

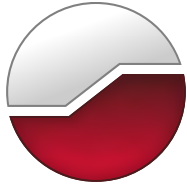


# GEMTEC

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**Environmental Impact Statement  
Proposed Residential Development - Rows  
Corner Fairground  
3823 County Road 6  
Township of Elizabethtown-Kitley, Ontario**

GEMTEC Project: 100030.029



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Submitted to:

Les Placements Habitations Campus Ltee  
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Corner Fairground  
3823 County Road 6  
Township of Elizabethtown-Kitley, Ontario**

December 8, 2023  
GEMTEC Project: 100030.029

## EXECUTIVE SUMMARY

GEMTEC Consulting Engineers and Scientists Limited (GEMTEC) was retained by Les Placements Habitations Campus Ltee to complete an Environmental Impact Statement (EIS) for the approximately 11.93 ha property located on Part of Lot 6, Concession 3, municipally addressed as 3823 County Road 6, in the Township of Elizabethtown-Kitley, United Counties of Leeds and Grenville, Ontario. This EIS has been completed in support of a proposed residential subdivision development and was completed in accordance with all federal, provincial and municipal policies and guidelines, as applicable.

In support of this EIS, a desktop review and a single field investigation were completed to identify the presence or absence of natural heritage features and species at risk (SAR) on-site. The field investigation was completed in October 2023. The focus of the field investigations was to describe, in general, the natural and physical setting of the subject property with a focus on confirming the presence or absence of natural heritage features and potential SAR or their habitat as identified in the desktop review.

Following completion of the desktop review and field investigations, the following natural heritage features were identified on-site or within the study area: provincially significant and local wetlands, fish habitat, floodplains, and significant wildlife habitat for bat maternity colonies (*candidate*), woodland amphibian breeding (*candidate*), habitats of special concern and rare wildlife species. Potential habitat was identified on-site for bobolink, little brown myotis, Eastern small-footed myotis, Tri-colored bat, Blanding's turtle, and black ash. No other evidence of SAR or SAR habitat were observed during the field investigations. The project has the potential to impact regulated habitat for bobolink. Regulated Category 3 habitat was identified on-site for Blanding's turtle.

To confirm the presence or absence of bobolink and their habitat, breeding bird surveys should be completed in 2024, during the appropriate timing window.

Given the proposed development and minimal impact potential to Blanding's turtle and their habitat, it is GEMTEC's opinion that standard avoidance and mitigation measures will be sufficient to mitigate impacts of the proposed project and no ministry consultation is required. Potential impacts to the natural heritage features were primarily associated with the minor loss of woodland and meadow habitat, and indirect impacts to provincially significant and local wetlands, significant wildlife habitat, and fish habitat. Potential direct loss of woodland and meadow habitat is associated with the vegetation removal and land grading required to permit the development. Indirect impacts to significant wildlife habitat are limited to short-term construction and increased human presence. Indirect impacts to provincially significant and local wetlands and fish habitat are primarily associated with alterations to water quality through increased nutrient and sediment loading.

Potential impacts to natural heritage features on-site are likely to be mitigated through the implementation of setbacks from natural heritage features. Impacts to provincially significant wetlands, local unevaluated wetlands, and fish habitat can be mitigated through a 30 m setback from wetlands in the study area. Impacts to significant wildlife habitat and SAR habitat can be mitigated through adherence the prescribed setbacks and to timing windows for vegetation removal.

Additionally, to provide protection to potential SAR and other wildlife on-site, exclusion fencing around the entire construction envelope of each future residential dwelling should be installed to prevent the immigration of SAR species and other wildlife into the construction area. Should any SAR be discovered throughout the course of the proposed works, operations should stop and the species at risk biologist with the local MECP district should be contacted immediately for further direction. Furthermore, to ensure compliance with all applicable legislation, all best management practices and adherence to vegetation clearing windows for birds and bats, outlined in Section 7 should be followed to ensure no negative impacts occur to natural heritage features on-site.

The proposed project complies with the natural heritage policies of the Provincial Policy Statement and both the Township of Elizabethtown-Kitley and the United Counties of Leeds and Grenville Official Plan. No negative impacts to identified natural heritage features or their ecological functions are anticipated as a result of the proposed development as long as all mitigation measures in Section 7 are enacted and best management practices followed.

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## 1.0 INTRODUCTION

GEMTEC Consulting Engineers and Scientists Limited (GEMTEC) was retained by Les Placements Habitations Campus Ltee to complete an Environmental Impact Statement (EIS) for an approximately 11.93 hectare (ha) property, municipally addressed as 3823 County Road 6, located on Part of Lot 6, Concession 3, Township of Elizabethtown-Kitley, Ontario (hereafter referred to as “the subject property”). The location of the subject property is illustrated on Figure A.1 in Appendix A.

### 1.1 Purpose

The property owners are seeking the required approvals for the proposed construction of a residential subdivision development on the 11.93 ha subject property. Based on *Section 2.21.8 – Environmental Impact Assessments* of the Township of Elizabethtown-Kitley Official Plan (TE-K, 2018) an EIS is required showing that the proposed development will not negatively impact any potential natural heritage features, which may be present within the study area. The study area is defined as the property boundary and the adjacent lands encompassing an area of 120 m beyond the property boundary. The subject project and the extents of the study area are illustrated on Figure A.2 in Appendix A.

### 1.2 Objective

The 2020 Provincial Policy Statement (MMAH, 2020) issued under Section 3 of the Planning Act states that “development and site alteration shall not be permitted in: habitats of species at risk, significant wetlands, significant woodlands and significant wildlife habitat unless it has been demonstrated that there will be no negative impacts on the natural features or their ecological functions.” Similarly, the 2020 Provincial Policy Statement dictates that ‘development and site alteration shall not be permitted in fish habitat except in accordance with provincial and federal requirements.’”

The objective of the work presented herein is twofold; 1) to identify and evaluate the significance of any natural heritage features, as defined in the Provincial Policy Statement (MMAH, 2020), on the subject property and within the broader study area and; 2) to assess the potential impacts from the proposed zoning amendment on any natural heritage features identified and to recommend appropriate and defensible mitigation measures to ensure the long-term protection of any natural heritage features identified.

To meet these objectives, the EIS presented herein has been completed in accordance with the following provincial and municipal regulations, policies and guidelines:

- Provincial Policy Statement (MMAH, 2020);
- Endangered Species Act (Ontario, 2007);
- Fisheries Act (Canada, 1984);
- Conservation Authorities Act (Ontario, 1990);



- Natural Heritage Reference Manual (OMNR, 2010);
- Township of Elizabethtown-Kitley Official Plan (TE-K, 2018); and
- United Counties of Leeds and Grenville Official Plan (UCLG, 2015)

### **1.3 Physical Setting**

The subject property is located on Part of Lot 6, Concession 3, Township of Elizabethtown-Kitley, Ontario. The property is municipally addressed as 3823 County Road 6. The subject property currently consists of deciduous and coniferous forest and constructed green space, and has historically been used as fair grounds.

The subject property is bound to the north, south, and east by the lands municipally addressed as 3815 County Road 6. To the west, the subject property is bound by County Road 6.

### **1.4 Land Use Context**

The subject property is situated within a larger rural area. The existing land use designation from the United Counties of Leeds and Grenville Official Plan is rural lands.

## 2.0 METHODOLOGY

### 2.1 Desktop Review

A desktop information gathering exercise was completed to aid in the scoping of field investigations and to gather information relating to natural heritage features which may be present on the subject project or within 1 km of the subject property. An additional component of the desktop review was to assess the potential presence of SAR to occur on the subject property or within the study boundary based on a review of publicly accessible occurrence records and a review of SAR habitat requirements and range maps.

Information regarding the potential presence of natural heritage features and SAR within the vicinity of the site was obtained from the following sources:

- Make a Map: Natural Heritage Areas (OMNRF, 2014a)
- Land Information Ontario (OMNRF, 2011);
- Township of Elizabethtown-Kitley Official Plan (TE-K, 2018);
- United Counties of Leeds and Grenville Official Plan (UCLG, 2015);
- Ontario Geological Survey (OGS, 2019);
- Fisheries and Oceans Canada SAR Maps (DFO, 2019);
- Natural Heritage Information Centre Biodiversity Explorer (OMNRF, 2013);
- Breeding Bird Atlas of Ontario (Cadman et al., 2007)
- Ontario Herpetofaunal Atlas (Oldham and Weller, 2000);
- Wildlife Values Area (OMNRF, 2020a);
- Wildlife Values Site (OMNRF, 2020b);
- Ontario Reptile and Amphibian Atlas (Ontario Nature, 2019); and
- Cataraqui Region Conservation Authority (CRCA) GeoPortal (undated).

### 2.2 Field Investigations

A single field investigation was undertaken to describe, in general, the natural and physical setting of the subject property with a focus on identifying natural heritage features and any potential SAR or their habitat that may exist at the subject property.

The field investigation was completed on October 6, 2023, from 8:15 to 9:15. Conditions during the site investigation were as follows: 20°C, overcast (100% cloud cover), Beaufort wind 3, no precipitation.

#### 2.2.1 Ecological Land Classification

Vegetation communities on the subject property were delineated during the desktop review stage of this EIS using publicly available air photos and confirmed in the field on October 6, 2023, following the Ecological Land Classification System for Southern Ontario (Lee et al., 2008).

Vegetation communities were confirmed in the field by employing the random meander methodology while documenting dominant vegetation species within the various vegetation community forms and the dominant soil types within each community.

### **2.2.2 Wetland Delineation**

Field verification of mapped wetland communities on-site was completed by walking linear transects along the soil moisture gradient from drier to wetter ecosites while documenting dominant vegetation species within the various vegetation community forms. The boundary between wetland ecosites and terrestrial ecosites was determined using the *50/50 Vegetation Rule* as outlined in the Ontario Wetland Evaluation System for Southern Ontario (OMNRF, 2014), where the wetland boundary is determined to be the point along each transect when 50% of the vegetation becomes comprised of hydrophilic or obligate wetland species.

### **2.3 Data Analysis**

An evaluation of the significance of natural heritage features, the sensitivity of identified flora and fauna and the potential impacts posed by the proposed development was undertaken through an analysis of desktop and field investigation data using the approaches and criteria outlined in the following documents:

- Natural Heritage Reference Manual (OMNR, 2010);
- Significant Wildlife Habitat Technical Guide (OMNR, 2000);
- Significant Wildlife Habitat Ecoregion Criterion Schedules (OMNRF, 2015a); and
- Significant Wildlife Habitat Mitigation Support Tool (OMNRF, 2014b).

## **3.0 EXISTING ENVIRONMENT**

### **3.1 Ecoregion**

The site is situated in Ecoregion 6E-11 (Lake Simcoe-Rideau), which extends from Lake Huron in the west to the Ottawa River in the east. The climate of Ecoregion 6E is categorized as humid, high to moderate temperate ecoclimate with a mean annual temperature range between 4.9°C to 7.8°C with annual precipitation ranging between 759 mm to 1,087 mm (Crins et al., 2009).

The eastern portion of the Ecoregion, which the subject property is located, is underlain by glaciomarine deposits as a result of the brief post-glacial incursion of salt water from the Champlain Sea along the St. Lawrence Valley. This Ecoregion falls with Rowe's (1972) Great Lakes-St. Lawrence Forest Region, including its Huron-Ontario and Upper St. Lawrence sections, and a small part of the Middle Ottawa Forest section (Crins et al., 2009).

### **3.2 Landforms, Soils and Bedrock Geology**

The topography of the site is mostly flat throughout, with some areas of gentle sloping topography. The topographical high of 110 meters above sea level (mASL) is present within the northwest and central portions of the on-site woodlands. From this point the topography gently slopes northward off-site, east towards the lowland forest on-site, and south towards the racetrack. The southwards slope is observed to be the steepest, with the site topographical low of 103°mASL located centrally on the racetrack.

Two topographical landforms, as mapped by Chapman and Putnam (1984) are described on the subject property, sand plains and peat and muck of the Smiths Falls Limestone Plain physiographic region. The sand plains occupy the southeastern half of the property while the peat and muck deposits occur within the northwestern portion of the property.

The Ontario Geological Survey (OGS, 2019) identifies two surficial soil units on the subject property, coarse-textured glaciomarine deposits consisting of foreshore and basinal deposits, and bedrock-drift complex in Paleozoic terrain. The coarse-textured glaciomarine deposits occupy a small portion of the site within the northwestern corner. The majority of the site is occupied by bedrock-drift complex in Paleozoic terrain.

Bedrock on the site is composed of the Beekmantown Group, comprised of dolostone and sandstone.

### **3.3 Surface Water, Groundwater and Fish Habitat**

Surface water features within the study area are limited to Provincially Significant Wetland (PSW) and local unevaluated wetlands. No surface water features have been identified on-site.

PSW occur off-site, within the northwestern corner of the study area. The OMNRF identifies this wetland as the Buells Creek Reservoir PSW complex. Part of this PSW complex is included within

the Mac Johnson Conservation Area, as mapped on Schedule B3 of the Township of Elizabethtown-Kitley (TE-K, 2018).

Local wetlands were identified on-site during the desktop review, and by the Cataraqui and Region Conservation Authority (CRCA) during the pre-consultation). However based on the wetland delineation completed during the October 2023 field investigation, vegetation communities in the north of the property are reflective of a fresh to moist forest habitat, not a wetland habitat. The summary detailing full results of this delineation is provided under separate cover in Appendix C.

A fisheries assessment was not conducted as part of this EIS. Based on the desktop review, the off-site PSW is assumed to provide direct fish habitat due to its connectivity to permanent surface water, and to the Mac Johnson Wildlife Area. Based on observations from the field investigations, including lack of sufficient water depth, water permanency and lack of flow, it is assumed that the local wetlands within the study area do not provide permanent fish habitat but may provide seasonal habitat during flood conditions associated with the spring freshet or other large storm events.

Groundwater investigations were not completed in support of this EIS.

### 3.4 Vegetation Communities

Vegetation communities on-site were confirmed by GEMTEC in 2021, following protocols utilized in the Southern Ontario Ecological Land Classification System (Lee et al., 2008). Vegetation at the site represents a patchwork of deciduous and coniferous forests, constructed greenspace, and cultural meadow. Table 3.1 below provides a summary of the various vegetation communities identified on-site while Figure A.3 in Appendix A provides an illustration of the vegetation communities on-site.

**Table 3.1 Vegetation Communities On-site**

ELC Type	Description	Size (ha)
Dry to Fresh Sugar Maple Deciduous Forest (FODM5)	<p>A deciduous forest dominated by sugar maple was present in the northwest corner of the subject property.</p> <p>Canopy vegetation was dominated by dominated by sugar maple (<i>Acer saccharum</i>), with ironwood (<i>Ostrya virginiana</i>), eastern white cedar (<i>Thuja occidentalis</i>), black cherry (<i>Prunus serotina</i>), and trembling aspen (<i>Populus tremuloides</i>).</p> <p>Sub-canopy and herbaceous vegetation were noted to be sparse within both the sugar maple forest and coniferous inclusion. Vegetation observed was limited to wood fern (<i>Dryopteris</i> sp.).</p> <p>A Dry to Fresh Cedar Coniferous Forest inclusion (FOCM2) was present within this community, dominated by Eastern white cedar, with bur oak</p>	1.61

ELC Type	Description	Size (ha)
	(Quercus macrocarpa), trembling aspen, and black cherry. The inclusion occupies an approximate 0.42 ha.	
<p data-bbox="181 590 418 730">Fresh to Moist Lowland Deciduous Forest (FODM7)</p>	<p data-bbox="444 373 1351 432">The northeastern corner of the property was occupied by a lowland deciduous forest.</p> <p data-bbox="444 453 1351 575">Vegetation within this area was dominated by American elm (<i>Ulmus americana</i>), red maple (<i>Acer rubrum</i>), and green ash (<i>Fraxinus pennsylvanica</i>), with other common constituents including white spruce (<i>Picea glauca</i>), and bur oak.</p> <p data-bbox="444 596 1351 718">The shrub layer was dominated by common buckthorn (<i>Rhamnus cathartica</i> L.), and to a lesser extent green ash, and eastern white cedar. In areas of lower topography (i.e. vernal pools), black ash (<i>Fraxinus nigra</i>), was also present.</p> <p data-bbox="444 739 1351 945">Herbaceous vegetation includes dwarf raspberry (<i>Rubus pubescens</i>), flat-topped white aster (<i>Doellingeria umbellata</i>), sensitive fern (<i>Onoclea sensibilis</i>), horsetail (<i>Equisetum</i> sp.), nightshade (<i>Solanaceae</i> sp.), calico aster (<i>Symphyotrichum lateriflorum</i>), and grasses. It was determined through passive observations of the neighbouring property and aerial imagery interpretation that the adjacent woodland off-site was noted as having similar species, density, and structure as the on-site deciduous forest.</p>	<p data-bbox="1386 646 1438 676">0.83</p>
<p data-bbox="230 1066 370 1180">Constructed Greenland (CGL)</p>	<p data-bbox="444 974 1351 1066">The majority of the subject property is occupied by a constructed greenland community, associated with the fairground activities. This community includes the track circuit, stockpile areas, and a woodlot fencerow.</p> <p data-bbox="444 1087 1351 1268">The constructed greenland was dominated primarily by herbaceous vegetation. The community was a mix of manicured lawn and fallow grass fields, co-dominated by graminoid and forb species. A portion fronting County Road 6 appears to serve as a stockpile yard. The woodlot fencerow was observed to be sparsely vegetated with American elm, trembling aspen, black cherry, and eastern white cedar.</p>	<p data-bbox="1386 1108 1438 1138">8.29</p>

### 3.5 Wildlife

Wildlife observed on-site and within the study area during field investigations completed in 2023 included two avian species, one mammalian species and one amphibian species.

Avian species observed included American crow (*Corvus brachyrhynchos*) and blue jay (*Cyanocitta cristata*). Mammalian species observed included porcupine (*Erethizon dorsatum*). The amphibian species observed was spring peeper (*Pseudacris crucifer*). All wildlife observed were common species, not of conservation concern. It is anticipated that a greater diversity of species would be present within the study area during the active season.

## 4.0 NATURAL HERITAGE FEATURES

Natural heritage features are defined in the PPS as "features and areas, including *significant wetlands, significant coastal wetlands, fish habitat, significant woodlands* south and east of the Canadian Shield, *significant valleylands* south and east of the Canadian shield, *significant habitats of endangered species and threatened species, significant wildlife habitat* and *significant areas of natural and scientific interest*, which are important for their environmental and social values as a legacy of the natural landscape of an area".

### 4.1 Provincially Significant and Local Wetlands

As described in the Natural Heritage Reference Manual (OMNR, 2010), wetlands mean "lands that are seasonally or permanently covered by shallow water, as well as lands where the water table is close to or at the surface." While *significant* in regards to wetlands means "an area identified as provincially significant by the Ontario Ministry of Natural Resources and Forestry using evaluation procedures established by the Province, as amended from time to time."

As discussed in Section 3.3, the Buells Creek Reservoir PSW and associated local wetlands have been identified in the study area.

The PSW occurs approximately 80 m northwest of the subject property at its closest point, separated by a dense forested buffer. As mapped by the OMNRF, the PSW occupies approximately 750 ha and stretches from Mclarry Road to Bisseltown Road. The PSW is associated with the Mac Johnson Conservation Area.

As discussed in Section 3.3, based on the field investigation no local wetlands or PSW have been identified on-site.

PSW and local wetlands are illustrated on Figure A.4.

Given the vegetated separation distance and that no in-water work is proposed for the development, impacts to provincially significant and local wetlands are anticipated to be negligible. Impacts to significant and local wetlands from the proposed development are discussed in Section 6.

### 4.2 Significant Woodlands

Significant woodlands are defined in the Natural Heritage Reference Manual (OMNR, 2010) as "an area which is ecologically important in terms of features such as species composition, age of trees and stand history; functionally important due to its contribution to the broader landscape because of its location, size or due to the amount of forest cover in the planning area; or economically important due to site quality, species composition, or past management history."

At the local scale, significant woodlands are defined and designated by the local planning authority. Generally, most planning authorities have defined significant woodlands as any woodland that contains any of the four criteria listed in Section 7.2 of the Natural Heritage Reference Manual (OMNR, 2010), including woodland size, ecological functions, uncommon characteristics, and economic and social functional values.

Table D.1 in Appendix D, presents the screening rationale for significant woodlands applied in this EIS. For comparison of woodland criteria used in Table D.1, it is assumed that the woodland coverage within the planning area (Township of Elizabethtown-Kitley) is between 30% and 60% of the land area (TE-K, 2018). Therefore, the minimum woodland size for determining significance is 50 ha or greater, based on the guidance outlined in the Natural Heritage Reference Manual (OMNR, 2010).

Based on a review of screening criteria outlined in the Natural Heritage Reference Manual (OMNR, 2010) and the Township of Elizabethtown-Kitley Official Plan Schedule B3 (TE-K, 2018), significant woodlands are present on-site due to contiguous size and ecological functions.

Significant woodlands are illustrated on Figure A.4.

Impacts to significant woodlands from the proposed development are discussed in Section 6.

### **4.3 Significant Valleylands**

Valleylands are defined in the Natural Heritage Reference Manual (OMNR, 2010) as “a natural area that occurs in a valley or other landform depression that has water flowing through or standing for some period of time”. The identification and evaluation of significant valleylands in Ontario is based on the recommended criteria from the MNRF and is the responsibility of local planning authorities.

In Southern Ontario, conservation authorities have identified valleylands as part of their regulation mapping (i.e., floodplain mapping); however, where valleys lands have not been defined, their physical boundaries are generally determined as the 'top-of-bank' or 'top-of-slope' associated with a watercourse. For less well-defined valleys, the physical boundary may be defined by riparian vegetation, flooding hazard limits, ordinary high watermarks, or the width of the stream meander belt (OMNR, 2010).

As discussed in Section 3.2, the site is relatively flat, and no valleylands were identified on-site during the desktop review or during the site investigation. As such, significant valleylands are not discussed or evaluated further in this EIS.

### **4.4 Significant Areas of Natural and Scientific Interest**

The MNRF identifies two types of areas of natural and scientific interest (ANSI) in Ontario: life sciences ANSIs typically represent significant segments of Ontario’s biodiversity and natural



landscapes, while earth science ANSIs typically represent significant examples of bedrock, fossils or landforms in Ontario (OMNR, 2010).

No ANSI have been identified on-site or adjacent to the site during the desktop review or during site investigations. As such, ANSI are not discussed or evaluated further in this EIS.

#### **4.5 Significant Wildlife Habitat**

The Natural Heritage Reference Manual (OMNR, 2010), in combination with the Significant Wildlife Habitat Technical Guide (MNRF, 2000) and the Significant Wildlife Habitat Ecoregion 6E Criterion Schedules (OMNRF, 2015) were used to identify and evaluate potential significant wildlife habitat (SWH) on-site. The SWH are broadly categorized as habitats of seasonal concentration of animals, rare vegetation communities, specialized habitats for wildlife, habitats of species of conservation concern, and animal movement corridors. Table D.2, D.3, D.4 and D.5 in Appendix D, provide the screening rationale for each category of SWH, respectively.

##### **4.5.1 Habitats of Seasonal Concentrations of Animals**

Seasonal concentration areas are habitats where large numbers of species congregate at one particular time of the year. The Significant Wildlife Habitat Technical Guide (OMNR, 2000) and Significant Wildlife Habitat Ecoregion Criterion Schedules (OMNRF, 2015) identify 13 types of seasonal concentration habitats that may be considered SWH. These 13 types of seasonal habitat are presented in Table D.2 in Appendix C, including a brief description of the rationale as to why they are or are not assessed further in this EIS.

Following a review of Table D.2 in Appendix D, two habitats of seasonal concentrations of animals are present on-site or within the study area; *candidate* bat maternity roost colony and *candidate* turtle wintering area SWH. Each SWH are discussed in detail in the subsections below.

###### **4.5.1.1 *Candidate* Bat Maternity Colony**

*Candidate* bat maternity colony SWH was identified on-site within the forested habitats on-site (Ecosites: FODM5, FOCM2, and FODM7) due to the presence of snag trees of suitable size and age scattered throughout.

Bat maternity colony SWH is extremely rare in all Ontario landscapes, providing crucial habitat for the birthing, nursing and weaning of bat pups by reproductive females of the following species: big brown bat and silver-haired bat. Formal snag surveys were out of the scope of work for this EIS, however based on observations made during the field investigation the deciduous and coniferous forest communities may provide the required snag density criteria for *confirmed* bat maternity roost colony SWH.

Impacts to *candidate* bat maternity colony habitat from the proposed development are discussed in Section 6.

#### 4.5.1.2 *Candidate* Turtle Wintering Area

*Candidate* turtle wintering area SWH was identified within the study area, within the off-site PSW to the northwest of site. The permanent open water and water depths within this aquatic habitat may provide suitable overwintering habitat. No suitable habitat occurs on-site to support turtle wintering habitat.

Turtle wintering area SWH may be identified as permanent water bodies, large wetlands and bogs or fens with adequate dissolved oxygen, water deep enough to avoid freezing and have soft mud substrates (OMNRF, 2015). Targeted turtle basking survey were out of scope for this EIS and as such, the presence or absence of the SWH can not be confirmed.

The PSW occurs approximately 80 m from the subject property at its closest point, and is separated by a dense forested buffer from the subject property. Given the vegetated separation distance and that no in-water work is anticipated for the proposed development, impacts to *candidate* turtle wintering area are anticipated to be indirect in nature..

Impacts to *candidate* turtle wintering area from the proposed development are discussed in Section 6.

#### 4.5.2 Rare Vegetation Communities

Rare vegetation communities in the province are described generally as those with an S1 to S3 ranking by the NHIC, and typically include communities such as sand barrens, alvars, old growth forests, savannahs, and tallgrass prairies.

The vegetation communities identified on-site and described in Section 3.4 of this report are not ranked by the NHIC as S1, S2, or S3 and are therefore not considered to be rare vegetation communities. As such, rare vegetation communities are not discussed or evaluated further in this EIS.

#### 4.5.3 Specialized Habitats for Wildlife

Specialized wildlife habitats are microhabitats that provide a critical resource to some groups of wildlife. The Significant Wildlife Habitat Technical Guide (OMNR, 2000) and Significant Wildlife Habitat Ecoregion Criterion Schedules (OMNRF, 2015) identify 11 specialized habitats that may constitute SWH, these 11 types of specialized wildlife habitats are evaluated in Table D.3 in Appendix D.

Following a review of Table D.3 in Appendix D, one specialized wildlife habitat has been identified on-site or within the study area: *candidate* woodland amphibian breeding habitat. The SWH is discussed in detail in the subsection below.

#### 4.5.3.1 *Candidate* Woodland Amphibian Breeding

*Candidate* woodland amphibian breeding habitat is associated with the off-site wetlands within the study area, and extends into the surrounding forest communities on-site (Ecosites Codes: FODM5, FOCM2, and FODM7), which surround the off-site wetlands within the study area..

Woodland amphibian breeding habitat can be located in all forested ecosites that have or are adjacent to a wetland, pond or woodland pool (including vernal pools) >500 m<sup>2</sup> (about 25 m diameter). Woodlands with permanent ponds or those containing water in most years until mid-July are more likely to be used as breeding habitat. The habitat is considered to be the wetland areas plus a 230 m radius of woodland area.

Targeted amphibian breeding surveys were outside of the scope of this EIS. As such the presence or absence of woodland amphibian breeding SWH was not confirmed. No suitable wetland habitat is present on-site. However, suitable wetland habitat is present within the study area, approximately 80 m from the subject property, with forest habitat within a 230 m radius of these wetlands occurring on-site. As such, the forested habitats (Ecosites: FODM5, FOCM2, and FODM7) on-site are considered part of the terrestrial dispersal component made up by the 230 m radius from the wetland habitat. Impacts to *candidate* woodland amphibian breeding SWH from the proposed development are discussed in Section 6.

#### 4.5.4 Habitats of Species of Conservation Concern

Provincial rankings are used by the Natural Heritage Information Centre to set protection priorities for rare species, similar to those described in Section 4.5.2 above for vegetation communities. Provincial rankings (S-ranks), are not legal designations such as those used to define the various protection statuses of species at risk. They are only intended to consider factors within the political boundaries of Ontario that might influence a particular species abundance, distribution or population trend.

Based on the guidance provided in the Significant Wildlife Habitat Ecoregion Criterion Schedules (MNRF, 2015), when a plant or animal element occurrence is recorded for any species with an S-rank of S1 (extremely rare), S2 (very rare), S3 (rare to uncommon) or SH (historically present), the corresponding vegetation ecosite is considered to provide *candidate* habitat for species of conservation concern and further consideration within the EIS is warranted.

The Significant Wildlife Habitat Ecoregion Criterion Schedules (OMNRF, 2015) provides five general habitat types known to support a wide range of species of conservation concern in Ontario. The five general habitat types for Ecoregion 6E are provided in Table D.4 in Appendix D, including a brief rationale as to why they are or are not considered further in this EIS. Following review of Table D.4 in Appendix D, one habitat of species of conservation concern have been identified on-site; habitats of Special Concern and Rare Wildlife Species for eastern wood-pewee, wood thrush, and snapping turtle.

#### 4.5.4.1 Special Concern and Rare Wildlife Species SWH

Based on current NHIC, and the linking of candidate habitat to ELC Ecosites, two species of special concern have been identified on-site or within the broader study area: eastern wood-pewee, wood thrush, and snapping turtle. No other species of special concern or rare wildlife species were identified on-site or within the broader study area.

##### *Eastern Wood-pewee*

The eastern wood-pewee (*Contopus virens*) is a small flycatcher bird with an S-rank of S4 (uncommon but not rare) and is listed as a species of special concern in Ontario. The species is often found near clearings and forest edges. The NHIC has identified an occurrence record for the species within the 1 km grid that encompasses the site. The species was not identified during the field investigation, however woodlands and hedgerow vegetation on-site (Ecosites: FODM5, FOCM2, FODM7, and CGL) may provide suitable nesting and foraging habitats to support Eastern wood-pewee.

##### *Wood Thrush*

The wood thrush (*Hylocichla mustelina*) is a medium-sized songbird with an S-rank of S4 (uncommon but not rare) and is listed as a species of special concern in Ontario. Wood thrush is a woodland species often found in moist, deciduous hardwood or mixed forests stands, with dense deciduous undergrowth and tall trees. The NHIC has identified an occurrence record for the species within the 1 km grid that encompasses the site. The species was not identified during the field investigation, however woodlands on-site (Ecosites: FODM5, FOCM2, and FODM7) may provide suitable nesting and foraging habitats to support wood thrush.

##### *Snapping Turtle*

The snapping turtle (*Chelydra serpentina*) is a highly aquatic turtle species with an S-rank of S4 (uncommon but not rare) and is listed as a species of special concern in Ontario. Snapping turtles are aquatic generalists, found in a variety of wetlands, water bodies and watercourses. The NHIC identified snapping turtle as having occurred within 1 km of the site. Snapping turtle was not directly observed during field investigations. No suitable aquatic habitat is present on-site to support snapping turtle. Aquatic habitat capable of supporting snapping turtle presence is limited to the off-site PSW and associated local wetlands within the study area. The woodland habitats (Ecosites: FODM5, FOCM2, and FODM7) on-site may provide potential for species dispersal between wetland habitats in the greater study area.

Potential impacts to rare and special concern wildlife species are discussed in Section 6 below.

#### 4.5.5 Animal Movement Corridors

Animal movement corridors are elongated areas used by wildlife to move from one habitat to another and allow for the seasonal migration of animals (OMNRF, 2015). The Significant Wildlife Habitat Ecoregion Criterion Schedules for Ecoregion 6E-11 (OMNRF, 2015) identifies two types of animal movement corridors: amphibian movement corridors and deer movement corridors. As

per guidance presented by the MNRF (2015), animal movement corridors should only be identified as significant wildlife habitat when a *confirmed or candidate* significant wildlife habitat has been identified by the MNRF district office or by the regional planning authority.

Following review of Table D.5 in Appendix D, no animal movement corridors have been identified on-site. As such, animal movement corridors are not discussed or evaluated further in this EIS.

#### **4.6 Fish Habitat**

The protection of fish and fish habitat is a federal responsibility and is administered by the Department of Fisheries and Oceans Canada (DFO). Fish habitat as defined in the Fisheries Act (Canada, 1985) means, “spawning grounds and nursery, rearing food supply and migration areas on which fish depend directly or indirectly in order to carry out their life processes.”

When development is unable to avoid resulting in the harmful alteration, disturbance or destruction of fish habitat from typical project impacts such as temperature change, sedimentation, infilling, reduction of nutrient and food supply, etc., an authorization under the Fisheries Act is required for the project to proceed.

No aquatic or fish habitat occurs on the subject property. As mentioned in Section 3.3, it is assumed that the off-site PSW provides direct fish habitat based on its water permanence and connectivity to large open water bodies.

Impacts to fish habitat from the proposed development are discussed in Section 6.

#### **4.7 Species at Risk**

The probability of occurrence for species at risk to occur on-site and within the broader study area was determined through the desktop review stage of this EIS, as described in Section 2.1, and through the site specific surveys conducted as part of this EIS, outlined in Section 2.2.

Table D.6 in Appendix D, provides a summary of all species at risk which were determined to have the potential to occur on-site or within the broader study area, their protection status under the provincial Endangered Species Act (Ontario, 2007), their regional distribution, their probability of occurrence and a brief rationale of that probability. Impacts to endangered or threatened SAR determined to have a moderate or high potential to occur on-site or within the broader study area are discussed further in the Section 6.3.

## 5.0 PROPOSED PROJECT

The proposed project assessed for potential impacts on the natural heritage features determined to be present within the broader study area includes a proposed residential development. The residential development will include 38 residential dwellings, a small commercial space, park and amenity space, 4.28 ha of landscaped greenspace, internal roadways and parking, septic tank and bed installation, and a stormwater management area. It is understood that the existing woodlands on-site are to be left undeveloped.

Future components of the proposed project considered in the impact assessment presented in Section 6 include: tree clearing and vegetation grubbing, fill placement and elevation grading, laneway construction, roadway construction, excavation and pouring of foundations, construction of single-family and commercial dwellings, all on private services, general landscaping activities.

The proposed stormwater management for the development is a 0.52 ha wet stormwater management pond. Stormwater management is to be completed in accordance with Section 2.23.2 of the Township of Elizabethtown-Kitley Official Plan (TE-K, 2018). The stormwater management pond is to occupy the southwestern portion of the site, fronting County Road 6, and will include a minimum of 80% total suspended solids removal.

Potential environmental impacts from the proposed project are discussed in relation to proposed construction in Section 6 below.

## **6.0 IMPACT ASSESSMENT**

Potential impacts to natural heritage features on-site and within the broader study area are assessed for direct, indirect and cumulative effects based on the proposed project outlined in Section 5. Natural heritage features identified in Section 4 of this report as present or likely to be present are discussed in the subsections below.

Potential effects to the environment of the site from the proposed development outlined in Section 5 include: minor tree clearing and vegetation grubbing, fill placement and elevation grading, laneway and roadway construction, construction of stormwater infrastructure, excavation and pouring of foundations, construction of single-family and commercial dwellings, all on private services and general landscaping activities.

### **6.1 Provincially Significant and Local Wetlands**

As discussed above, provincially significant and local wetlands occur within the study area. As discussed in Sections 4.1, the PSW and local wetlands occur approximately 80 m northwest of site at its closest point.

As no in-water work is currently anticipated as part of the proposed project, potential impacts to provincially significant and local unevaluated wetlands are anticipated to be indirect in nature. Indirect impacts include increased human disturbance, increase storm water generation and potentially increased nutrient loading to adjacent surface water features.

Given the separation distance between the wetlands and the subject property, impacts to the wetlands are anticipated to be negligible, provided appropriate SWM is implemented.

Short-duration construction impacts and impacts from increased human presence and are not anticipated given the dense forested buffer between the development and the wetlands and the existing rural development surrounding the subject property.

Mitigation measures intended to protect provincially significant and local wetlands from negative impacts are discussed in Section 7.

### **6.2 Significant Woodlands**

As discussed in Section 4.2, the woodlands (Ecosites: FODM5, FOCM2, and FODM7) on-site are considered significant due to their contiguous size and ecological functions.

As per the proposed development plan, no development is proposed to occur within the woodlands on-site. As such, no direct impacts are anticipated to occur to significant woodlands from the proposed development. The wooded hedgerow of the constructed greenland community is not included in the significant woodlands mapping as per Schedule B3 of the Township of Elizabethtown-Kitley Official Plan.



Potential impacts to woodlands are limited to short-duration construction impacts, including heavy machinery encroachment, fill placement, and long-term human disturbances such as noise generation, dumping of refuse and yard waste and trampling.

Short-duration construction related impacts and long-term human disturbances are expected to be minimal given the existing rural development surrounding the subject property and the availability of suitable habitat in the greater study area.

Further, the proposed development includes the replanting of trees on 4.28 ha of the currently mostly barren constructed greenland community.

Avoidance and mitigation measures to reduce impacts to significant woodlands are outlined in Section 7.

### **6.3 Significant Wildlife Habitat**

The potential presence of SWH on-site and within the study area was evaluated in Section 4.5. As a result of this assessment, three types of SWH were determined to be present on-site or within the study area; *candidate* bat maternity roost colonies, *candidate* turtle wintering area, *candidate* woodland amphibian breeding habitat, and habitat of special concern and rare wildlife species.

Potential impacts to each type of SWH are discussed in greater detail in the following subsections, while mitigation measures intended to prevent such impacts are presented in Section 7.

#### **6.3.1 Candidate Bat Maternity Colony**

*Candidate* bat maternity colony habitat is associated with woodland habitats on-site (Ecosites: FODM5, FOCM2, FODM7). Potential suitable snag density was observed within these communities throughout the 2023 field investigation.

As no development is proposed to occur within forest habitats that may support *candidate* bat maternity colony habitat, potential impacts to *candidate* bat maternity colony habitat are associated with indirect impacts to significant woodlands detailed in Section 6.2 above.

Indirect impacts are anticipated to be minimal and include long-term human disturbances such as noise generation, dumping of refuse and yard waste and trampling.

Other potential impacts include short-duration construction impacts, including heavy machinery encroachment, and fill placement.

Short-duration construction related impacts and long-term human disturbances are expected to be minimal given the existing rural development surrounding the subject property and the available of suitable habitat in the greater study area.



Mitigation measures intended to protect *candidate* bat maternity colony habitat are provided in Section 7.

### **6.3.2 Candidate Turtle Wintering Area**

*Candidate* turtle wintering area has been identified within the off-site provincially significant wetlands. Wetlands capable of supporting turtle wintering area are approximate 80 m from site and are separated by a dense forested buffer.

Given the vegetated separation distance and that no in-water work is proposed for the development, impacts to *candidate* turtle wintering area are anticipated to be limited to indirect impacts to wetland habitats.

Potential indirect impacts to the PSW and local wetlands are primarily associated an increase in storm water generation and potentially increased nutrient loading to adjacent surface water features. However, given the separation distance between the wetlands and the subject property, impacts to the wetlands are anticipated to be negligible, provided appropriate SWM is implemented.

Mitigation measures intended to protect *candidate* turtle wintering area from negative impacts are discussed in Section 7.

### **6.3.3 Candidate Woodland Amphibian Breeding Habitat**

*Candidate* woodland amphibian breeding habitat has been identified within the off-site provincially significant and local wetlands and includes all forested habitats within a 230 m buffer. Wetlands capable of supporting woodland amphibian breeding habitat are approximately 80 m from site and are separated by a dense forested buffer.

As no in-water work is proposed as part of the development and that no development is proposed for the woodlands within 230 m on-site, potential impacts to *candidate* woodland amphibian breeding SWH are anticipated to be limited to indirect impacts to woodlands and indirect impacts to wetland habitats.

Potential impacts to woodlands are limited to short-duration construction impacts, including heavy machinery encroachment, fill placement, and long-term human disturbances such as noise generation, dumping of refuse and yard waste and trampling. Potential indirect impacts to the PSW and local wetlands are primarily associated an increase in storm water generation and potentially increased nutrient loading to adjacent surface water features. However, given the separation distance between the wetlands and the subject property, impacts to the wetlands are anticipated to be minor, provided appropriate SWM is implemented.

Impacts from short-duration construction and long-term increased human presence are anticipated to be minimal given the existing rural development surrounding the subject property

and the availability of suitable habitat in the greater study area. Further, the proposed development includes the replanting of trees on 4.28 ha of the currently mostly barren constructed greenland community.

Mitigation measures to reduce impacts to *candidate* woodland amphibian breeding SWH are provided in Section 7.

### **6.3.4 Habitats of Special Concern and Rare Wildlife Species**

#### ***Eastern Wood-Pewee***

Eastern wood-pewee is a small, avian insectivore that lives in a variety of deciduous, mixed, and to a lesser extent, coniferous woodland habitats (COSEWIC, 2012a). The eastern wood-pewee is a species of special concern in Ontario.

No eastern wood-pewee were observed during the site investigation; however, NHIC notes an occurrence record for the species within 1 km of site.

Impacts to eastern wood-pewee and their habitat on-site from the proposed development are limited to the forest habitat on-site which may provide suitable nesting and foraging habitat.

Impacts to eastern wood-pewee habitat may include the potential loss of up to 0.41 ha of treed hedgerows within the constructed greenlands (ELC code CGL) and increased human interaction. While the proposed development will result in the loss of a portion of suitable hedgerow trees on-site, the 2.44 ha of significant woodlands on-site is not slated for development. The hedgerow trees and vegetation within the constructed greenlands that may be lost is not anticipated to limit eastern wood-pewee habitat use and availability on-site. Furthermore, the proposed development includes the replanting of trees on 4.28 ha of the currently mostly barren constructed greenland community.

Impacts from increased human presence are anticipated to be minimal given the existing rural development surrounding the subject property, and the availability of suitable habitat within the greater study area.

Mitigation measures intended to prevent negative impacts to nesting and foraging eastern wood-pewee are presented in Section 7.

#### ***Wood Thrush***

Wood thrush (*Hylocichla mustelina*) is a medium-sized songbird found in moist, deciduous hardwood or mixed forest stands, often in previously disturbed sites with dense, deciduous undergrowth and tall trees that are used as singing perches (COSEWIC, 2012b). The wood thrush is listed as a species of special concern in Ontario.

No wood thrush were observed during the site investigation; however, NHIC notes an occurrence record for the species within 1 km of site.

Impacts to wood thrush and their habitat on-site from the proposed development are limited to the forest habitat on-site which may provide suitable nesting and foraging habitat.

As no development is proposed to occur within the forest habitats on-site, impacts to wood thrush are anticipated to be indirect in nature, and are primarily associated with disturbance during construction. Post-construction, impacts from increased human presence are anticipated to be minimal given the existing rural development surrounding the subject property, and the availability of suitable habitat on-site and within the greater study area.

Mitigation measures intended to prevent negative impacts to nesting and foraging wood thrush are presented in Section 7.

### ***Snapping Turtle***

Snapping turtles is a freshwater turtle found in a variety of permanent aquatic features including wetlands, waterbodies and watercourses. In Ontario, the snapping turtle is listed as a species of special concern.

Snapping turtle was not observed on-site during the field investigation but occurrence data from NHIC indicates the species has occurred within 1 km of the property.

As no in-water work is proposed, impacts to snapping turtle are anticipated to be indirect in nature. Indirect impacts to snapping turtle may include alterations to water quality due to nutrient and sediment loading and alterations to the hydrologic regime due to slight increases in impermeable surfaces and stormwater runoff. Additional indirect impacts may also include increased human-wildlife interaction associated with migrating turtles, particularly during nesting season, when turtles move between winter and summer habitats.

Given the separation distance between snapping turtle bearing habitats and the subject property, indirect impacts to snapping turtle are anticipated to be negligible, provided appropriate SWM is implemented.

Impacts from increased human presence are anticipated to be minimal given the existing rural development surrounding the subject property, and the availability of suitable habitat within the greater study area.

Mitigation measures intended to prevent negative impacts to migrating snapping turtles are presented in Section 7.

## 6.4 Fish Habitat

According to the Provincial Policy Statement (MMAH, 2020), “development and site alteration shall not be permitted in fish habitat except in accordance with provincial and federal requirements.” Fish habitat as defined in the Fisheries Act (Canada, 1985) means “spawning grounds and nursery, rearing, food supply and migration areas on which fish depend directly or indirectly in order to carry out their life processes.”

In 2019, changes were made to the Fisheries Act, broadening the protection for fish and fish habitat. Under the new Fisheries Act, protection is afforded to all fish and fish habitat, not just those that support either a recreational, commercial, or Aboriginal fishery. Under the Fisheries Act, work that is conducted in or near waterbodies must avoid “the death of fish, other than by fishing” (Canada, 1985). Furthermore, the new Fisheries Act states that work must avoid “the harmful alteration, disruption or destruction (HADD) of fish habitat” (Canada, 1985).

When activities are unable to avoid or mitigate harm to fish or fish habitat from typical project impacts such as temperature change, sedimentation, infilling, reduction of nutrient and food supply, etc., an authorization under Subsection 35 (2) of the Fisheries Act is required for the project to proceed without contravening the Act.

The proposed land severances and future development are not anticipated to require any in-water work.

As such, potential impacts to fish habitat are anticipated to be associated with indirect impacts to provincially significant and local wetlands. Potential indirect impacts to water quality and fish habitat from the proposed development may include increased overland flow and concomitant sediment transport caused by an increase in impervious surface area, increased nutrient and/or contaminant loading through both overland and subsurface pathways resulting from landscaping practices.

Given the separation distance between the PSW/fish habitat and the subject property, impacts to the fish habitat within the PSW are anticipated to be minor, provided appropriate SWM is implemented.

Avoidance and mitigation measures intended to protect fish and fish habitat from negative impacts are discussed in Section 7.

## 6.5 Species at Risk

As outlined in the Endangered Species Act (Ontario, 2007), only species listed as threatened or endangered and their general habitat receive automatic protection. When a species-specific recovery strategy is developed, a specific habitat regulation will be established, which eventually replaces the automatic habitat protection. Species of special concern and their habitat do not receive protection under the ESA.

Potential impacts associated with the proposed project to threatened or endangered species identified as having a moderate or high potential to occur on-site in Section 4.7, are discussed on a species-by-species basis in the subsections below.

### 6.5.1 Bobolink

Bobolink (*Dolichonyx oryzivorus*) are small, omnivorous songbirds with large, somewhat flat heads, short necks and short tails. The male bobolink has a white back, black underside and a straw-yellow coloured patch on the back of the head. Female bobolinks have a non-descript buff and brown plumage not unlike most species of sparrows.

In Ontario, bobolink are restricted to southern Ontario and occur south of the Highway 17 corridor between North Bay and Sault Ste. Marie. Scattered populations exist in correlation with Clay Belt areas in Timiskaming, Cochrane and Thunder Bay areas. Between the first and second breeding bird atlas, the probability of bobolink observations declined by 28% province wide (Cadman et al., 2007).

Bobolink breed primarily in hayfields and other grasslands with tall vegetation that provides cover for nests which are established on the ground (Cadman et al., 2007). The bobolink is generally sensitive to vegetation structure and composition in its habitat that are generally found in old (> 8 years old) forage crops. Abundance and density are positively correlated with a moderate litter depth, high lateral litter cover, high grass-to-legume rations, an abundance of small shrubs and a high percentage of forb cover (COSEWIC, 2010). Bobolinks typically avoid nesting in habitats that are dominated by overly dense shrub vegetation with an overly deep litter layer or a high percentage of bare soil (COSEWIC, 2010).

Bobolink was not observed during the site investigation. The NHIC indicates the occurrence of the species within 1 km of the subject property. The field habitats on-site (Ecosite: CGL) and within the study area on-site may provide suitable habitat conditions to support species presence.

Targeted breeding bird surveys were out of scope for this EIS, as such the presence or absence of bobolink within the study area could not be confirmed. As outlined in the MNRF general habitat description for eastern meadowlark, Category 1 habitat is defined as the “nest and area within 10 m of the nest”, Category 2 habitat is defined as “the area between 10 m and 60 m from the nest or centre of approximated defended territory” and Category 3 habitat is defined as “the area of continuous, suitable habitat between 60 m and 300 m from the nest or centre of approximated defended territory.” The subject property provides potentially suitable fallow habitat within the constructed greenlands ELC area.

Development that occurs outside of the regulated Category 1, Category 2 and Category 3 habitat is not anticipated to have any negative impacts on bobolink or their habitat.

Where the development cannot avoid regulated habitat, impacts may include vegetation removal, increased human disturbance and noise generation and short-term construction impacts including heavy machine encroachment, increased noise, and fill placement.

Avoidance and mitigation measures intended to protect bobolink and their habitat during construction are provided in Section 7.

### **6.5.2 Eastern Small-footed Myotis**

Eastern small-footed myotis (*Myotis leibii*) is the smallest (typically 3-5 g) insectivorous bat found in Ontario. The fur of an eastern small-footed myotis is golden-brown in colour, with a distinct black mask across the face. The eastern small-footed myotis is very similar in appearance to the little brown myotis, and is distinguishable by their small foot and keeled calcar (Fraser, MacKenzie & Davy, 2007).

The eastern small-footed myotis is found throughout eastern North America. In Ontario, the species has been observed in the areas south of Lake Superior across to the Ontario-Quebec border (Humphrey, 2017).

Eastern small-footed myotis overwinter primarily in caves and abandoned mines with low humidity and temperatures and stable microclimates (Humphrey, 2017). In comparison to other Ontario bat species, they are able to tolerate much colder temperatures, drier conditions and draftier locations for hibernating (Humphrey, 2017). During the spring and summer months, they utilize a variety of habitats for roosting, including under rocks or rock outcrops, in buildings, under bridges, or in caves, mines or hollow trees (Ontario, 2021a).

The forest habitat on-site may meet the requirements to support bat maternity colonies and given the availability of suitable habitat and potentially suitable anthropogenic buildings within the study area, there is a potential for eastern small-footed Myotis to occur on the property, for foraging and maternal roosting. Impacts to eastern small-footed Myotis are primarily associated with encroachment and increased wildlife-human interaction. Mitigation measures intended to protect eastern small-footed myotis from impacts of the proposed development are discussed in Section 7.

### **6.5.3 Little Brown Myotis**

Little brown myotis (*Myotis lucifugus*) is a small (typically 4-11 g), insectivorous bat. The fur of a little brown myotis is bi-coloured; fur is a glossy brown with a darker coloured base. The tragus of the little brown myotis is long and thin, with a rounded tip (Fraser, MacKenzie & Davy, 2007).

In Canada, little brown myotis' occur throughout all of the provinces and territories (except Nunavut), with its range extending south through the majority of the United States as well. In Ontario, the little brown myotis is widespread in southern Ontario and has been found as far north as Moose Factory and Favourable Lake (Ontario, 2021b).

Little brown myotis overwinter in caves and abandoned mines. They require highly humid conditions and temperatures that remain above the freezing mark (Ontario, 2021b). During the summer months, maternity colonies are often located in buildings or large-diameter trees. Little brown myotis roost in trees and buildings. Foraging occurs over water and along waterways, forest edges and gaps in the forest. Open fields and clear-cuts are not typically utilized for foraging (COSEWIC, 2013).

The forest habitat on-site may meet the requirements to support bat maternity colonies and given the availability of suitable habitat and potentially suitable anthropogenic buildings within the study area, there is a potential for eastern little brown Myotis to occur on the property, for foraging and maternal roosting. Impacts to little brown Myotis are primarily associated with encroachment and increased wildlife-human interaction. Mitigation measures intended to protect little brown Myotis from impacts of the proposed development are discussed in Section 7.

#### **6.5.4 Tri-Colored Bat**

Tri-colored bat (*Perimyotis subflavos*) is a small (typically 5-7 g), insectivorous bat. The fur is uniformly coloured on the ventral and dorsal sides, however when parted, fur shows three distinct colour bands. The base of the hair is blackish, with a blonde middle and brownish tip. The snout of the tri-coloured bat is also distinct, with swollen bulbous glands present (Fraser, MacKenzie & Davy, 2007).

In Canada, the tri-colored bat has only been recorded in southern parts of Nova Scotia, New Brunswick, Quebec, and central Ontario. In Ontario, it occurs primarily from the southern edge of Lake Superior across to the Ontario-Quebec border (COSEWIC, 2013).

Tri-colored bats overwinter in caves or mines and have very rigid habitat requirements; they typically roost in the deepest parts where temperatures are the least variable and strongly correlate with humidity levels and warmer temperatures (COSEWIC, 2013). In the spring and summer, tri-colored bats utilize trees, rock crevices, and buildings for maternity colonies. Foraging is mainly done over watercourses and streamside vegetation (COSEWIC, 2013).

The forest habitat on-site may meet the requirements to support bat maternity colonies and given the availability of suitable habitat and potentially suitable anthropogenic buildings within the study area, there is a potential for eastern tri-colored bat to occur on the property, for foraging and maternal roosting. Impacts to tri-colored bat are primarily associated with encroachment and increased wildlife-human interaction. Mitigation measures intended to protect tri-colored bat from impacts of the proposed development are discussed in Section 7.

#### **6.5.5 Blanding's Turtle**

Blanding's turtles (*Emydoidea blandingii*) have a highly domed, smooth black carapace with slight, irregular tan or yellow flecking. The most distinctive characteristic of this species is the bright



yellow chin and throat. Their hinged plastron is yellow with a large dark blotch in the corner of each scute but may also be entirely black (Oldham and Weller, 2000).

In Canada, Blanding's turtles are found throughout southern and south-central Ontario from south of Manitoulin Island to western Quebec. In Ontario, Blanding's turtles are often observed utilizing eutrophic habitats with clear water (COSEWIC, 2016). This turtle species occurs primarily in shallow water; adults are generally found in open or partially vegetated sites, whereas juveniles prefer areas that contain thick aquatic vegetation. Blanding's turtles are known to make extensive overland journeys between connected lakes, rivers, streams, marshes, or ponds, upwards of 6 km in a single active season. Overwintering occurs in permanent pools that average about one metre in depth or slow-flowing streams (COSEWIC, 2016).

While targeted basking turtle surveys were not completed in support of this EIS, the site is located within a greater area of known Blanding's turtle occurrences, review of NHIC occurrence data indicates the species has been observed within 1 km of the site. During the site investigation, Blanding's turtles were not detected on-site.

As outlined in the MNRF general habitat description for Blanding's turtle, Category 1 habitat is defined as "the nest and the area within 30 m of the nest or overwintering sites and the area within 30 m of the site", Category 2 habitat is defined as "the wetland complex (i.e. all suitable wetlands or waterbodies within 500 m of each other) that extends up to 2 km from an occurrence and the area within 30 m around those suitable wetlands or waterbodies" and Category 3 habitat is defined as "the area between 30 m and 250 m around suitable wetlands and waterbodies identified as Category 2, within 2 km of an occurrence."

As regulated Blanding's turtle habitat extends up to 2 km from on observation, based conservatively on the NHIC observation data, all wetlands within the study area are assumed to provide a minimum of Category 2, and Category 3 habitat. As discussed in Section 4.5.1.2, the off-site PSW has the potential to provide suitable conditions for overwintering habitat, however no Category 1 habitat has been confirmed. No nesting habitat has been identified on-site. Based on application of the GHD, Category 3 habitat extends on-site.

No in-water work, is anticipated as part of the proposed development; therefore impacts to Blanding's turtle are anticipated to be associated with indirect wetland impacts, a minor loss of Category 3 habitat, and potential impacts to transient Blanding's turtles.

As outlined in the General Habitat Description, activities in Blanding's turtle habitat that are generally compatible include small-scale alterations to land cover that do not impede overland movements or impair nesting sites. Generally incompatible activities include significant draining, infilling, dredging or significant wetland alteration, and significant alteration of shorelines.



As described above, the proposed development will not result in any alteration to wetlands or shorelines, nor will it impair nesting sites.

Impacted Category 3 habitat is limited to 2.05 ha that falls within the development area of the proposed subdivision. The loss of this habitat is not anticipated to impede overland movements of Blanding's turtle or the function of the Category 3 habitat on-site.

The development is proposed to impact a total of 2.05 ha of Category 3 habitat. This habitat is considered low quality when considering the existing functions and vegetation cover. The entirety of this impacted area occurs within the constructed greenlands, parts of which are devoid of vegetation. As discussed in Section 3.4, the constructed greenlands have historically been used as fair grounds and have undergone historic and on-going disturbance, making it unlikely to provide quality Category 3 habitat function. The migratory function of this Category 3 area is limited, as the area does not provide protected, vegetated linkages for migration.

On-site the forested Category 3 habitat on-site provides much higher quality migration and transitional functions and will be preserved through development. 2.44 ha of Category 3 habitat will be protected within this area, ensuring the continued function of Category 3 habitat on-site. The preserved 2.44 ha is forested, making it likely to provide high quality Category 3 habitat functions, and has natural heritage linkages to the PSW northwards and off-site.

In consideration of the proposed project, and considering that the loss of low-quality Category 3 habitat and maintenance of high-quality, forested Category 3 habitat, the proposed development is not anticipated to impede overland movements of Blanding's turtle or the function of Category 3 habitat on-site or in the surrounding area.

Given the proposed development and minimal impact potential to Blanding's turtle and their habitat, it is GEMTEC's opinion that standard avoidance and mitigation measures will be sufficient to mitigate impacts of the proposed project and no ministry consultation is required

Avoidance and mitigation measures intended to prevent harm to Blanding's turtles who have the potential to occur on-site are present in Section 7.

#### **6.5.6 Black Ash**

Black ash (*Fraxinus nigra*) is a medium-sized tree that can reach heights of up to 27 m. It is distinguished by its compound leaves, typically made up of 9 stalkless, hairless leaflets, as well as its soft, corky bark.

The Canadian range for black ash extends from western Newfoundland to southeastern Manitoba (Ontario, 2023a). It is a shade-intolerant species that is typically found on moist to wet sites, including swamps, bogs and riparian areas.

Black ash trees were observed on-site within vernal pool areas of the lowland deciduous forest. No development is proposed to occur within the woodlands on-site.

Black ash was added to the Species at Risk in Ontario List in January 2022. Following its addition to the registry, the MECP temporarily suspended protections for a period of two years. During this time period proponents will not need to seek authorizations for activities that impact black ash and its habitat (Ontario, 2023a).

As habitat and species protections are suspended until January 2024, at the time of the site investigation and preparation of this report, no protections are required for black ash. However, any future development on-site, including vegetation removal, site disturbance, or construction that occurs after January 2024 will be required to adhere to any relevant protections black ash is granted under the ESA. After the decision on black ash is announced by the Minister, the EIS should be revised to include any relevant protections and provide mitigation for black ash as required under the ESA.

## **6.6 Cumulative Impacts**

Potential cumulative impacts associated with the proposed project include an increase in storm water generation, potential increase in nutrient loading to aquatic features, and the loss of field and forest habitat, primarily for avian species.

Cumulative impacts to the natural environment at the site due to increased human presence, increased wildlife and human interaction and increased noise, are expected to be negligible given the existing residential and agricultural land use in the surrounding project area.

Cumulative impacts such as those listed above can be mitigated by implementing the proposed setbacks and recommended mitigation measures outlined in Section 7 below.

## 7.0 RECOMMENDED AVOIDANCE AND MITIGATION MEASURES

The following avoidance and mitigation measures have been recommended by GEMTEC in order to minimize or eliminate potential environmental impacts identified in Section 6.

For the purpose of this report, a setback is defined as the minimum required distance between any structure, development, or disturbance and a specified line. A buffer, for this report, is defined as the area located between a natural heritage feature and the prescribed setback. For the following subsections, buffers should be located between natural heritage features and lands subject to development or alteration, be permanently vegetated by native or non-invasive, self-sustaining vegetation, and protect the natural heritage feature against the impact of the adjacent land use.

Vegetated buffers, particularly buffers that are vegetated with a mix of grassy herbaceous vegetation and shrubby or woody vegetation are most effective in mitigating impacts associated with anthropogenic activities in adjacent lands (Beacon, 2012). In the subsections below, where possible, literature references for studies used as the basis of the recommended buffer widths are provided.

### 7.1 Provincially Significant and Local Wetlands and Fish Habitat

No negative impacts on the integrity of the local and significant wetlands or fish habitat are anticipated as a result of the proposed development if all mitigation measures recommended below are enacted and best management practices followed. Wetlands on-site can be protected against potential impacts of the proposed development through the implementation of a construction setback.

Beacon Environmental Review of Ecological Buffers (2012), provides a range for buffer widths to protect various natural heritage features based on the current science. The buffers are presented in a way that determines the risk of not achieving the desired buffer function (i.e. high, moderate and low). The functions analysed include water quantity, water quality, screening or human disturbance/changes in land use, hazard mitigation zone and core habitat protection. Impacts to the local wetlands and PSW on and off-site were identified to include potential impacts to water quality, human disturbance and core habitat protection (*candidate* habitat for Blanding's turtle, *candidate* woodland amphibian breeding habitat and *candidate* snapping turtle SWH). Wetland buffer widths have a moderate risk of not providing adequate mitigation for water quality impacts at widths between 11 m and 50 m. Wetland buffer widths have a moderate risk of not providing adequate mitigation for human disturbance/land use change impacts at widths between 11 m and 30 m and low risk at widths of 31 m to 50 m. Wetland buffer widths have a moderate risk of not providing adequate mitigation for core habitat protection at widths between 21 m and 60 m.

In consideration of the PSW within the study area, pre-consultation with the CRCA indicates that a minimum 30 m setback from the PSW is required. The 30 m setback falls into the moderate risk

of not achieving the desired buffer function for mitigating water quality impacts and human disturbance.

In consideration of the local wetlands, a minimum 30 m setback from all local wetlands is recommended. The recommended 30 m setback falls into the moderate risk of not achieving the desired buffer function for mitigating water quality impacts and human disturbance. Setbacks are illustrated on Figure A.6 in Appendix A.

No negative impacts on the ecological function of the PSW, local wetlands or fish habitat are anticipated as a result of this project if the setbacks proposed above, and all mitigation measures and best management practices recommended below are adhered to.

General mitigation measures recommended for the protection of water quality, wetland habitat and fish habitat include:

- All future development and construction activities within the study area, including ditching, culvert installation, erosion and sediment control and storm water management should be completed in accordance with Ontario Provincial Standard Specification 182 and OPSS 805.
- In order to protect fish habitat from contamination, it is recommended that all machinery be maintained in good working condition and that all machinery be fueled a minimum of 30 m from the high water mark.
- Any temporary storage of aggregate material shall be set back from the water's edge by no less than 30 m and be contained by heavy-duty silt fencing.

## 7.2 Significant Woodlands

As described in Section 6.2, no development is slated to occur within significant woodlands. As such, woodlands on-site will continue to meet the significant woodlands status based on contiguous size and ecological function despite the minor loss. No negative impacts on the ecological function of the significant woodlands are anticipated as a result of this project if all mitigation measures and best management practices recommended in Section 7.7 below are adhered to.

## 7.3 Significant Wildlife Habitat

### 7.3.1 *Candidate Bat Maternity Colony SWH*

To protect roosting and foraging bats, tree and vegetation removal where required should take place outside of the spring and summer active season (typically March 15 to November 30), when bats are more likely to be using forest habitat. Should any components of the proposed project require tree clearing within between March 15 and November 30, further consultation with the MECP is required.

### **7.3.2 Candidate Turtle Wintering Area SWH**

The development setbacks as presented above to protect provincially significant and local wetlands, are sufficient to protect *candidate* turtle wintering area SWH.

To further protect turtles, exclusion fencing should be installed around areas of active construction prior to construction commencing to prohibit the movement of turtles into the construction area. Exclusion fencing should follow guidelines established in *Species at Risk Branch Best Practices Technical Note – Reptile and Amphibian Exclusion Fencing* (OMNRF, 2013b). Stockpiled materials should be covered with a geotextile to prevent turtles from nesting in the material between May 1 and August 1 of any year.

### **7.3.3 Candidate Woodland Amphibian Breeding Habitat**

As mentioned in Section 6.3.2, no development is slated to occur within the on-site woodlands that support woodland amphibian breeding. To mitigate impacts on migrating amphibians on-site, the proposed development will be encouraged to keep nature in mind in order to maximize woodland coverage. Maintaining woodland coverage when possible, and the revegetating of 4.28 ha of the constructed greenland will provide ample opportunity for woodland dispersal and summer habitats within the built subdivision and surrounding vacant lands. The mitigation measures as prescribed above for the protection of the provincially significant and local wetlands are sufficient to protect the aquatic component of the breeding habitat.

In addition to the above mitigation measures, exclusion fencing should be installed around areas of active construction prior to construction commencing to prohibit the movement of amphibians into the construction area. Exclusion fencing should follow guidelines established in *Species at Risk Branch Best Practices Technical Note – Reptile and Amphibian Exclusion Fencing* (OMNRF, 2013b). Stockpiled materials should be covered with a geotextile to prevent turtles from nesting in the material between May 1 and August 1 of any year.

### **7.3.4 Habitats of Special Concern and Rare Wildlife Species**

#### **7.3.4.1 Eastern Wood-Pewee and Wood Thrush**

To protect nesting and foraging eastern wood-pewee and wood thrush on-site, vegetation removal should occur outside of March 31 to August 31 to avoid the key breeding bird period as identified by Environment Canada. If vegetation clearing activities must take place during the aforementioned timing window, then a nest survey shall be conducted by a qualified professional.

#### **7.3.4.2 Snapping Turtle**

The development setbacks as presented above to protect provincially significant and local unevaluated wetlands, are sufficient to protect the aquatic components of *candidate* foraging and basking habitat for snapping turtle.

To further protect migrating snapping turtle individuals on-site, exclusion fencing should be installed around the entire construction area prior to construction commencing to prohibit the movement of turtles and amphibians into the construction area. Exclusion fencing should follow guidelines established in *Species at Risk Branch Best Practices Technical Note – Reptile and Amphibian Exclusion Fencing* (OMNRF, 2013b). Stockpiled materials should be covered with a geotextile to prevent turtles from nesting in the material between May 1 and August 1 of any year.

## **7.4 Species at Risk**

### **7.4.1 Bobolink**

As indicated in Section 6.6.3, bobolink, an avian SAR have the potential to occur on-site. Based on the MNRF General Habitat Description (Appendix E), suitable habitat occurs on-site within the fallow, grassy areas of the old fair grounds. The current proposed development plan has the potential to impact regulated bobolink habitat.

In order to determine the presence or absence of bobolink and their habitat, breeding bird surveys should be completed in 2024 during the appropriate timing window. Breeding bird surveys should follow the approved protocol for bobolink, as established by the MNRF. Following completion of the breeding bird surveys, the EIS should be revised to include the results.

If bobolink are not identified on-site no further mitigation measures will be required.

If bobolink are identified on-site, further mitigation and compensation measure will be required if development is unable to avoid regulated habitat. Prior to any potential disturbance within regulated habitat, the project will need to be registered with the MECP by submitting a Notice of Activity for Bobolink and Eastern Meadowlark – Activities impacting 30 hectares or less of habitat. No disturbance can take place prior to receiving conformation from the MECP. Mitigation and compensation measures, if required may include habitat creation or payment into the Species at Risk Fund. The amount of habitat creation or payment amount is determined based on the amount of impacted habitat. Following completion of the breeding bird surveys, if bobolink are identified on-site the EIS should be revised to include a more detailed discussion on the compensation requirements.

### **7.4.2 Eastern Small-footed Myotis, Little Brown Myotis and Tri-Colored Bat**

As no critical habitat (i.e. overwintering caves or crevasses, or maternity roosts) were identified on-site, in accordance with MECP best management practices, to protect roosting and foraging bats, tree removal where required shall take place outside of the spring and summer active season (typically March 15 to November 30), when bats are more likely to be using forest habitat. If vegetation clearing cannot avoid the active season, the consultation with the MECP is needed to determine whether the project will require an authorization.

To further protect bat species during vegetation removal, trees and vegetation (during the appropriate timing window) should be cleared in stages, working from the outer edge, in towards the centre, in order to provide wildlife in the forest time to migrate out.

In GEMTECs experience on similar development applications and consultation with the MECP for projects and properties of similar size and scale, the above mitigation/avoidance measures are sufficient to ensure no negative impacts to SAR bats. In eastern Ontario habitat is not a limiting factor, as such the MECP recommends the use of avoidance timing window for clearing of trees (>10 cm in diameter) in order to avoid impacts to SAR bat species. As long as timing windows can be adhered to, the project will not impact SAR bats, and it is GEMTECs opinion that no further consultation with the MECP is required.

Should any components of the proposed project require tree clearing between March 15 and November 30, further consultation with the MECP is required.

### **7.4.3 Blanding's Turtle**

The proposed project will result in the loss of 2.05 ha of low-quality Category 3 habitat, that has limited migratory functions. This loss of Category 3 habitat is not anticipated to negatively impact the function of remaining Category 3 habitat. Given the proposed development and minimal impact potential to Blanding's turtle and their habitat, it is GEMTEC's opinion that standard avoidance and mitigation measures will be sufficient to mitigate impacts of the proposed project and no ministry consultation is required.

The following mitigation measures are expected to be implemented to avoid contravention of the ESA:

- Prior to any site work, reptile and amphibian temporary exclusion fencing should be installed around the entire perimeter of any active construction areas to prevent the migration of Blanding's Turtles and other wildlife into the construction zone. The exclusion fencing will also provide a visual demarcation of the development area for workers during construction. Exclusion fencing should follow the protocols outlined in the Species at Risk Branch: Best Practices Technical Note: Reptile and Amphibian Exclusion Fencing Version 1.1 (MNRF, July 2013).
- Each day of construction a daily pre-work sweep of the construction area should occur to ensure no SAR are present and to remove any wildlife from inside the construction area.
- All staff working on-site should be provided Species at Risk training to identify species at risk which a potential to occur on-site including: Blanding's turtle. Training will also outline the stop work procedures and MECP reporting/consultation prior to resuming work.
- During construction if any SAR is identified on-site all work should stop and a qualified professional and the MECP should be contacted for next steps. SAR sightings should be reported to the MECP and the NHIC.



- Tree clearing and vegetation removal will be undertaken outside of the active season for Blanding's turtles. Prior to vegetation removal a sweep will be completed to ensure Blanding's turtles are absent from the area.
- Cover all stockpiled material with a geotextile to prevent turtles from nesting in the material between May 1 and August 1 of any year.
- To protect aquatic habitat for Blanding's turtles, machinery should be maintained in good working condition and all machinery should be fueled a minimum of 30 m from the high water mark.
- Following construction completion, future property owners will be provided with information and awareness packages for SAR that have the potential to occur on their property. Information and awareness packages will include information on species identification, life-history, and habitat use for all species at risk with a potential to occur on-site, including Blanding's turtle. Information packages will also include contact/reporting options to the MECP and NHIC if species are encountered.
- Post-construction road awareness signs should be installed to alert neighbourhood drivers of potential turtle crossing, to reduce turtle road fatalities.

#### 7.4.4 Black Ash

As discussed in Section 6.5.7 protections for black ash have been suspended until January 2024. Until this time, proponents do not need to seek authorizations from the MECP for activities that impact black ash and its habitat (Ontario, 2023a). At the time of this EIS report preparation, no further actions are required to address black ash.

Following the decision from the Ministry in January 2024, the EIS should be revised to include any relevant protections black ash is granted under the ESA.

#### 7.5 Wildlife

The following avoidance and mitigation measures are provided in effort to minimize impacts to on-site and off-site wildlife:

- Vegetation removal should occur outside of March 15 to November 30 to avoid the key breeding bird period, active turtle season, and bat summer active season. The timing windows provides protection of migratory birds, SAR turtles, roosting bats and avoids contravention of the Migratory Bird Convention Act and Endangered Species Act. If vegetation clearing activities must take place during the aforementioned timing window then a nest survey and site sweep shall be conducted by a qualified professional to ensure no impacts to birds or turtles. If vegetation removal has the potential to impact SAR bats (i.e. vegetation removal within contiguous forested tracts) consultation with the MECP is required to determine whether the project will require an authorization.



- Installation of silt fence barriers around the entire development envelope to prohibit the emigration of wildlife into the construction area, silt fencing should be checked daily and following each precipitation event.
- Perform daily pre-work sweeps of the construction area to ensure no species at risk are present and to remove any wildlife from inside the construction area.
- Should any species at risk be discovered throughout the course of the proposed works, the species at risk biologist with the local MECP district shall be contacted immediately and operations ceased to avoid any negative impacts to species at risk or their habitat until further direction is provided by the MECP.

## **7.6 Best Practice Measures for Mitigation of Cumulative Impacts**

The following best practice measures are provided for the mitigation of cumulative impacts resulting from general construction and development activities;

- To protect trees identified to be retained during construction, the Critical Root Zone (CRZ) should be identified and fenced. The CRZ is defined as 10 cm from the base of the tree for every centimetre in diameter of the tree trunk measured at breast height.
- Maintain as much permeable surface as possible in future development plans to minimize the generation of stormwater runoff.
- In effort to offset the effect of vegetation clearing, consideration should be given to landscape planting with native tree species indicative of the Great Lakes – St. Lawrence Forest Region, such as white cedar, white spruce, red maple, and bur oak.

## 8.0 CONCLUSIONS

The proposed project supported by this EIS is the proposed residential development on an existing 11.93 ha property. The residential development will include 38 residential dwellings, a small commercial space, park and amenity space, 4.28 ha of landscaped greenspace, internal roadways and parking, septic tank and bed installation, and a stormwater management area. The proposed development is presented on Figure A.5 of Appendix A.

Based on the results of the impact analysis, impacts to the natural environment are anticipated to be minimal. Provided that mitigation measures recommended in Section 7 are implemented as proposed, no significant residual negative impacts are anticipated from the proposed future development.

Following review of the information pertaining to the natural heritage features of the site, the following general conclusions are provided by GEMTEC in regards to the Environmental Impact Statement.

- No significant negative impacts to natural heritage features identified on-site, including provincially significant and local wetlands, significant woodlands, significant wildlife habitat, fish habitat, and species at risk from future residential development are anticipated.
- The proposed project complies with the natural heritage policies of the Provincial Policy Statement.
- The proposed development complies with the natural heritage policies of the Township of Elizabethtown-Kitley Official Plan and the United Counties of Leeds and Grenville Official Plan.

## 9.0 LIMITATION OF LIABILITY

This report and the work referred to within it have been undertaken by GEMTEC Consulting Engineers and Scientists Ltd (GEMTEC), and prepared for Les Placements Habitations Campus Ltee and is intended for the exclusive use of Les Placements Habitations Campus Ltee. This report may not be relied upon by any other person or entity without the express written consent of GEMTEC, Les Placements Habitations Campus Ltee. Nothing in this report is intended to provide a legal opinion.

The investigation undertaken by GEMTEC with respect to this report and any conclusions or recommendations made in this report reflect the best judgements of GEMTEC based on the site conditions observed during the investigations undertaken at the date(s) identified in the report and on the information available at the time the report was prepared.

This report has been prepared for the application noted and it is based, in part, on visual observations made at the site, all as described in the report. Unless otherwise stated, the findings contained in this report cannot be extrapolated or extended to previous or future site conditions, or portions of the site that were unavailable for direct investigation.

Should new information become available during future work or other studies, GEMTEC should be requested to review the information and, if necessary, re-assess the conclusions presented herein.

We trust this report provides sufficient information for your present purposes. If you have any questions concerning this report, please do not hesitate to contact our office.

Sincerely,



Luca Fiorindi, B.A., G.Cert.  
Jr. Biologist



Taylor Warrington, B.Sc.  
Biologist

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## **APPENDIX A**

### Report Figures

Figure A.1 – Site Location

Figure A.2 – Site Layout

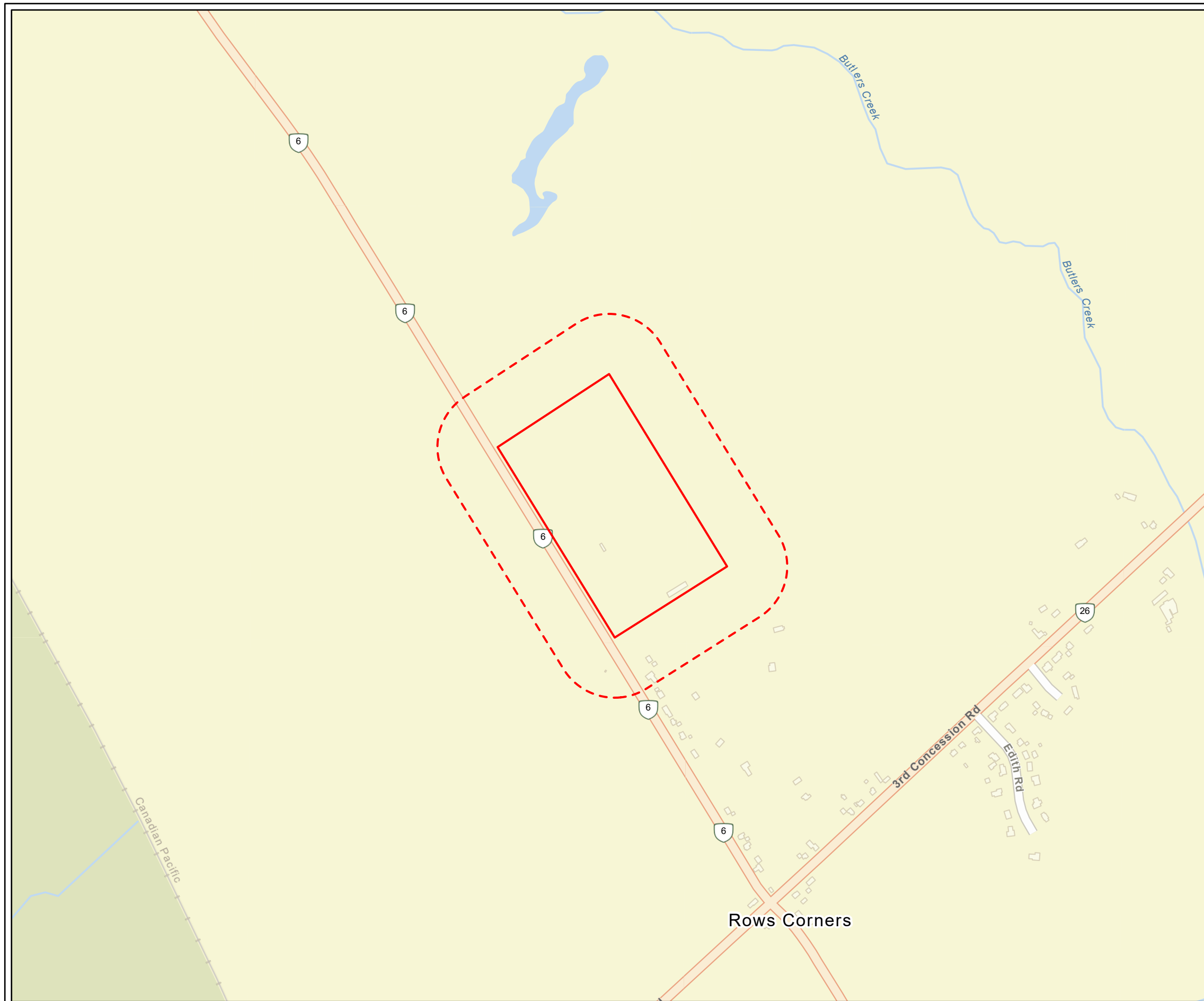
Figure A.3 – Vegetation Communities

Figure A.4 – Natural Heritage Features

Figure A.5 – Development Concept

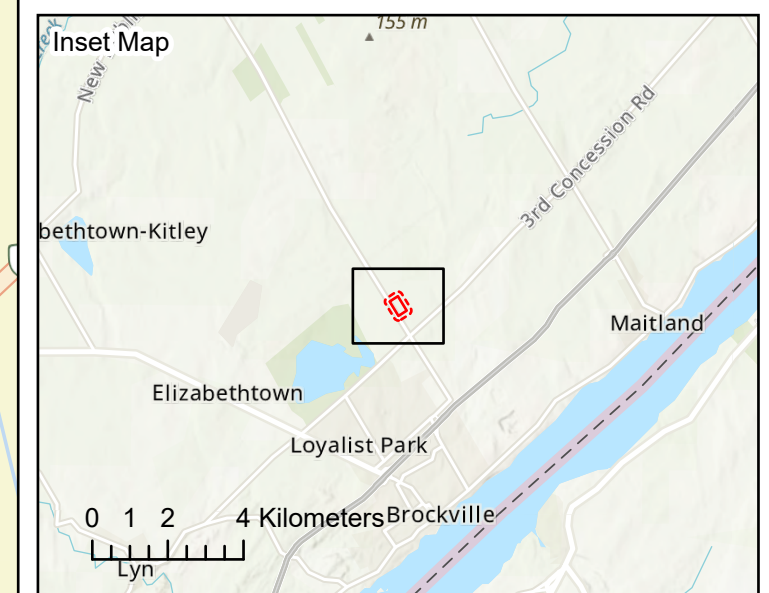
Figure A.6 – Mitigation Measures





**Legend**

- Property Boundary
- Study Area



Scale  
1:8,000  
0 1 2 4 Kilometers  
Meters  
0008012060

**GEMTEC**  
CONSULTING ENGINEERS  
AND SCIENTISTS

32 Steacie Drive,  
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ottawa@gemtec.ca

Client: <b>Les Placements Habitations Campus Ltee</b>	Project: <b>100030.029</b>
---	----------------------------

Location  
**3823 County Road 6,  
Township of Elizabethtown-Kitley, Ontario**

Drwn By: C.Z.	Chkd By: L.F.	<b>Site Location</b>
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Date: December 2023	Rev. 0	<b>Figure: A.1</b>
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Coordinate System: NAD 1983 UTM Zone 18N  
 Service Layer Credits: World Street Map: Esri Community Maps Contributors, Province of Ontario, © OpenStreetMap, Microsoft, Esri Canada, Esri, HERE, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, US Census Bureau, USDA, NRCAN, Parks Canada  
 World Topographic Map: Province of Ontario, Esri Canada, Esri, HERE, Garmin, SafeGraph, METI/NASA, USGS, EPA, NPS, USDA, NRCAN, Parks Canada





**Legend**

- Property Boundary
- Study Area
- Local Wetland
- Provincially Significant Wetland

Scale		1:3,500	
		Meters	
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Client: <b>Les Placements Habitations Campus Ltee</b>		Project: <b>100030.029</b>	
Location <b>3823 County Road 6,          Township of Elizabethtown-Kitley, Ontario</b>			
Drwn By: C.Z.	Chkd By: L.F.	Site Layout	
Date: December 2023		Rev. 0	Figure: A.2
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Coordinate System: NAD 1983 UTM Zone 18N  
 Service Layer Credits: Hybrid Reference Layer: Esri Community Maps Contributors, Province of Ontario, © OpenStreetMap, Microsoft, Esri Canada, Esri, HERE, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, US Census Bureau, USDA, NRCAN, Parks Canada  
 World Imagery: New York State, UCLG, Maxar

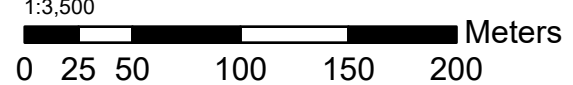





**Legend**

- Property Boundary
- Study Area
- Local Wetland
- Provincially Significant Wetland
- Vegetation Community

CGL: Constructed Greenland  
 FODM5: Dry to Fresh Sugar Maple Deciduous Forest  
 FODM7: Fresh to Moist Lowland Deciduous Forest

Scale		1:3,500	
		Meters	
		32 Steacie Drive, Ottawa, ON K2K 2A9 T: (613) 836-1422 www.gemtec.ca ottawa@gemtec.ca	
Client: <b>Les Placements Habitations Campus Ltee</b>		Project: 100030.029	
Location <b>3823 County Road 6,          Township of Elizabethtown-Kitley, Ontario</b>			
Drwn By: C.Z.	Chkd By: L.F.	<b>Vegetation Communities</b>	
Date: December 2023		Rev. 0	<b>Figure: A.3</b>
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Coordinate System: NAD 1983 UTM Zone 18N  
 Service Layer Credits: Hybrid Reference Layer: Esri Community Maps Contributors, Province of Ontario, © OpenStreetMap, Microsoft, Esri Canada, Esri, HERE, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, US Census Bureau, USDA, NRCAN, Parks Canada  
 World Imagery: New York State, UCLG, Maxar





**Legend**

- Property Boundary
- Study Area
- Local Wetland
- Provincially Significant Wetland
- Significant Woodland
- Blanding's Turtle Habitat - Category 2
- Blanding's Turtle Habitat - Category 3

Scale		1:3,500	
		Meters	
		32 Steacie Drive, Ottawa, ON K2K 2A9 T: (613) 836-1422 www.gemtec.ca ottawa@gemtec.ca	
Client: <b>Les Placements Habitations Campus Ltee</b>		Project: 100030.029	
Location <b>3823 County Road 6,          Township of Elizabethtown-Kitley, Ontario</b>			
Drwn By: C.Z.	Chkd By: L.F.	<b>Natural Heritage Features</b>	
Date: December 2023		Rev. 0	<b>Figure: A.4</b>
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 World Imagery: New York State, UCLG, Maxar





**Legend**

- Property Boundary
- Study Area
- Local Wetland
- Provincially Significant Wetland
- Proposed Building
- Proposed Paved Area
- Proposed Park and Amenity Space
- Proposed Stormwater Management Area
- Proposed Septic Tank and Bed Area

Scale		1:3,500	
		Meters	
		32 Steacie Drive, Ottawa, ON K2K 2A9 T: (613) 836-1422 www.gemtec.ca ottawa@gemtec.ca	
Client: <b>Les Placements Habitations Campus Ltee</b>		Project: <b>100030.029</b>	
Location <b>3823 County Road 6,          Township of Elizabethtown-Kitley, Ontario</b>			
Drwn By: C.Z.	Chkd By: L.F.	<b>Development Plan</b>	
Date: December 2023		Rev. 0	<b>Figure: A.5</b>
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Coordinate System: NAD 1983 UTM Zone 18N  
 Service Layer Credits: Hybrid Reference Layer: Esri Community Maps Contributors, Province of Ontario, © OpenStreetMap, Microsoft, Esri Canada, Esri, HERE, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, US Census Bureau, USDA, NRCAN, Parks Canada  
 World Imagery: New York State, UCLG, Maxar





### Legend

- Property Boundary
- Study Area
- Local Wetland
- Provincially Significant Wetland
- Significant Woodland
- Blanding's Turtle Habitat - Category 2
- Blanding's Turtle Habitat - Category 3
- Proposed Development Concept
- 30m Setback

Scale		1:3,500	
		Meters	
		32 Steacie Drive, Ottawa, ON K2K 2A9 T: (613) 836-1422 www.gemtec.ca ottawa@gemtec.ca	
Client: <b>Les Placements Habitations Campus Ltee</b>		Project: 100030.029	
Location <b>3823 County Road 6,          Township of Elizabethtown-Kitley, Ontario</b>			
Drwn By:	Chkd By:	Mitigation Measures	
C.Z.	L.F.		
Date: December 2023		Rev.	Figure: A.6
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Coordinate System: NAD 1983 UTM Zone 18N  
 Service Layer Credits: Hybrid Reference Layer: Esri Community Maps Contributors, Province of Ontario, © OpenStreetMap, Microsoft, Esri Canada, Esri, HERE, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, US Census Bureau, USDA, NRCAN, Parks Canada  
 World Imagery: New York State, UCLG, Maxar





## **APPENDIX B**

Site Photographs



Site Photograph 1: Dry to Fresh Cedar Coniferous Forest Inclusion (FOCM2)



Site Photograph 2: Dry to Fresh Cedar Coniferous Forest Inclusion (FOCM2)



Site Photograph 3: Dry to Fresh Sugar Maple Deciduous Forest (FODM5)



Site Photograph 4: Dry to Fresh Sugar Maple Deciduous Forest (FODM5)





Site Photograph 5: Fresh to Moist Lowland Deciduous Forest (FODM7)



Site Photograph 6: Fresh to Moist Lowland Deciduous Forest (FODM7)



Site Photograph 7: Constructed Greenlands (CGL)



Site Photograph 8: Constructed Greenlands



**APPENDIX C**

Wetland Delineation Letter

November 3, 2023

File: 100030.029

Les Placements Habitations Campus Ltee  
2440 Rue Yearling  
Saint-Lazare, Quebec  
J7T 2E3

**Re: Wetland Delineation and Provisional Preliminary Constraints  
Proposed Residential Development, Rows Corners Fairground  
3823 County Road 6, Township of Elizabethtown-Kitley, Ontario**

---

Please accept this letter as the GEMTEC Consulting Engineers and Scientists Limited (GEMTEC) memo summarizing the results of the wetland boundary assessment completed for the Rows Corners Fairground, located at 3823 County Road 6, in the Township of Elizabethtown-Kitley, Ontario.

## **BACKGROUND**

The proponent is seeking to develop a vacant property municipally addressed as 3823 County Road 6, Township of Elizabethtown-Kitley, Ontario (herein referred to as the subject property). The Buell's Creek Reservoir Provincially Significant Wetland is located to the north of the subject property, in addition to the off-site PSW the Cataraqui Region Conservation Authority (CRCA), has identified the potential presence of local, unevaluated wetland in the north portion of the subject property (illustrated with the dashed blue line on Figure A.1). The proponent is trying to determine the feasibility of development for the subject property for future residential development, as such a wetland boundary assessment was completed to determine the extent of the local wetlands on-site and/or within the study area. This letter serves to summarize the methodologies and results of the wetland boundary assessment.

## **METHODOLOGY**

To complete the wetland boundary assessment, a single site investigation was completed on October 6, 2023 from 08:15 to 09:15 to provide field verification of vegetation communities delineated during the desktop review. The conditions at the time of the field investigation were overcast, 100% cloud cover, no precipitation, 20°C and moderate wind (Beaufort 3).

Field verification of vegetation communities was completed by walking linear transects along the soil moisture gradient from drier to wetter ecosites while documenting dominant vegetation species within the various vegetation community forms. The boundary between wetland ecosites and terrestrial ecosites was determined using the *50/50 Vegetation Rule* as outlined in the Ontario Wetland Evaluation System for Southern Ontario (OMNRF, 2014), where the wetland boundary



is determined to be the point along each transect when 50% of the vegetation becomes comprised of hydrophilic or obligate wetland species.

## RESULTS

As described above, the wetland boundary was determined by identifying the point along each transect when 50% of the vegetation becomes wetland obligate species. Field data points were collected via Arc GIS Field Maps application in the field to create an updated wetland boundary line. Figure A.1 in the attachments illustrates the original CRCA (dashed blue line). Results of the field investigation indicate that there is no wetland on-site or adjacent to site.

In the northern portion of the property, the CRCA has identified a potential area of local wetland. The field investigation was completed to determine the vegetation communities present on-site and determine the wetland boundary. Three distinct communities were observed on-site, a sugar maple forest along the northwest property boundary, coniferous forest band and a fresh-moist deciduous woodland extending over the north east corner of the property.

The sugar maple forest in the northwest corner was dominated by sugar maple (*Acer saccharum*), with ironwood (*Ostrya virginiana*), eastern white cedar (*Thuja occidentalis*), black cherry (*Prunus serotina*), and trembling aspen (*Populus tremuloides*). The coniferous forest band was dominated by eastern white cedar with bur oak (*Quercus macrocarpa*), trembling aspen, and black cherry. The herbaceous layer for both communities was sparse but included wood fern (*Dryopteris* sp.).

Vegetation within the northeast corner of the subject property was characteristic of a fresh deciduous forest. Vegetation within this area was dominated by American elm (*Ulmus americana*), red maple (*Acer rubrum*), and green ash (*Fraxinus pennsylvanica*), with other common constituents including white spruce (*Picea glauca*), and bur oak. The shrub layer was dominated by common buckthorn (*Rhamnus cathartica* L.), and to a lesser extent green ash, black ash (*Fraxinus nigra*), and eastern white cedar. Herbaceous vegetation includes dwarf raspberry (*Rubus pubescens*), flat-topped white aster (*Doellingeria umbellata*), sensitive fern (*Onoclea sensibilis*), horsetail (*Equisetum* sp.), nightshade (*Solanaceae* sp.), calico aster (*Symphotrichum lateriflorum*), and grasses. It was determined through passive observations of the neighbouring property and aerial imagery interpretation that the adjacent woodland off-site was noted as having similar species, density and structure as the on-site deciduous forest. Based on the vegetation survey, the woodlands in the north are not consistent with wetland communities. Thus, the no wetlands have been identified on-site or adjacent to site.

Site photographs taken during the wetland boundary assessment are provided in Appendix B.

## CONCLUSION

We trust that this report is sufficient for your current needs, however, should you require clarification of the information present above, please do not hesitate to contact the undersigned.

Sincerely,



Emily Pentz, B.Sc.  
Junior Biologist



Taylor Warrington, B.Sc.

Enclosures

N:\Projects\100000\100030.029\05\_Technical Work\Wetland Delineation\100030.029\_LRT\_Wetland Delineation\_2023-11-03\_Rev0.docx



## **ATTACHMENTS**

Attachment A: Figure A.1 – Site Layout

Attachment B: Site Photographs



**Legend**

- Property Boundary
- Study Area
- Local Wetland (CRCA)
- Provincially Significant Wetland (CRCA)
- Local Wetland

Scale		1:3,250		Meters	
		32 Steacie Drive, Ottawa, ON K2K 2A9 T: (613) 836-1422 www.gemtec.ca ottawa@gemtec.ca			
Client: <b>Les Placements Habitations Campus Ltee</b>			Project: 100030.029		
Location <b>3823 County Road 6,          Township of Elizabethtown-Kitley, Ontario</b>					
Drwn By:	Chkd By:	Site Layout			
EP	TW	Date: November 2023		Rev.	
© Queen's Printer for Ontario				0	Figure: A.1





Site Photograph 1: Fresh deciduous forest, previously mapped as wetland.



Site Photograph 2: Fresh deciduous forest, previously mapped as wetland.



Site Photograph 3: Fresh deciduous forest, previously mapped as wetland.



Site Photograph 4: Fresh deciduous forest, previously mapped as wetland.





Site Photograph 5: Eastern White Cedar Community



Site Photograph 6: Eastern White Cedar Community



Site Photograph 7: Sugar Maple Community



Site Photograph 8: Sugar Maple Community



## **APPENDIX D**

Report Summary Tables

**TABLE D.1  
SCREENING RATIONAL FOR SIGNIFICANT WOODLANDS**

<b>Woodland Criteria</b>	<b>Further Considered in EIS</b>	<b>Rationale</b>
Woodland Size	Yes	Contiguous woodlands on-site meet the minimum size requirement for the planning area (> 50 ha).
Ecological Functions		
a) Woodland Interior	Yes	Interior woodland within the greater study area meets the minimum size requirement for the planning area (> 8 ha). However, no interior habitat is present on-site.
b) Proximity	Yes	Woodlands on-site form part of a contiguous woodland that is adjacent to off-site wetlands.
c) Linkages	Yes	The woodlands on-site provide linkages to other natural heritage features.
d) Water Protection	Yes	Woodlands on-site are proximate to fish habitat (Buell's Creek Reservoir PSW).
e) Diversity	No	Species composition within the on-site woodland is well represented on the landscape and no rare species communities were observed on-site.
Uncommon Characteristics	No	The woodlands on-site do not have a unique species composition, vegetation communities with a ranking of S1, S2 or S3, or a mature size structure.
Economical and Social Functional Values	No	The woodlands on-site do not contain high productivity in terms of economically valuable products, high social value such as recreational use, identified historical cultural or educational values.

**TABLE D.2  
SCREENING RATIONALE FOR HABITATS OF SEASONAL CONCENTRATION AREAS**

<b>Wildlife Habitat</b>	<b>Further Considered in EIS</b>	<b>Rationale</b>
Waterfowl Stopover and Staging Areas	No	No suitable ELC codes on-site to support aquatic or terrestrial waterfowl stopover and staging area habitat.
Shorebird Migratory Stopover Area	No	Site does not contain appropriate ELC code to support shorebird migratory stopover habitat.
Raptor Wintering Area	No	Site lacks suitable combination of upland and lowland habitats.
Bat Hibernacula	No	Cave and crevice habitat is not present on-site or within the study area.
Bat Maternity Colonies	Yes	The deciduous and coniferous forest habitats on-site have potential to provide bat roosting habitat. Snag density surveys were not completed as part of the 2023 field investigations.
Turtle Wintering Area	Yes	The off-site PSW within the study area may provide suitable habitat conditions to support turtle wintering area habitat. No suitable overwintering habitat located on-site.
Reptile Hibernaculum	No	No structures such as large rock piles, bedrock outcrops, and crevices have been identified on-site. Further, no indicator snake species were observed during the 2023 field investigations.
Colonial Bird Nesting Habitat	No	No suitable habitat is present on-site to support colonial nesting habitat.
Migratory Butterfly Stopover Area	No	The site is not located within 5 km of Lake Ontario and therefore does not meet the defining criteria.
Landbird Migratory Stopover Area	No	The site is not located within 5 km of Lake Ontario and therefore does not meet the defining criteria.
Deer Yarding Areas and Winter Congregation Areas	No	Suitable coniferous stands may be present on-site and within the greater study area. However, as outlined in the Significant Wildlife Habitat Criteria Schedules (OMNRF, 2015) winter deer yards and deer management are an MNRF responsibility. Based on review of publicly available data from the OMNRF on Land Information Ontario Geo-hub, no Stratum I deer yards, Stratum II deer yards, or winter congregation areas have been identified on-site or within the broader study area. The closest deer yard to site is a patch of Stratum I deer yard located approximately 15 km north of site, near Atkins Lake, Ontario.



**TABLE D.3  
SCREENING RATIONALE FOR SPECIALIZED WILDLIFE HABITATS**

Specialized Wildlife Habitat	Further Considered in EIS	Rationale
Waterfowl Nesting Area	No	The provincially significant wetland within the greater study area may provide suitable habitat conditions to support waterfowl nesting area. However, no suitable ELC code is present on-site. Further, the PSW is over 50 m from the subject property at its closest point.
Bald Eagle and Osprey Nesting, Foraging and Perching Habitat	No	Suitable habitat may be present within the greater study area. No stick nests observed during the 2023 field investigations.
Woodland Nesting Raptor Habitat	No	Suitable habitat may be present within the greater study area. No stick nests observed during the 2023 field investigations. Further, no interior forest habitat, measured by a 200 m buffer, is present within the study area.
Turtle Nesting Habitat	No	Stockpiled substrate material on-site not considered suitable habitat for turtle nesting. Further, no suitable aquatic habitat component to support turtle presence on-site.
Seeps and Springs	No	Neither seeps nor springs were identified on-site.
Woodland Amphibian Breeding Habitat	Yes	The off-site PSW and associated local wetlands may provide suitable habitat conditions to support woodland amphibian breeding. No suitable breeding habitat identified on-site (vernal pools less than 500m <sup>2</sup> ).
Wetland Amphibian Breeding Habitat	No	The off-site PSW and associated local wetlands are more likely to provide woodland amphibian breeding habitat, given the amount of tree cover in the wetlands and surrounding the wetlands.
Woodland Area-Sensitive Bird Breeding Habitat	No	No indicator species observed during the 2023 field investigations. Further, no interior forest habitat, measured by a 200 m buffer, is present within the study area.

**TABLE D.4  
SCREENING RATIONALE FOR HABITAT FOR SPECIES OF CONSERVATION CONCERN**

General Habitats of Species of Conservation Concern	Further Considered in EIS	Rationale
Marsh Breeding Bird Habitat	No	The provincially significant wetland within the greater study area may provide suitable habitat conditions to support marsh breeding bird habitat. However, suitable habitat conditions are over 80 m from the subject property, likely confined to marsh habitat west of County Road 6.
Open Country Breeding Bird Habitat	No	Constructed greenlands on-site do not provide suitable habitat conditions to support open country breeding bird habitat.
Shrub/Early Successional Breeding Bird Habitat	No	Constructed greenlands on-site do not provide suitable habitat conditions to support shrub/early successional breeding bird habitat.
Terrestrial Crayfish Habitat	No	Terrestrial crayfish are only found within southwestern Ontario (MNR, 2012).
Special Concern and Rare Wildlife Species	Yes	The NHIC indicates the presence of wood thrush, eastern wood pewee, and snapping turtle within 1 km of site. No other species of special concern were observed during the field investigations.

**TABLE D.5  
SCREENING RATIONALE FOR ANIMAL MOVEMENT CORRIDORS**

<b>Animal Movement Corridor</b>	<b>Further Considered in EIS</b>	<b>Rationale</b>
Amphibian Movement Corridor	No	No confirmed wetland amphibian breeding habitat has been identified on-site.
Deer Movement Corridor	No	No winter deer yards have been identified on-site by the OMNRF.



**TABLE D.6  
SCREENING RATIONALE FOR POTENTIAL SPECIES AT RISK ON-SITE OR WITHIN STUDY AREA**

Species	ESA Status	Habitat Use	Probability of Occurrence On-Site or Within Study Area	Rationale
<b>Avian</b>				
Bald Eagle	Special Concern	Nest in mature forests near open water.	Low	Site lacks suitable forest habitat adjacent to open water and foraging area to support Bald Eagle activity
Bank Swallow	Threatened	Colonial nester, burrows in eroding silt, to sand banks, sand pit walls, etc.	Low	Stockpiled substrates not likely to provide nesting conditions. No occurrence records of the species within 1 km of site. Species was not encountered during the field investigation.
Barn Swallow	Special Concern	Nests in barns and other semi-open structures. Forages over open fields and meadows.	Low	Site lacks suitable nesting structures and foraging meadow habitat.
Bobolink	Threatened	Nests in dense tall grass fields and meadows, low tolerance for woody vegetation.	Moderate	Potentially suitable grassland habitat within the study area. The NHIC database indicates presence of species within 1 km of site. Species was not encountered during the field investigation.
Canada Warbler	Special Concern	Prefers wet forests with dense shrub layers	Low	Suitable wet forest habitat may be present within the greater study area. No occurrence records for the species within 1 km of site. Species was not encountered during the field investigation.
Cerulean Warbler	Threatened	Prefers mature deciduous forest habitat.	Low	Site lacks suitable mature deciduous forest habitat to support species presence.
Chimney Swift	Threatened	Nests in traditional-style open brick chimneys.	Low	No suitable anthropogenic structures to support nesting present within the study area.
Common Nighthawk	Special Concern	Nests in a variety of open sites: beaches, fields and grave rooftops.	Low	Constructed greenlands may provide suitable habitat conditions. No occurrence records for species within 1 km of site. Species was not encountered during the field investigation.
Eastern Meadowlark	Threatened	Nests and forages in dense tall grass fields and meadows, higher tolerance to woody vegetation.	Low	Potentially suitable grassland habitat within the study area. No occurrence records for the species within 1 km of site. Species was not encountered during the field investigation.
Eastern Whip-poor-will	Threatened	Nests on the ground in open deciduous or mixed woodlands with little underbrush, and bedrock outcrops.	Low	No suitable deciduous woodlands with little underbrush and bedrock outcrops present on-site.
Eastern Wood-Pewee	Special Concern	Woodland species, often found near clearings and edge habitat.	Moderate	Potentially suitable woodland habitat on-site. The NHIC database indicates presence of species within 1 km of site. Species was not encountered during the field investigation.
Evening Grosbeak	Special Concern	Nests in trees or large shrubs, preference to large coniferous forests, will use deciduous. Overwinters in Ottawa.	Low	Potentially suitable coniferous forest habitat within study area. No occurrence records for species within 1 km of site. Species was not encountered during the field investigation.
Golden Eagle	Endangered	Nests on remote, bedrock cliffs, overlooking large burns, lakes or tundra's	Low	No suitable cliff habitat adjacent to open field habitat present within the study area.
Golden-winged Warbler	Special Concern	Ground nesting, edge species. Breeds in successional scrub habitats surrounded by forests.	Low	No suitable scrub habitat within study area to support species presence.
Grasshopper Sparrow	Special Concern	Ground-nesting grassland species. Prefers fields with low sparse vegetation on sand, alvars or poor soils.	Low	Site lacks suitable combination of field habitat and sandy soils.
Henslow's Sparrow	Endangered	Prefers open, moist, tallgrass fields.	Low	No suitable tallgrass field habitat within the study area to support species presence.
Least Bittern	Threatened	Prefers marshes, shrub swamps, usually near cattails	Low	Potentially suitable marsh habitat in the study area. The NHIC database indicates the presence of species within 1 km of site. Species was not encountered during the field investigation.
Lesser Yellowlegs	Threatened	Ottawa Migrant. Breeding is limited to Alaska and northern Canada. During winter and migration uses coastal salt marshes, estuaries and ponds, lakes, freshwater wetlands, anthropogenic wetlands.	Low	Potentially suitable marsh habitat in the study area. No occurrence records for species within 1 km of site. Species was not encountered during the field investigation.
Loggerhead Shrike	Endangered	Prefers grazed pastures with short grass and scattered shrubs, especially hawthorn.	Low	Site lacks suitable grazed pasture habitat conditions. Preferred hawthorn vegetation not observed during the field investigations.
Olive-sided Flycatcher	Special Concern	Forest edge species, forages in open areas from high vantage points in trees.	Low	Suitable forest edge habitat present on-site. No occurrence records for species within 1 km of site. Species not encountered during the field investigations.
Peregrine Falcon	Special Concern	Nests on cliffs near water and on more anthropogenic structures such as tall buildings, bridges, and smokestacks.	Low	No suitable cliff habitat adjacent to open field habitat present within the study area.
Red-headed Woodpecker	Endangered	Prefers open deciduous woodlands, particularly those dominated by oak and beech.	Low	Potentially suitable woodland habitat on-site. No occurrence records for species within 1 km of site. Species was not encountered during the field investigation.
Rusty Blackbird	Special Concern	Wet wooded or shrubby areas (nests at edges of Boreal wetlands)	Low	Potentially suitable marsh habitat in the study area. No occurrence records for species within 1 km of site. Species was not encountered during the field investigation.

**TABLE D.6  
SCREENING RATIONALE FOR POTENTIAL SPECIES AT RISK ON-SITE OR WITHIN STUDY AREA**

Short-eared Owl	Threatened	Ground nester, prefers open habitats, fields and marshes.	Low	Potentially suitable habitat within study area. No occurrence records for species within 1 km of site. Species was not encountered during the field investigation.
Wood Thrush	Special Concern	Prefers deciduous or mixed woodlands.	Moderate	Potentially suitable woodland habitat on-site. The NHIC database indicates presence of species within 1 km of site. Species was not encountered during the field investigation.
<b>Mammalian</b>				
Eastern small-footed Myotis	Endangered	Roosts in rock crevices, barns and sheds. Overwinters in abandoned mines. Summer habitats are poorly understood in Ontario, elsewhere prefers to roost in open, sunny rocky habitat and occasionally in buildings (Humphrey, 2017).	Moderate	Potentially suitable anthropogenic structures adjacent to site. Available habitat on-site does not meet bat maternity colony requirements however the site and surrounding area may provide foraging and non-maternal roost habitat.
Little Brown Myotis	Endangered	Maternal colonies known to use buildings, may also roost in trees during summer. Affinity towards anthropogenic structures for summer roosting habitat and exhibit high site fidelity (Environment Canada, 2015).	Moderate	Potentially suitable anthropogenic structures adjacent to site. Available habitat on-site does not meet bat maternity colony requirements however the site and surrounding area may provide foraging and non-maternal roost habitat.
Northern myotis (Northern Long-eared Bat)	Endangered	Occurs throughout eastern North America in associated with Boreal forests. Roosts mainly in trees, occasionally anthropogenic structures during summer (Environment Canada, 2015). Overwinters in caves and abandoned mines.	Low	Species affinity is for Boreal forests and rarely roosts in anthropogenic structures.
Tri-colored Bat	Endangered	Roosts in trees, rock crevices and occasionally buildings during summer. Overwinters in caves and mines.	Moderate	Potentially suitable anthropogenic structures adjacent to site. Available habitat on-site does not meet bat maternity colony requirements however the site and surrounding area may provide foraging and non-maternal roost habitat.
<b>Reptilian</b>				
Blanding's Turtle	Threatened	Inhabits quiet lakes, streams and wetlands with abundant emergent vegetation. Frequently occurs in adjacent upland forests.	Moderate	Potentially suitable aquatic habitat within the study area to support species presence. The NHIC database indicates the presence of the species within 1 km of site. Species not encountered during the field investigation.
Eastern Musk Turtle	Special Concern	Wetlands. Highly aquatic habitats.	Low	Potentially suitable aquatic habitat within the study area to support species presence. No occurrence records for species within 1 km of site. Species not encountered during the field investigation.
Eastern Ribbonsnake	Special Concern	Marshy edges of wetlands and watercourses.	Low	Potentially suitable riparian habitat within the study area to support species presence. No occurrence records for species within 1 km of site. Species not encountered during the field investigation.
Northern Map Turtle	Special Concern	Highly aquatic species, found only in lakes and large rivers.	Low	No suitable lake or watercourse habitat within study area to support species presence.
Snapping Turtle	Special Concern	Highly aquatic species, found in a wide variety of wetlands, water bodies and watercourses.	Moderate	Potentially suitable aquatic habitat within the study area to support species presence. The NHIC database indicates the presence of the species within 1 km of site. Species not encountered during the field investigation.
Spotted Turtle	Endangered	Secretive wetland species.	Low	Potentially suitable aquatic habitat within the study area to support species presence. No occurrence records for species within 1 km of site. Species not encountered during the field investigation.
Wood Turtle	Endangered	Primarily terrestrial forest species. Associated with clear, gravelly streams.	Low	No suitable watercourse habitat within study area to support species presence.
<b>Plants</b>				
American Ginseng	Endangered	Rich, moist, relatively mature deciduous forests.	Low	No suitable habitat to support American ginseng on-site or within study area.
Black Ash	Endangered	Predominantly a wetland species, found in swamps, floodplains and fens.	High	Suitable wet forest habitat on-site and within study area. No occurrence records for species within 1 km of site. Species was observed growing on-site and within study area.
Butternut	Endangered	Inhabits a wide range of habitats including upland and lowland deciduous and mixed forests.	Low	Suitable mixed forest habitats within study area to support species presence. The NHIC database indicates presence of species within 1 km of site. Species was not encountered during the field investigation.
<b>Lichens</b>				
Pale-bellied Frost Lichen	Endangered	Grows on the bark of hardwood trees such as white ash, black walnut, American elm and ironwood. Can also be found growing on fence posts and boulders.	Low	Species believed to be extirpated from the Ottawa area.
<b>Fish</b>				

**TABLE D.6  
SCREENING RATIONALE FOR POTENTIAL SPECIES AT RISK ON-SITE OR WITHIN STUDY AREA**

American Eel	Endangered	Primarily nocturnal, hiding in soft substrate or submerged vegetation during the day.	Low	No fish habitat on-site or within the study area.
Bridle Shiner	Special Concern	Prefers clear water with abundant vegetation over silty or sandy vegetation	Low	No fish habitat on-site or within the study area.
Channel Darter	Special Concern	Prefers clear water with abundant vegetation over silty or sandy vegetation	Low	No fish habitat on-site or within the study area.
Lake Sturgeon	Endangered	Large lakes and rivers. Forages in cool water, 4-9m deep over soft substrates. Spawns in shallower, fast-flowing areas over rocks or gravel.	Low	No fish habitat on-site or within the study area.
Northern Brook Lamprey	Special Concern	Prefers shallow areas with warm water. Larvae burrows in soft substrate for up to 7 years.	Low	No fish habitat on-site or within the study area.
River Redhorse	Special Concern	Prefers fast-flowing, clear rivers over rocky substrate	Low	No fish habitat on-site or within the study area.
Silver Lamprey	Special Concern	Larvae live 4-7 years in burrows, preference to soft substrate.	Low	No fish habitat on-site or within the study area.
<b>Insects</b>				
Bogbean Buckmoth	Endangered	Preferred food plant is bog bean, present in a variety of wetlands including bogs, swamps and fens.	Low	Preferred wetland habitat is not present on-site.
Gypsy Cuckoo Bumble Bee	Endangered	Inhabits a wide range of habitats: open meadows, agricultural and urban areas, boreal forests and woodlands.	Low	Currently the only known population is in Pinery Provincial Park.
Monarch Butterfly	Special Concern	Caterpillars require milkweed plants confined to meadow and open areas. Adult butterflies use more diverse habitat with a variety of wildflowers	Moderate	Suitable foraging habitat present on-site.
Mottled Duskywing	Endangered	Larval food plant (New Jersey Tea) found in sandy areas and alvars.	Low	Sandy areas and alvars not present in the study area.
Nine-spotted Lady Beetle	Endangered	Habitat generalist	Low	No recent occurrence reports in the area, thought to be locally extirpated.
Rusty-patched Bumble Bee	Endangered	Habitat generalist	Low	Currently the only known population is in Pinery Provincial Park.
Transverse Lady Beetle	Endangered	Habitat generalist	Low	No new records of Traverse Lady Beetle in Ontario, species thought to be absent in former habitats.
West Virginia White Butterfly	Special Concern	Requires mature moist deciduous woods with larval host plant toothwort.	Low	Necessary vegetation and toothwort plant not present on-site or within study area.
Yellow-banded Bumble Bee	Special Concern	Habitat generalist; mixed woodlands, variety of open habitat	Moderate	Suitable foraging habitat present on-site. Species not observed during the field investigation.



## **APPENDIX E**

MNRF General Habitat Descriptions

- i. Bobolink
- ii. Blanding's Turtle

# General Habitat Description for the Bobolink (*Dolichonyx oryzivorus*)

A general habitat description is a technical document that provides greater clarity on the area of habitat protected for a species based on the general habitat definition found in the Endangered Species Act, 2007. General habitat protection does not include an area where the species formerly occurred or has the potential to be reintroduced unless existing members of the species depend on that area to carry out their life processes. A general habitat description also indicates how the species' habitat has been categorized, as per the policy "Categorizing and Protecting Habitat Under the Endangered Species Act", and is based on the best scientific information available.

## HABITAT CATEGORIZATION

- |   |   |
|---|---|
| 1 | Nest and the area within 10 m of the nest   |
| 2 | The area between 10 m and 60 m of the nest or centre of approximated defended territory                                 |
| 3 | The area of continuous suitable habitat between 60 m and 300 m of the nest or approximated centre of defended territory |

### Category 1

Bobolink nests and the area immediately around the nest (i.e., 10 m) are highly sensitive features supporting the species' reproduction life cycle and have the lowest tolerance to alteration. These are areas the species depends on for life processes including egg laying, incubation, feeding, resting and rearing of young. Nests are built on the ground beneath a cover of tall grasses and forbs and are used daily during the breeding season. Both males and females exhibit high breeding site fidelity (Gavin and Bollinger 1985, Wootton et al. 1986). The area immediately surrounding the nest (i.e., 10 m) is important to maintain the microclimate around the nest and provide cover from predators.

It is important to note that Bobolink nests are rarely identified due to their cryptic nature. It is inadvisable to search for Bobolink nests as this may inadvertently jeopardize the nesting site and/or offspring. However, if a nest is identified, it and the area within 10 m shall be categorized as Category 1.



## Category 2

The area between 10 m and 60 m of the nest or centre of approximated defended territory is included in Category 2 and is considered to have a moderate level of tolerance to alteration. This area includes the species' defended territory and is depended upon for courtship, mating, rearing young, feeding, resting and bathing. Throughout the species' breeding range, defended territories have been reported to range in size from 0.33 – 2 ha (Gavin and Bollinger 1985, Wootton et al. 1986, Martin and Gavin 1995, Fletcher and Koford 2003, Bollinger and Gavin 2004, Moskwik and O'Connell 2006, COSEWIC 2010, Weidman and Litvaitis 2011) and are used daily throughout the breeding season. Both males and females show site fidelity to previously used breeding sites. Territory size is generally smaller in high quality habitat and larger in lower quality habitat (Wittenberger 1980, Martin and Gavin 1995, Nocera 2009). On average, territories are 1.2 ha (or approximately the area within 60 m of a nest) in size although they may vary depending on the local habitat conditions.

## Category 3

The area of continuous suitable habitat between 60 m and 300 m of a nest or centre of approximated defended territory is included in Category 3 and will be considered to have a high level of tolerance to alteration. These are areas the species depends on for feeding, rearing of young, resting, dispersal and concealment from predators. It also helps maintain the function of both Category 1 and 2 habitat. Bobolinks depend on suitable grassland habitat which includes, but is not limited to, hayfields, pastures, old or abandoned fields, and remnant prairies, savannahs and alvar grasslands (McCracken et al. 2013).

Many studies have demonstrated that Bobolink is area sensitive, requiring grassy patches much larger than their territory size (Herkert 1991, 1994, O'Leary and Nyberg 2000, Johnson 2001, Johnson and Igl 2001, Renfrew and Ribic 2008). Minimum area requirements to support breeding habitat for the species have been reported to range from 5 ha (Nocera, pers. comm. 2012), to 10 and 30 ha (Bollinger and Gavin 1992, Herkert 1991) to 50 ha (Herkert 1994, Helzer and Jelinski 1999). These larger habitat sizes are required to reduce edge effects such as predation and brood parasitism (Johnson and Temple 1990, Renfrew and Ribic 2003, Bollinger and Gavin 2004) and maintain good quality interior grassland habitat for breeding. Encroachment or loss of habitat edges reduces the amount of suitable interior and causes loss of habitat suitability for Bobolink. Patches of 10 ha or smaller contain little, if any, interior habitat (defined as more than 100 m from an edge – Helzer and Jelinski 1999), especially if patches are irregularly shaped. In order to maintain breeding habitat function, the entire continuous grassy patch up to 300 m from the nest or approximated centre of the defended territory is important habitat for Bobolink.

## Activities in Bobolink habitat

Activities in general habitat can continue as long as the *function of these areas for the species is maintained and individuals of the species are not killed, harmed, or harassed.*

*Generally compatible:*

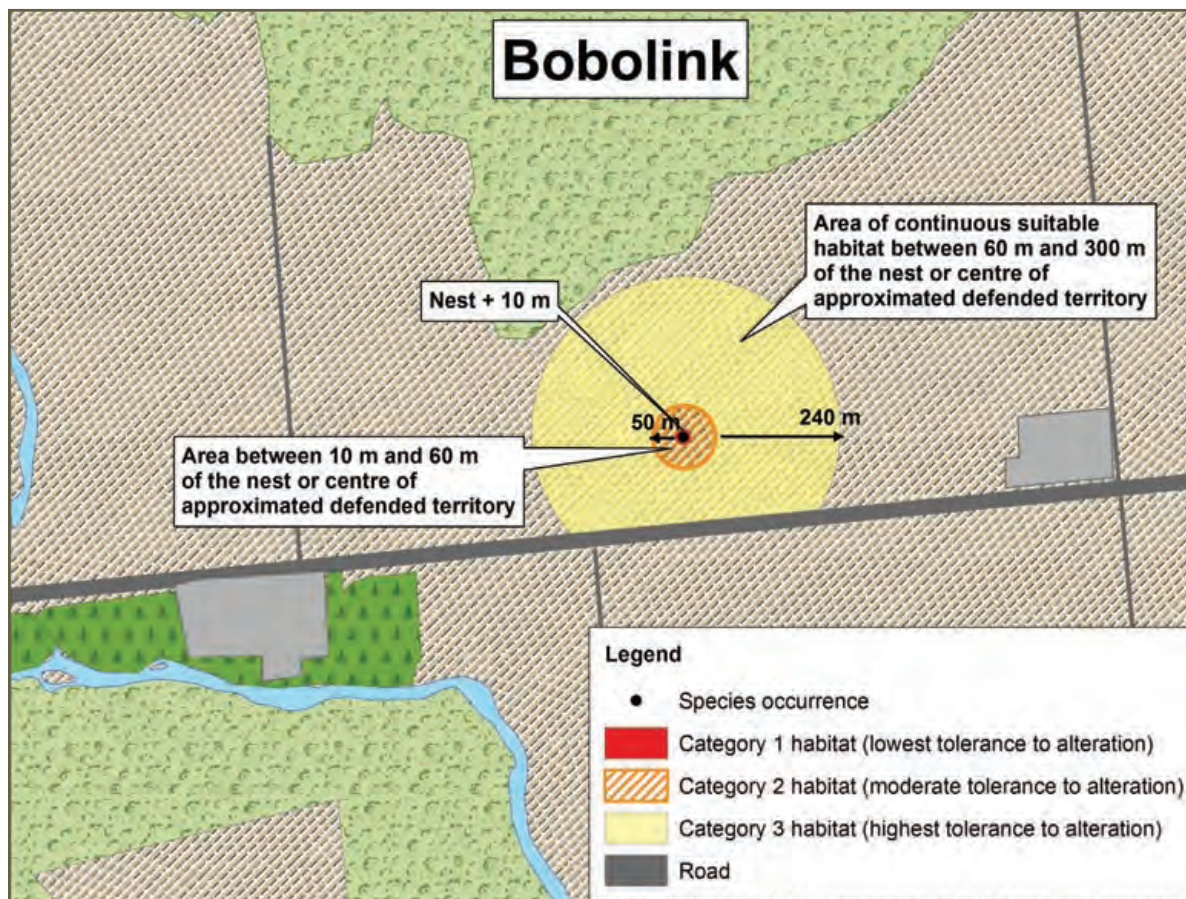
- Continuation of existing agricultural practices and planned management activities such as annual harvest, mowing, and rotational cattle grazing.
- Hiking and non-motorized vehicle use on existing recreational trails.
- General yard work such as lawn care and gardening.

Generally not compatible\*:

- Development activities that result in significant fragmentation or removal of large tracts of suitable grasslands.
- Indiscriminate application of pesticides within habitat.

\* If you are considering an activity that may not be compatible with general habitat, please contact your local MNR office for more information.

### Sample application of the general habitat protection for Bobolink



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# General Habitat Description for the Blanding's Turtle (*Emydoidea blandingii*)

A general habitat description is a technical document that provides greater clarity on the area of habitat protected for a species based on the general habitat definition found in the Endangered Species Act, 2007. General habitat protection does not include an area where the species formerly occurred or has the potential to be reintroduced unless existing members of the species depend on that area to carry out their life processes. A general habitat description also indicates how the species' habitat has been categorized, as per the policy "Categorizing and Protecting Habitat Under the Endangered Species Act", and is based on the best scientific information available.

## HABITAT CATEGORIZATION

- |   |   |
|---|---|
| 1 | Nest and the area within 30 m or Overwintering sites and the area within 30 m   |
| 2 | The wetland complex (i.e. all suitable wetlands or waterbodies within 500 m of each other) that extends up to 2 km from an occurrence, and the area within 30 m around those suitable wetlands or waterbodies |
| 3 | Area between 30 m and 250 m around suitable wetlands/waterbodies identified in Category 2, within 2 km of an occurrence   |

### Category 1

Nest sites and overwintering sites are essential features and along with the 30 m area surrounding them are considered to have the lowest tolerance to alteration. Blanding's Turtles depend on these areas for sensitive life processes including egg-laying, incubation, hatching of young, and hibernation. A 30 m radius (average tree height) buffer around nesting and overwintering sites is important to maintain the microclimate conditions (e.g., thermal, vegetative and lighting features). These areas are habitually used and may support concentrations of individuals.

#### *Nesting Sites*

Blanding's Turtle nests are created in open habitats with low vegetation cover and high sun exposure such as in forest clearings, meadows, shorelines, beaches, rock outcrops, cornfields, gravel roads, road shoulders, ploughed fields, gardens, powerline rights-of-ways, yards and abandoned railroad beds ( Linck et al. 1989, Ross and Anderson 1990, Kiviat 1997, Standing et al. 1999, Joyal et al. 2001, Congdon et al. 2008, Downing et al. 2010, Refsnider and Linck 2012). Females often show high fidelity to the same general nesting areas (Congdon et al. 1983, McNeil 2002, Congdon et al. 2011).

### *Overwintering Sites*

Overwintering sites are typically occupied for at least six months during the overwintering period in Ontario (Edge *et al.* 2009, Edge *et al.* 2010, Davy 2011 unpublished data, Paterson unpublished data 2013, NHIC 2013). Blanding's Turtles display overwintering site fidelity, using some sites year after year (Power 1989, McNeil 2002, Caverhill 2006 in Newton and Herman 2009, Edge *et al.* 2009). Many individuals may aggregate at one site while overwintering (Anderson 1990, St-Hilaire 2003 in COSEWIC 2005, Ross and Congdon *et al.* 2008, Edge *et al.* 2009).

Suitable Blanding's Turtle overwintering habitat typically includes permanent bogs, fens, marshes, ponds, channels or other habitats with free (unfrozen) shallow water (Joyal *et al.* 2001, Edge 2010, Seburn 2010). Blanding's Turtles studied in Algonquin Provincial park overwintered in wetlands with free water depths of 7 cm - 50 cm (Edge *et al.* 2009). This species may also hibernate within graminoid shallow marsh areas of larger marsh complexes by burying into substrates in areas of pooled water (Gillingwater unpublished data 2013). Blanding's Turtle's may also overwinter in seasonal pools or small excavated areas with standing water (Joyal *et al.* 2001, Rouse unpublished data 2012).

### **Category 2**

The wetland complex that extends up to 2 km from an occurrence and 30 m around these suitable wetlands/waterbodies (Category 2) will be considered to have a moderate level of tolerance to alteration before their function is compromised. For the purpose of general habitat protection for Blanding's Turtle, a wetland complex is defined as all wetlands that are within 500 m of each other. This definition is based on the biology of the species and its documents movement patterns between adjacent suitable wetlands/waterbodies. In cases where an occurrence is not within suitable aquatic habitat, the nearest wetland should be considered the starting point for delineating the wetland complex.

Blanding's Turtles depend on these wetlands and the surrounding habitat throughout their home range for life processes including feeding, mating, thermoregulation, movement, and protection from predators.

Blanding's Turtle home range sizes and lengths in Ontario vary significantly between individuals within the same population and between different populations. In Algonquin Provincial Park, the average range length of radio-tracked Blanding's Turtles was 1.8 km (1.2 standard deviation), with a maximum of 4.3 km (Edge 2013 unpublished data). Recent Ontario studies documented a 90th percentile home range length of radio-tracked Blanding's Turtles in Parry Sound District and Bancroft District of 2.0 and 2.3 km, respectively (Rouse unpublished data 2013, Cameron unpublished data 2013). Average range length of a population on Grenadier Island, Ontario, was 813 m, with a maximum range length just over 2 km. In a Minnesota population, average range length was just over 1.6 km, with a maximum range length just over 5 km (Pappas *et al.* 2000).

Blanding's Turtles regularly move between wetlands or other aquatic areas in order to access mates, overwintering sites, nesting sites, other seasonally required resources and thermoregulation sites (Congdon *et al.* 2008, Edge *et al.* 2010). In a study from Algonquin Provincial Park, Blanding's Turtles made an average of four movements between wetlands each year with an average movement distance of 231 m for males and 497 m for females (Edge *et al.* 2010). Average interwetland movement distances of a population in Maine was  $680 \pm 550$  m (Joyal *et al.* 2001). Rouse and Cameron (unpublished data 2013) found that Blanding's Turtles primarily moved through wetlands and other water and were rarely located more than 200 m from water. Since interwetland movements tend to average about 500 m, wetlands that are separated by more than 500 m from other suitable wetlands have a lower likelihood of being occupied.

A 30 m radius (average tree height) buffer around suitable wetlands helps to maintain microclimate conditions. Buffers of 30 m are widely recognized as providing a range of functional benefits to aquatic features and wetlands such as maintaining water quality by filtering sediment and nutrients, input of woody debris, and cooling water temperatures by shading and infiltrating surface runoff (OMNR 2010). Blanding's Turtles have also been shown to generally bask within 30 m of wetlands (Joyal *et al.* 2001).

Suitable habitat for Blanding's Turtles during the active season includes a variety of wetlands such as marsh, swamps, ponds, fens, bogs, slow-flowing streams, shallow bays of lakes or rivers, as well as graminoid shallow marsh and slough forest habitats that are adjacent to larger marsh complexes (Joyal *et al.* 2001, Gillingwater 2001, Gillingwater and Piraino 2004, 2007, Congdon *et al.* 2008, Edge *et al.* 2010; Seburn 2010). Suitable wetlands used during the active season are typically eutrophic (mineral or organic nutrient-rich), shallow with a soft substrate composed of decomposing materials, and often have emergent vegetation, such as water lilies and cattails (COSEWIC 2005, Congdon *et al.* 2008).

### **Category 3**

The area between 30 m and 250 m around suitable Category 2 wetlands/waterbodies will be considered to have the highest tolerance to alteration. Blanding's Turtles depend on these areas as movement corridors between wetlands, which are essential for carrying out life processes associated with Category 1 and 2 habitats.

Blanding's Turtle nests are typically close to permanent wetlands and reported average distances between nests and the nearest wetland range from 99.5 to 242 m, with maximum distances of 256 m to just over 400 m (Joyal *et al.* 2001, Beaudry *et al.* 2010, Congdon *et al.* 2011, Paterson *et al.* 2012, Refsnider and Linck 2012). Consequently, the area within 250 m of suitable aquatic habitat provides critical movement corridors through which hatchling Blanding's Turtles access wetlands after hatching. This habitat is also used by some hatchlings as overwintering habitat in their first year (Paterson *et al.* 2012).

Although Blanding's Turtles nest close to water, they often travel considerable distances from their wetland of origin during nesting migrations, with movements of 6 km being documented in some Ontario populations (Edge *et al.* 2010). Although wetlands and ponds are used as movement corridors when available, females make extensive movements through upland habitat to access nesting sites (Congdon *et al.* 2008). As mentioned in the previous section (see Category 2), Blanding's Turtles also make regular overland movements between wetlands throughout the active season in order to access Category 1 and 2 habitats within their home range. Category 3 habitat provides essential movement corridors of up to 500 m between wetlands, which will encompass the areas that are most likely to be used for overland movement.

## Activities in Blanding's Turtle habitat

Activities in general habitat can continue as long as the *function of these areas for the species is maintained and individuals of the species are not killed, harmed, or harassed.*

### Generally compatible:

- Recreational use of the water such as swimming, boating, and fishing.
- Small-scale alterations to land cover that do not impede overland movements or impair nesting sites.

### Generally not compatible\*:

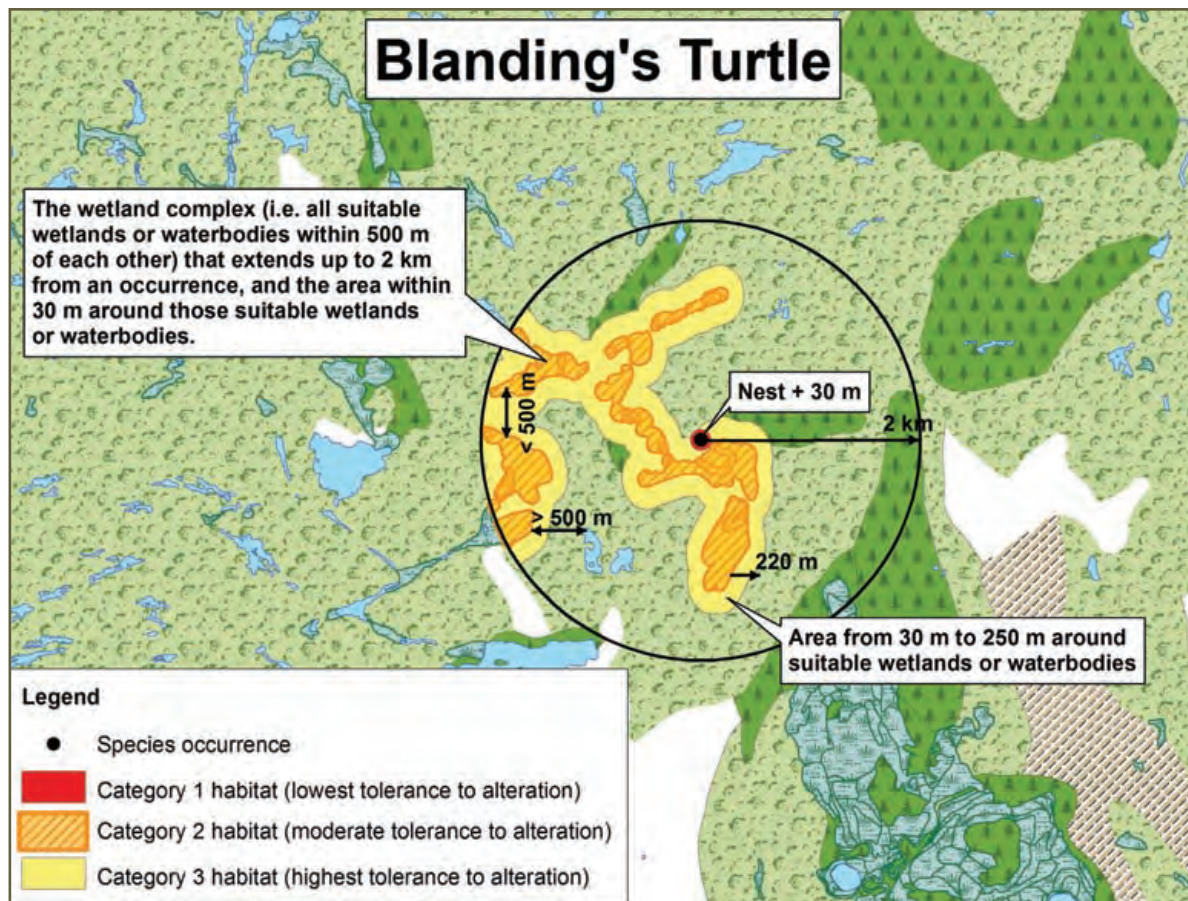
- Significant draining, infilling, dredging, or other significant alteration of wetlands or other suitable waterbodies.
- Significant alteration of shorelines, especially hardening (e.g. the use of gabion baskets, rip-rap, and rock armour).

\* If you are considering an activity that may not be compatible with general habitat, please contact your local MNR office for more information.

## Key terms:

- **Thermoregulation:** Some animals, such as turtles, use thermoregulation to alter their internal body temperature through behavioural patterns, such as basking in the sun to increase body temperature or seeking out cool areas to lower body temperature.

Sample application of the general habitat protection for Blanding's Turtle



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experience • knowledge • integrity



civil	civil
geotechnical	géotechnique
environmental	environnement
structural	structures
field services	surveillance de chantier
materials testing	service de laboratoire des matériaux

expérience • connaissance • intégrité

