inspection and pumping of septage.

9.2 Identifying Cumulative Impacts

The area proposed for the development of the cabins has been subject to disturbance due to agricultural practices where all the native vegetation has been eliminated. Mitigation measures to enhance the natural features of the area for development and removal of invasive species will result in an improvement to the natural features and recovery of natural diversity. Cumulative impacts are not expected as long as the development area is maintained outside the PSW and its buffer. As the development will be within the areas where the natural features have been removed and mitigation measures will be applied to eliminate invasive species, we conclude that the proposed construction of 15 rental cabins, related infrastructure and the new lots will not cause significant ecological impacts. Naturalization of portions of the cleared land may increase the overall habitat and wildlife diversity.

10. Policy Conformity and Conclusions

Evaluation of the existing conditions of the natural features that are contained within the PSW and the area proposed for development indicate that no significant impacts to vegetation or wildlife are expected in the proposed location. No cumulative impacts are expected as long as the development and the operation areas are maintained unchanged and outside the PSW and buffers. Net positive impact is predicted of portions of the cleared field are allowed to become naturalized once they are no longer being actively farmed.

Recommended implementation of a management plan for removal of invasive species, will enhance the ecological functions of the natural features in the PSW.

Removal of existing waste (dump) within the forest will improve the ecological value of the natural features.

Recommendations to avoid impacts and/or mitigate potential impacts have been proposed and are considered adequate. Therefore, it is our opinion that the proposed development will cause minimum impact in the natural features or their ecological functions.

I trust that this report is complete within the County of Prince Edward terms of reference and sufficient for your present requirements. Please contact me at your convenience if you have any questions about this report or our recommendations.

**THE GREER GALLOWAY GROUP INC.
CONSULTING ENGINEERS**



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Biologist

11. References

- Atlas of Breeding Birds of Ontario. www.birdsontario.org/atlas/maps.jsp?lang=en. 2019.
- Carson, D.M. 1981. Paleozoic Geology of the Belleville-Wellington Area, Southern Ontario. Ontario Geological Survey. Survey Preliminary Map P.2414, Geological Series. Scale 1: 50 000. Geology 1980.
- COSEWIC. 2007. COSEWIC Assessment and Status Report on the Chimney Swift *Chaetura pelagica* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. vii + 49 pp.
- COSEWIC. 2007. COSEWIC Assessment and update on the Red-headed Woodpecker *Malanerpes erythrocephalus* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. vi + 27 pp.
- COSEWIC. 2008. COSEWIC Assessment and update Status Report on the Short-eared Owl (*Asio flammeus*) in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. vi + 24 pp.
- COSEWIC. 2008. COSEWIC Assessment and Status Report on the Snapping Turtle *Chelydra serpentina* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. vii + 47 pp.
- COSEWIC. 2010. COSEWIC Assessment and Status Report on the Bobolink *Dolichonyx oryzivorus* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. vi + 42 pp.
- COSEWIC. 2012. COSEWIC Assessment and Status Report on the Eastern Wood-pewee *Contopus virens* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. x + 39 pp.
- COSEWIC. 2011. COSEWIC Assessment and Status Report on the Henslow's Sparrow *Ammodramus henslowii* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. x + 37 pp.
- COSEWIC. 2011. COSEWIC Assessment and Status Report on the Barn Swallow *Hirundo rustica* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. ix + 37 pp.
- COSEWIC. 2011. COSEWIC Assessment and Status Report on the Eastern Meadowlark *Sturnella magna* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. x + 40 pp.
- COSEWIC, 2012. COSEWIC Assessment and Status Report on the Wood Thrush *Hylocichla mustelina* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. ix + 46 pp.
- COSEWIC, 2013. COSEWIC Assessment and Status Report on the Little Brown Myotis *Myotis lucifugus*, Northern Myotis *Myotis septentrionalis*, Tri-colored Bat *Perimotis subflavus* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. ix + 93 pp.
- COSEWIC, 2016. COSEWIC Assessment and Status Report on the Monarch *Danaus plexippus* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. xiii + 59 pp.
- Environment Canada. 2015a. Recovery Strategy for the Eastern Whip-poor-will (*Antrostomus vociferous*) in Canada [Proposed]. *Species at Risk Act Recovery Strategy Series*. Environment Canada. Ottawa. v + 59 pp.
- Environment Canada. 2015. Recovery Strategy for Canada Warbler (*Cardellina canadensis*) in Canada [Proposed]. *Species at Risk Act Recovery Strategy Series*. Environment Canada, Ottawa. vi + 55pp.
- Environment Canada. 2015. Recovery Strategy for the Loggerhead Shrike, *migrans* subspecies (*Lanius ludovicianus migrans*), in Canada. *Species at Risk Act Recovery Strategy Series*. Environment Canada, Ottawa. vii + 35 pp.
- Lee, H.T., W.D. Bakowsky, J. Riley, J. Bowles, M. Puddister, P. Uhlig and S. McMurray. 1998. *Ecological Land Classification for Southern Ontario: First Approximation and Its Application*. Ontario Ministry of Natural Resources, Southcentral Science Section, Science Development and Transfer Branch. SCSS Field Guide FG-02 North Bay, Ontario. 225 pp.

Ontario Ministry of Natural Resources and Forestry (MNRF). 2017. Eastern Small-footed Myotis (*Myotis leibii*) in Ontario. Ontario Recovery Strategy Series. Ontario. + 85 pp.

Ontario Ministry of Natural Resources and Forestry. 2019. Ministry of Natural Resources Natural Heritage Information Centre Mapping application. Available at
<https://www.gisapplication.lrc.gov.on.ca/Mamnh/Index.html/....>

Prince Edward County. 2012. Issue Paper 5 – Natural Environment. Official Plan Review. 109pp.

Richards, N.R. and Morwick, F.F. 1948. Soil Survey of Prince Edward County. Experimental Farms Services, Dominion Department of Agriculture and the Ontario Agriculture College. Report No. 10 of the Ontario Soil Survey. Guelph, Ontario. November 1948. 86pp.

Appendix A

Concept Site Plan



Brighthouse Farm | Prince Edward County

Concept Site Plan

Prepared for Jessica Schnurr

July 2019

ERA



BRIGHOUSE FARM

CONCEPT SITE PLAN

STREET ADDRESS
1244 COUNTY ROAD 2,
PRINCE EDWARD COUNTY
ON, K0K 3L0

ZONING
EXISTING: RU3
ROLL NUMBER: 135051101013500
LOT 79 CON 2 WEST OF GREENPOINT

THE CONCEPT
AN EVENT VENUE AND ACCOMMODATION FOR GUESTS.

THE VENUE
ADAPTIVE REUSE OF EXISTING BARN.

ACCOMMODATION
AN OUTDOOR SANCTUARY HIDDEN AMONGST A NATURAL FOREST AND WETLAND, TUCKED 400M BACK FROM THE ROAD. ACCOMMODATION DESIGNED TO BLUR THE LINES BETWEEN INDOOR AND OUTDOOR LIVING, EMBRACING NATURAL ELEMENTS AND OPEN-AIR LIVING.

ACTIVITIES ON PROPERTY
WALKING/HIKING TRAILS ADDED IN ENVIRONMENTALLY-PROTECTED AREA, SKI AND SNOWSHOE TRAILS IN WINTER.

COMMUNITY GARDEN - GUESTS CAN GATHER FRESH PRODUCE FOR THEIR MEALS WHILE STAYING WITH US, AND CAN PLANT/CONTRIBUTE FOR FUTURE GUESTS.

BBQ MEAL BASKETS AVAILABLE FOR GUESTS: GATHERED FROM LOCAL FARMERS IN THE AREA, TO SUPPORT LOCAL FARMERS
MORNING YOGA OUTDOORS
BIRD-WATCHING

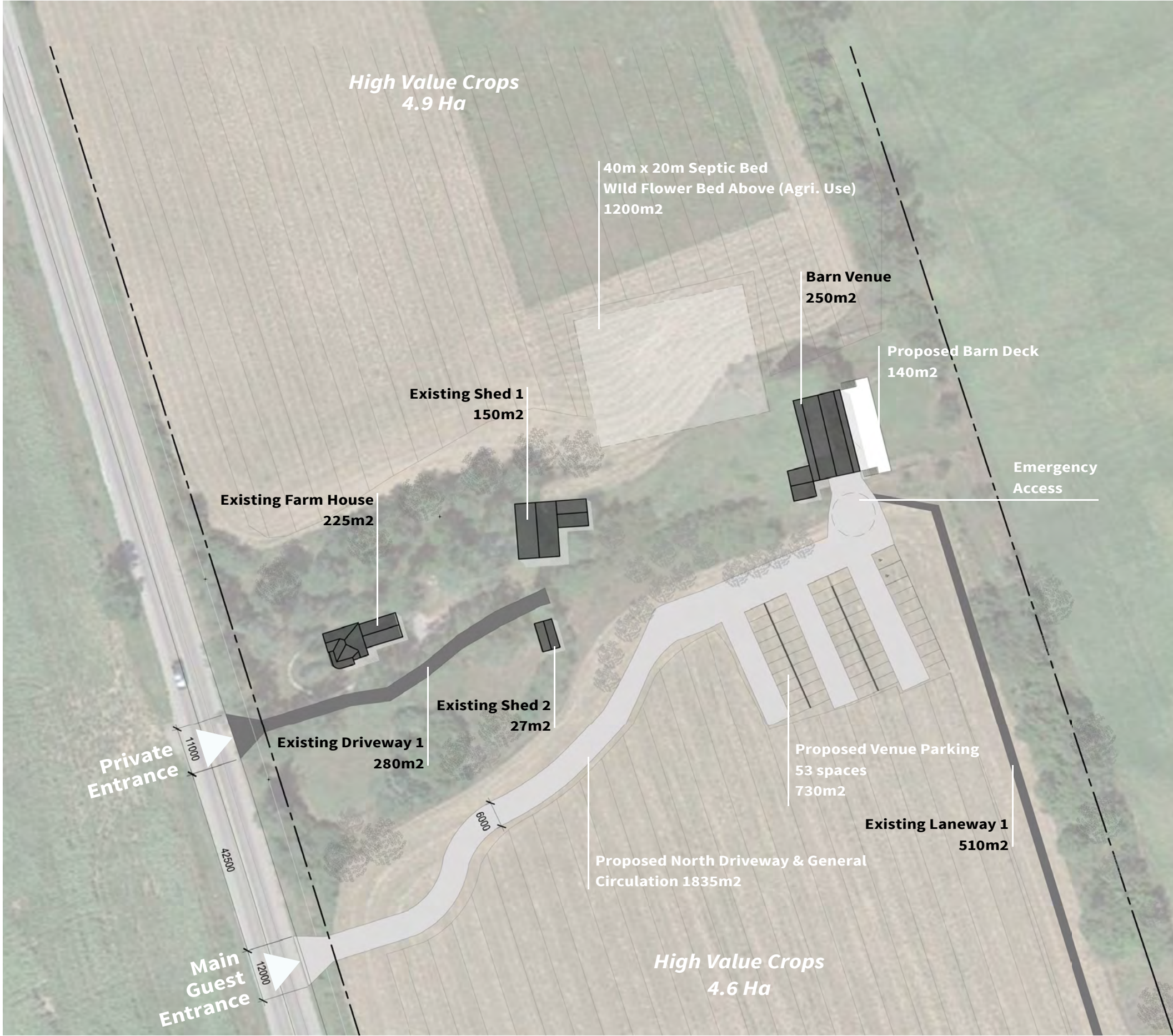
VOLLEYBALL, BOCCE, CORN-HOLE, OUTDOOR GAMES
IN WINTER SPACE TO CROSS COUNTRY SKI AND SNOWSHOE

AGRICULTURAL COMPONENT
THE ACCOMMODATIONS WILL PROVIDE PEOPLE WITH A RURAL PEC EXPERIENCE, WHERE THEY CAN ENJOY THE FOOD FROM THE COUNTY. THERE WILL BE A FRUIT AND VEGETABLE GARDEN FOR GUESTS TO USE DURING THEIR STAY

WILD FLOWER CROP TO PROVIDE FLOWERS FOR WEDDINGS AND OTHER EVENTS ONSITE

EXPLORING PARTNERSHIPS WITH COUNTRY CUT FLOWERS FROM AURORA, AND OTHER FLOWER SPECIALISTS SO OUR OFFERING COULD INCLUDE FRESH BOUQUETS FOR SALE, PICK YOUR OWN FLOWERS, FLOWER ARRANGING CLASSES





BRIGHTHOUSE FARM

CONCEPT SITE PLAN

EXISTING FARM SETTING





BRIGHTHOUSE FARM

CONCEPT SITE PLAN

PROPOSED CABIN CAMPSITE

BUILDING LEGEND

	INN 6X 4 PERSON SUITES + RECEPTION 255M ²		STRUCTURE A 9m ²
	3x SAUNA 10m ²		3x HOT TUB 15m ²
	5x 2 PERSON CABIN CABIN: 30m ² DECKS: 15m ²		EXISTING TREES
	2x 4 PERSON CABIN CABIN: 45m ² DECKS: 15m ²		NEW TREES
	2x 6 PERSON CABIN CABIN: 40m ² DECKS: 15m ²		



CAD PLOTTER: Sean Arment
FILE PATH: P:\Belleville Project\6000\1836383 - PEC Property Studies\Drawings\Working Drawings\18-3-6383 - Working - 20-05-15.dwg
PLOT SCALE: 1:1
DATE PLOTTED: 2020 / 05 / 15 @ 05:49 PM
BORDER SIZE: ISO A1 (841mm x 594mm)

PROPERTY LINES ARE APPROXIMATE ONLY AND ARE
BASED ON OLS SURVEY BY STEWART W ALLEN LTD 1989



SURVEYOR'S CERTIFICATE

I CERTIFY THE PROPERTY BOUNDARIES SHOWN ON
THIS SKETCH ARE CORRECT.

KEITH WATSON DATE
WATSON LAND SURVEYORS LTD.



GREER GALLOWAY
CONSULTING ENGINEERS
PETERBOROUGH
BELLEVILLE
KINGSTON
1620 WALLBRIDGE LOYALIST ROAD
BELLEVILLE, ONTARIO, K8N 4Z5
PHONE: 613-966-3068
FAX: 613-966-3087

- NOTES:
1. ALL WORK SHALL BE IN ACCORDANCE WITH RELEVANT CODES AND GUIDELINES.
 2. ALL DRAWINGS AND ADDENDA ARE TO BE READ AS, AND IN CONJUNCTION WITH THE SPECIFICATIONS.
 3. ALL EQUIPMENT SHALL BE INSTALLED AS SPECIFIED OR APPROVED EQUIVALENT.
 4. CONTRACTOR MUST CHECK AND VERIFY ALL DIMENSIONS BEFORE PROCEEDING WITH WORK AND BE RESPONSIBLE FOR SAME.
 5. CONTRACTOR MUST REPORT ANY DISCREPANCIES TO ENGINEER FOR RESOLUTION BEFORE COMMENCING THE WORK.
 6. ANY CHANGES MUST BE APPROVED BY THE ENGINEER.

A A DETAIL NO.
B B DRAWING NO. - WHERE DETAILED

01	-	YY/MM/DD
REVISION	DESCRIPTION	DATE

NORTH

STAMP

PROJECT
SCHNURR PROPERTY DEVELOPMENT
1244 COUNTY ROAD 2
PARTS 1 AND 2 OF LOT 18, PLAN 33
HALLOWELL TOWNSHIP
PRINCE EDWARD COUNTY

JESSICA SCHNURR

DRAWING TITLE
SITE PLAN
SURVEYORS SKETCH
—

DESIGNED BY
—

DRAWN BY
JC

REVIEWED BY
AV

APPROVED BY
—

PROJECT DATE
2019/03/15
(YYYY/MM/DD)

PROJECT #
18-3-6383

DRAWING #
SP1

DRAWING SCALE (ISO A1)
HOR: 1:2000(A1 PLOT)
VER: X : XXX

0 40 120m
1:2000(A1 PLOT)

Appendix B

List of Plant Species

List of Plant Species

Common Name	Scientific Name	Family	S Rank	G Rank
Trees				
Silver Maple	<i>Acer saccharinum</i>	Aceraceae	S5	G5
Sugar Maple	<i>Acer saccharum</i>	Aceraceae	S5	G5
White Birch	<i>Betula papyrifera</i>	Betulaceae	SNR	G5
Eastern White Cedar	<i>Thuja occidentalis</i>	Cupressaceae	S5	G5
Eastern Red Cedar	<i>Juniperus virginiana</i>	Cupressaceae	S5	G5
Red Oak	<i>Quercus rubra</i>	Fagaceae	S5	G5
White Oak	<i>Quercus alba</i>	Fagaceae	S5	G5
Bitternut Hickory	<i>Carya cordiformis</i>	Juglandaceae	S5	G5
Black Ash	<i>Fraxinus nigra</i>	Oleaceae	S5	G5
White Ash	<i>Fraxinus americana</i>	Oleaceae	S5	G5
Green Ash	<i>Fraxinus pennsylvanica</i>	Oleaceae	S5	G5
Balsam Fir	<i>Abies balsamea</i>	Pinaceae	S5	G5
Eastern Hemlock	<i>Tsuga canadensis</i>	Pinaceae	S5	G5
Eastern White Pine	<i>Pinus strobus</i>	Pinaceae	S5	G5
Common Apple	<i>Malus pumila</i>	Rosaceae	SE5	G5
Black Cherry	<i>Prunus serotina</i>	Rosaceae	S5	G5
Eastern Cottonwood	<i>Populus deltoides</i>	Salicaceae	S5	G5
Trembling Aspen	<i>Populus tremuloides</i>	Salicaceae	S5	G5
Large-toothed Aspen	<i>Populus grandidentata</i>	Salicaceae	S5	G5
Basswood	<i>Tilia americana</i>	Tiliaceae	S5	G5
American Elm	<i>Ulmus americana</i>	Ulmaceae	S5	G5
Shrubs				
Starhorn Sumac	<i>Rhus typhina</i>	Anacardiaceae	S5	G5
Tatarian Honeysuckle	<i>Lonicera tatarica</i>	Caprifoliaceae	SE5	GNR
Canada Elderberry	<i>Sambucus nigra</i> spp. <i>canadensis</i>	Caprifoliaceae	S5	G5
Red Osier Dogwood	<i>Cornus sericea</i>	Cornaceae	S5	G5
Juniper	<i>Juniperus communis</i>	Cupressaceae	S5	G5
Common Buckthorn	<i>Rhamnus cathartica</i>	Rhamnaceae	SNA	GNR
Wild Rose	<i>Rosa acicularis</i>	Rosaceae	S5	G5
Common Prickly Ash	<i>Zanthoxylum americanum</i>	Rutaceae	S5	G5

Common Name	Scientific Name	Family	S Rank	G Rank
Crack Willow	<i>Salix fragilis</i>	Salicaceae	SE5	GNRQ
Slender Willow	<i>Salix petiolaris</i>	Salicaceae	S5	G5
Vines				
Wild Grape Vine	<i>Vitis riparia</i>	Vitaceae	S5	G5
Virginia Creeper	<i>Parthenocissus quinquefolia</i>	Vitaceae	S4?	G5
Ferns				
Sensitive Fern	<i>Onoclea sensibilis</i>	Dryopteridaceae	S5	G5
Lady Fern	<i>Athyrium filix-femina</i>	Dryopteridaceae	S5	
Cinnamon Fern	<i>Osmunda cinnamomea</i>	Osmundaceae	S5	G5
Graminoids & Sedges				
Canary Reed Grass	<i>Phalaris arundinacea</i>	Poaceae	S5	G5
Greenish Sedge	<i>Carex viridula</i>	Cyperaceae	S5	G5?
Yellow Sedge	<i>Carex flava</i>	Cyperaceae	S5	G5
Canada Blue-joint	<i>Calamagrostis canadensis</i>	Poaceae	S5	G5
Timothy Grass	<i>Phleum pratense</i>	Poaceae	SE5	GNR
Mosses				
Tongue Moss	<i>Paludella squarrosa</i>	Meesiaceae	S3	G5
Ribbed Bog Moss	<i>Aulacomnium palustre</i>	Meesiaceae		
Delicate Fern Moss	<i>Thuidium delicatulum</i>	Thuidiaceae	S5	G5
Herbs				
Jack-in-the pulpit	<i>Arisaema triphyllum</i>	Araceae	S5	G5
Water-plantain	<i>Alisma plantago aquatica</i>	Alismataceae	S4?	GNR
Poison Ivy	<i>Toxicodendron radicans</i>	Anacardiaceae	S5	G5
Queen Anne's Lace	<i>Daucus carota</i>	Apiaceae	SNA	GNR
Common Milkweed	<i>Asclepias syriaca</i>	Apocynaceae	S5	G5
Swamp Milkweed	<i>Asclepias incarnata</i>	Apocynaceae	S5	
Wild Sarsaparilla	<i>Aralia nudicaulis</i>	Araliaceae	S5	G5
Common Burdock	<i>Arctium minus</i>	Asteraceae	SNR	GNR
Goldenrod	<i>Solidago spp.</i>	Asteraceae		
Common Dandelion	<i>Taraxacum officinale</i>	Asteraceae	SNA	G5
Bull Thistle	<i>Cirsium vulgare</i>	Asteraceae	SNA	GNR
Pineappleweed	<i>Matricaria discoidea</i>	Asteraceae	SNA	G5
Philadelphia Fleabane	<i>Erigeron philadelphicus</i>	Asteraceae	S5	G5

Common Name	Scientific Name	Family	S Rank	G Rank
Chamomile	<i>Matricaria spp.</i>	Asteraceae		
Jewelweed (Spotted Touch-me-not)	<i>Impatiens capensis</i>	Balsaminaceae	S5	G5
Viper's-bugloss	<i>Echium vulgare</i>	Boraginaceae	SNA	GNR
Dame's-rocket	<i>Herperis matronalis</i>	Brassicaceae	SE5	G4G5
Peppergrass	<i>Lepidium spp.</i>	Brassicaceae		
Wild Teasel	<i>Dipsacus fullonum</i>	Dipsacaceae	SNA	GNR
Field Horsetail	<i>Equisetum arvense</i>	Equisetaceae	S5	G5
Tufted Vetch	<i>Vicia cracca</i>	Fabaceae	S5	G5
Red Clover	<i>Trifolium pratense</i>	Fabaceae	SNA	GNR
White Clover	<i>Trifolium repens</i>	Fabaceae	SNA	GNR
Herb Robert	<i>Geranium robertianum</i>	Geraniaceae	S5	G5
Swamp Red Currant	<i>Ribes triste</i>	Grossulariaceae	S5	G5
Gooseberry (Currant)	<i>Ribes uva-crispa</i>	Grossulariaceae	SNA	GNR
European Forgbit	<i>Hydrocharis morsus-ranae</i>	Hydrocharitaceae	SNA	GNR
Northern Blue Flag	<i>Iris versicolor</i>	Iridaceae	S5	G5
Heal-all	<i>Prunella vulgaris</i>	Lamiaceae	S5	G5
Lesser Duckweed	<i>Lemna minor</i>	Lemnaceae	S5?	G5
White Trillium	<i>Trillium grandiflorum</i>	Liliaceae	S5	G5
False Solomon's-seal	<i>Maianthemum racemosum</i>	Liliaceae	S5	G5
Enchanter's Nightshade	<i>Circaea lutetiana</i>	Onagraceae	S5	G5
Helleborine	<i>Epipactis helleborine</i>	Orchidaceae	SE5	GNR
Common Plantain	<i>Plantago major</i>	Plantaginaceae	SNA	G5
Tufted Loosestrife	<i>Lysimachia thyrsoiflora</i>	Primulaceae	S5	G5
Red Baneberry	<i>Actaea rubra</i>	Ranunculaceae	S5	G5
Marsh Marigold	<i>Caltha palustris</i>	Ranunculaceae	S5	G5
Wild Strawberry	<i>Fragaria virginiana</i>	Rosaceae	S5	G5
Black Raspberry	<i>Rubus occidentalis</i>	Rosaceae	S5	G5
Small Bedstraw	<i>Galium trifidum</i>	Rubiaceae	S5	G5
Great Mullein	<i>Verbascum Thapsus</i>	Scrophulariaceae	SNA	GNR
Climbing Nightshade	<i>Solanum dulcamara</i>	Solanaceae	SE5	GNR
Narrow-leaved Cattail	<i>Typha angustifolia</i>	Typhaceae	S5	G5
Common Cattail	<i>Typha latifolia</i>	Typhaceae	S5	G5
Giant Bur-reed	<i>Sparganium eurycarpum</i>	Typhaceae	S5	G5

Common Name	Scientific Name	Family	S Rank	G Rank
Common Clearweed	<i>Pilea pumila</i>	Urticaceae	S5	G5

SRANK Definition

S1 - Extremely rare in Ontario; usually 5 or fewer occurrences in the province, or very few remaining hectares.

S2 - Very rare in Ontario; usually between 5 and 20 occurrences in the province; or few remaining hectares.

S3 - Rare to uncommon in Ontario; usually between 20 and 100 occurrences in the province; may have fewer occurrences, but with some extensive examples remaining.

S4 - Considered to be common in Ontario. It denotes that a species is apparently secure, with over 100 occurrences in the province.

S5 - Indicates that a species is widespread in Ontario, it is demonstrably secure in the province

GRANK definition

G4 - Common; usually more than 100 occurrences; usually not susceptible to immediate threats.

G5 - Very common; demonstrably secure under present conditions.

T - denotes that the rank applies to a subspecies variety.

G? - Unranked, or if following a ranking, rank is tentatively assigned (e.g. G5?)

Appendix C

List of Wildlife Species

List of Wildlife

Common Name	Scientific Name	Family	S Rank	G Rank
Birds				
Mallard	<i>Anas platyrhynchos</i>	Anatidae	S5	G5
Northern Cardinal	<i>Cardinalis cardinalis</i>	Cardinalidae	S5	G5
Rose-breasted Grosbeak	<i>Pheucticus ludovicianus</i>	Cardinalidae	S4B	G5
Indigo Bunting	<i>Passerina cyanea</i>	Cardinalidae	S5B	G5
Turkey Vulture	<i>Cathartes aura</i>	Cathartidae	S5	G5
Killdeer	<i>Charadrius vociferus</i>	Charadriidae	S5B, S5N	G5
Mourning Dove	<i>Zenaida macroura</i>	Columbidae	S5	G5
Blue Jay	<i>Cyanocitta cristata</i>	Corvidae	S5	G5
American Crow	<i>Corvus brachyrhynchos</i>	Corvidae	S5B	G5
Yellow-billed Cuckoo	<i>Coccyzus americanus</i>	Cuculidae	S4B	G5
American Goldfinch	<i>Carduelis tristis</i>	Fringillidae	S5	G5
Common Grackle	<i>Quiscalus quiscula</i>	Icteridae	S5B	G5
Red-winged Blackbird	<i>Agelaius phoeniceus</i>	Icteridae	S4	G5
Herring Gull	<i>Larus argentatus</i>	Laridae	S5	G5
Gray Catbird	<i>Dumetella carolinensis</i>	Mimidae	S4B	G5
Black-capped Chickadee	<i>Poecile atricapillus</i>	Paridae	S5	G5
Yellow Warbler	<i>Setophaga petechia</i>	Parulidae	S5B	G5
American Redstart	<i>Setophaga ruticilla</i>	Parulidae	S5B	G5
Ovenbird	<i>Seiurus aurocapillus</i>	Parulidae	S5B	G5
Song Sparrow	<i>Melospiza melodia</i>	Passerellidae	S5B	G5
Eastern Towhee	<i>Pipilo erythrophthalmus</i>	Passerellidae	S4B	G5
Wild Turkey	<i>Meleagris gallopavo</i>	Phasianidae	S5	G5
Northern Flicker	<i>Colaptes auratus</i>	Picidae	S4B	G5
White-breasted Nuthatch	<i>Sitta carolinensis</i>	Sittidae	S5	G5
Wood Thrush	<i>Hylocichla mustelina</i>	Turdidae	S4B	G5
American Robin	<i>Turdus migratorius</i>	Turdidae	S5B	G5
Veery	<i>Catharus fuscescens</i>	Turdidae	S5B	G5
Eastern Phoebe	<i>Sayornis phoebe</i>	Tyrannidae	S5B	G5
Eastern Kingbird	<i>Tyrannus tyrannus</i>	Tyrannidae	S4B	G5
Eastern Wood-pewee	<i>Contopus virens</i>	Tyrannidae	S5B	G5
Red-eyed Vireo	<i>Vireo olivaceus</i>	Vireonidae	S5B	G5

Common Name	Scientific Name	Family	S Rank	G Rank
Mammals				
Coyote	<i>Canis latrans</i>	Canidae	S5	G5
White-tailed Deer	<i>Odocoileus virginianus</i>	Cervidae	S5	G5
Raccoon	<i>Procyon lotor</i>	Procyonidae	S5	G5
Eastern Chipmunk	<i>Tamias striatus</i>	Sciuridae	S5	G5
Red squirrel	<i>Tamiasciurus hudsonicus</i>	Sciuridae	S5	G5
Amphibians and Reptiles				
American Toad	<i>Anaxyrus americanus</i>	Bufonidae	S5	G5
Northern Leopard Frog	<i>Rana pipiens</i>	Ranidae	S5	G5
American Bullfrog	<i>Rana catesbeiana</i>	Ranidae	S4	G5
Wood Frog	<i>Rana sylvatica</i>	Ranidae	S5	G5
Butterflies				
Monarch	<i>Danaus plexippus</i>	Nymphalidae	S2N, S4B	G4

Appendix D

Site Photo Log



Photo 1. View of the agricultural field where the cabin campsite is proposed to be located.



Photo 2. View of the agricultural road that gives access to the area proposed for development.



Photo 3. Looking north, the poplar forest.



Photo 4. View of the Silver Maple Swamp.



Photo 5. Looking east, the surface water feature located in the Ash forest.



Photo 6. Looking north, the surface water feature located in the east side of the wetland.



Photo 7. Ash forest with branches and ash and buckthorn seedlings and saplings covering the ground.



Photo 8. View of the Eastern White Cedar forest.



Photo 9. Household debris found within the forest.



Photo 10. View of the vegetation along the edge of the agricultural field.



Photo 11. Looking south-east the meadow.



Photo 12. Looking north, the hedgerow vegetation along the east property boundary.