

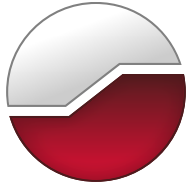


# GEMTEC

[www.gemtec.ca](http://www.gemtec.ca)

**Environmental Impact Statement  
Proposed Subdivision Application Application  
Part Lot 21, 22 and 23, Concession 2 (Old Survey)  
Municipality of Rockland  
United Counties of Prescott-Russell, Ontario**

GEMTEC Project: 100162.027



# GEMTEC

[www.gemtec.ca](http://www.gemtec.ca)

Submitted to:

Lascelles Engineering and Associates Ltd.  
1010 Spence Avenue - Suite 14  
Hawkesbury, Ontario  
K6A 3H9

**Environmental Impact Statement  
Proposed Subdivision Application  
Part Lot 21, 22 and 23, Concession 2 (Old Survey)  
Municipality of Rockland  
United Counties of Prescott-Russell, Ontario**

July 25, 2025  
GEMTEC Project: 100162.027

## EXECUTIVE SUMMARY

GEMTEC Consulting Engineers and Scientists Limited (GEMTEC) was retained by Lascelles Engineering and Associates Ltd. (the Proponent) to complete an Environmental Impact Statement (EIS) for the property located on Caron Street, southeast of the intersection of David Street and Caron Street, in the City of Clarence-Rockland, United Counties of Prescott and Russell, Ontario. This EIS has been completed in support of a proposed subdivision application to create a subdivision development comprised of low, medium and high density residential blocks, parkland, commercial zones, community zones, and an on-site stormwater management facility. This report was completed in accordance with all federal, provincial and municipal policies and guidelines, as applicable.

In support of this EIS, a desktop review and multi-season field investigations were completed to determine the presence or absence of natural heritage features and species at risk (SAR) on-site. The focus of the site investigations were 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: watercourses, fish and fish habitat, environmental protection area (EPA), locally significant and unevaluated wetlands, *candidate* significant wildlife habitat (SWH) for bat maternity colonies and turtle wintering areas, *confirmed* SWH for woodland amphibian breeding and habitat of special concern and rare wildlife species. Black ash was the only confirmed SAR identified within the subject property during field investigations. The following SAR and their habitat were identified as having a potential to occur on-site: eastern red bat, eastern small-foot myotis, hoary bat, little brown myotis, silver-haired bat, and tri-colored bat.

Impacts to the identified natural heritage features are primarily associated with the loss of wetland and aquatic habitat on-site. The creation and implementation of compensatory habitat to offset the impacts to the confirmed SWH, fish habitat, and local wetlands will ensure that anticipated losses are compensated post-development. The EIS report provides detailed mitigation recommendations for potential impacts to migratory birds, SAR bats, and general wildlife through the implementation of, and adherence to, prescribed timing windows for vegetation removal and site works. Additional mitigation measures and compensation requirements are provided for specific natural heritage features

To provide protection to candidate and confirmed SWH and potential SAR and their habitat on-site, reptile and amphibian exclusion fencing should be installed around all future construction areas prior to any development or site alteration to prevent the immigration of amphibians and other wildlife into the construction area. Should any SAR be discovered throughout the course of any development on-site, 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 applicable legislation, all best management practices and adherence to vegetation clearing 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 subdivision development complies with the natural heritage policies of the Provincial Planning Statement, City of Clarence-Rockland Official Plan (2021), and the United Counties of Prescott and Russell Official Plan (2023). 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 and compensation measures in Section 7 are implemented and best management practices followed.

## TABLE OF CONTENTS

1.0	INTRODUCTION .....	1
1.1	Purpose .....	1
1.2	Objective.....	1
1.3	Physical Setting.....	2
1.4	Land Use Context.....	2
2.0	METHODOLOGY .....	3
2.1	Desktop Review .....	3
2.2	Field Investigations.....	3
2.2.1	Ecological Land Classification .....	4
2.2.2	Breeding Bird Surveys .....	4
2.2.3	Amphibian Breeding Surveys .....	5
2.2.4	Bat Acoustic Survey.....	5
2.2.5	Nocturnal Whip-poor-will Surveys.....	5
2.2.6	Fish Community Sampling .....	5
2.3	Data Analysis .....	6
3.0	EXISTING ENVIRONMENT .....	7
3.1	Ecoregion .....	7
3.2	Landforms, Soils and Bedrock Geology .....	7
3.3	Surface Water, Groundwater, and Fish Habitat .....	7
3.4	Vegetation Communities.....	8
3.5	Wildlife.....	10
4.0	NATURAL HERITAGE FEATURES.....	11
4.1	Provincially Significant and Local Wetlands .....	11
4.2	Significant Woodlands .....	11
4.3	Significant Valleylands.....	12
4.4	Significant Areas of Natural and Scientific Interest .....	12
4.5	Significant Wildlife Habitat.....	12
4.5.1	Habitats of Seasonal Concentrations of Animals .....	13
4.5.1.1	Bat Maternity Colonies .....	13
4.5.1.2	Candidate Turtle Wintering Area.....	13
4.5.2	Rare Vegetation Communities.....	14
4.5.3	Specialized Habitats for Wildlife .....	14
4.5.3.1	Confirmed Woodland Amphibian Breeding Habitat .....	14
4.5.4	Habitats of Species of Conservation Concern .....	16
4.5.4.1	Special Concern and Rare Wildlife Species SWH.....	16
4.5.5	Animal Movement Corridors .....	17
4.6	Fish Habitat.....	17

4.7	Species at Risk .....	19
4.8	Environmental Protection Area (EPA).....	19
5.0	PROPOSED PROJECT .....	20
6.0	IMPACT ASSESSMENT .....	21
6.1	Local Wetlands.....	21
6.2	Significant Wildlife Habitat.....	22
6.2.1	Bat Maternity Colonies .....	22
6.2.2	Turtle Wintering Areas .....	22
6.2.3	Woodland Amphibian Breeding Habitat.....	22
6.2.4	Habitats of Special Concern and Rare Wildlife Species .....	23
6.3	Fish Habitat.....	24
6.4	Species at Risk .....	25
6.4.1	Eastern Red Bat .....	26
6.4.2	Eastern Small-footed Myotis.....	26
6.4.3	Hoary Bat.....	26
6.4.4	Little Brown Myotis.....	27
6.4.5	Silver-haired Bat.....	27
6.4.6	Tri-colored Bat.....	28
6.4.7	Black Ash.....	28
6.5	Environmental Protection Area.....	29
6.6	Cumulative Impacts .....	29
7.0	RECOMMENDED AVOIDANCE AND MITIGATION MEASURES .....	30
7.1	Local Wetlands.....	30
7.1.1	Wetland Compensation Strategy .....	32
7.2	Significant Wildlife Habitat.....	33
7.2.1	<i>Confirmed</i> Woodland Amphibian Breeding Habitat .....	33
7.2.2	Habitats of Special Concern and Rare Wildlife Species .....	34
7.2.2.1	Eastern Wood-Pewee, Eastern Whip-poor-will, and Wood Thrush .....	34
7.2.2.2	Snapping Turtle .....	34
7.3	Fish Habitat.....	34
7.4	Species at Risk .....	35
7.4.1	SAR Bats .....	35
7.4.2	Black Ash.....	35
7.5	Environmental Protection Area (EPA).....	35
7.6	Wildlife.....	36
7.7	Best Practice Measures for Mitigation of Cumulative Impacts .....	36
8.0	CONCLUSIONS .....	37
9.0	LIMITATION OF LIABILITY .....	38

10.0 REFERENCES..... 39

**LIST OF TABLES**

Table 2.1 Summary of Field Investigations ..... 4  
Table 3.1 Vegetation Communities On-site..... 8  
Table 4.1 Summary of Amphibian Breeding Call Surveys ..... 15  
Table 4.2 Summary of Fish Community Sampling Survey ..... 18

**LIST OF APPENDICES**

Appendix A Report Figures  
Appendix B Site Photographs  
Appendix C Report Summary Tables

## 1.0 INTRODUCTION

GEMTEC Consulting Engineers and Scientists Limited (GEMTEC) was retained by Lascelles Engineering and Associates Ltd. to carry out an Environmental Impact Statement (EIS) for the property located on Part of Lot 21, 22, and 23, Concession 2 (Old Survey), City of Clarence-Rockland, Municipality of Rockland, United Counties of Prescott-Russell, Ontario (hereafter referred to as “the subject property”). The general location of the subject property is illustrated on Figure A.1 in Appendix A.

### 1.1 Purpose

The proponent is seeking a proposed draft plan of subdivision on an approximately 113 hectare (ha) vacant property. Based on Section 5 – *Natural Heritage Policies* of the United Counties of Prescott-Russell Official Plan (2023), and Section 4 – *General Development Policies* of the Official Plan of the Urban Area of the City of Clarence-Rockland (2021), an EIS is required showing that the proposed development will not negatively impact any potential natural heritage features, that 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 property and the extents of the study area are illustrated on Figure A.2 in Appendix A.

### 1.2 Objective

The 2024 Provincial Planning Statement (MMAH, 2024) 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 2024 Provincial Planning 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 to identify and evaluate the significance of any natural heritage features, as defined in the Provincial Planning Statement (MMAH, 2024), on the subject property and within the broader study area and to assess the potential impacts from the proposed development 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 federal, provincial, and municipal policies and guidelines:

- Provincial Planning Statement (MMAH, 2024);
- Endangered Species Act (Ontario, 2007);
- Fisheries Act (Canada, 1984);

- Conservation Authorities Act (Ontario, 1990);
- Migratory Birds Convention Act (Government of Canada, 1994);
- Invasive Species Act (Ontario, 2015);
- Natural Heritage Reference Manual (OMNR, 2010);
- Official Plan of the Urban Area of the City of Clarence-Rockland (2021); and
- United Counties of Prescott-Russell Official Plan (2023).

### **1.3 Physical Setting**

The subject property is bound to the south by Baseline Road and to the north by David Street. The site is bound to west by Caron Street as well as residential homes fronting to Caron Street. The subject property is predominantly comprised of agricultural fields and culturally influenced communities; however, there are wooded and wetland areas on-site, as well as watercourses. The EIS scope will include the subject property and the study area. The extent of the study area is illustrated on Figure A.2 in Appendix A.

### **1.4 Land Use Context**

The subject property is located within the urban area of the City of Clarence-Rockland. The existing land use designations from the City of Clarence Rockland Official Plan are a combination of low, medium and high density residential, community facilities, service commercial, business park, environmental protection area and major open space. The subject property is located within the City of Clarence-Rockland Expansion Lands Secondary Plan.

## 2.0 METHODOLOGY

### 2.1 Desktop Review

A desktop information review was completed to aid in the scoping of field investigations and to gather information relating to natural heritage features that may be present within the subject property or within 1 km of the study area. 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 area based on a review of publicly accessible occurrence records, and 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 (OMNR, 2011b);
- Ontario Geological Survey (OGS, 2019);
- Department of Fisheries and Oceans Canada SAR Maps (DFO, 2023);
- Fish ON-Line (MNRF, 2023);
- Fish Activity Area (MNRF, 2022);
- Natural Heritage Information Centre Biodiversity Explorer (OMNRF, 2013a);
- Breeding Bird Atlas of Ontario (Cadman et al., 2007)
- Atlas of Mammals of Ontario (Dobbyn, 1994);
- Ontario Herpetofaunal Atlas (Oldham and Weller, 2000);
- Ontario Reptile and Amphibian Atlas (Ontario Nature, 2020);
- eBird Canada Hotspots (eBird Canada, 2023);
- iNaturalist Explore Observations Map (iNaturalist, 2023);
- iNaturalist Herps of Ontario Map (iNaturalist, 2023);
- Wildlife Values Area Geohub (Ontario);
- United Counties of Prescott-Russell Geoportal (À la Carte, Undated); and
- Official Plan of the Urban Area of the City of Clarence-Rockland (Clarence-Rockland, 2021).

### 2.2 Field Investigations

Field investigations were undertaken to describe in general, the natural and physical setting of the subject property with a focus on natural heritage features and to identify any potential SAR or their habitat that may exist at the subject property.

Field investigations completed in support of this EIS are outlined in Table 2.2 below. Photographs of site features taken during field investigations are provided in Appendix B.

**Table 2.1 Summary of Field Investigations**

Date	Time	Weather	Purpose
May 11, 2022	20:45 – 22:30	24°C, 30% cloud cover, Beaufort 0, no precipitation	Amphibian Survey
May 24, 2022	20:30 -23:30	17°C, 30% cloud cover, Beaufort 0, no precipitation	Amphibian Survey, Bat Roosting Survey
June 10, 2022	07:15 – 11:45	13°C, 50% cloud cover, Beaufort 3, no precipitation	Breeding Bird Survey, Ecological Land Classification
June 14, 2022	00:00- 00:30	13°C, 0% cloud cover, Beaufort 1, no precipitation	Whip-poor-will Survey
June 14, 2022	21:00 – 23:45	23°C, 0% cloud cover, Beaufort 1, no precipitation	Amphibian Survey, Whip-poor-will Survey
June 15, 2022	22:30 – 23:45	21°C, 50% cloud cover, Beaufort 1, no precipitation	Whip-poor-will Survey
June 23, 2022	06:45 – 09:30	18°C, 100% cloud cover, Beaufort 1, light mist	Breeding Bird Survey, Ecological Land Classification
July 6, 2022	06:30 – 10:30	18°C, 0% cloud cover, Beaufort 1, no precipitation	Breeding Bird Survey, Ecological Land Classification
May 26, 2023	10:00-18:30	16°C, ~10% cloud cover, Beaufort 2, no precipitation	Fish Community Sampling

### 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 between May and July, 2022, following the Southern Ontario Ecological Land Classification System (Lee *et al.* 2008) protocols. Vegetation communities were confirmed in the field by employing the random meander methodology while documenting dominant vegetation species within the various vegetation community forms.

### 2.2.2 Breeding Bird Surveys

Breeding bird surveys were conducted on three occasions at ten point-count locations. Breeding bird survey locations are provided on Figure A.2 in Appendix A. Breeding bird surveys followed protocols from the Canadian Breeding Bird Surveys (Downes and Collins, 2003) and the Ontario Breeding Bird Atlas (Cadman et al., 2007). Surveys were conducted no earlier than 30 minutes before sunrise and were completed within 5 hours of sunrise, to encompass peak songbird

activity. Breeding bird surveys consisted of 5 minutes of passive listening in which all birds heard or seen within the survey period were recorded, including species, sex and breeding behaviour, if possible. A list of all avian species identified on-site is provided in Appendix C.1.

### **2.2.3 Amphibian Breeding Surveys**

Amphibian breeding surveys were conducted on three occasions at eight point-count locations. Breeding amphibian survey locations are shown on Figure A.2. Breeding amphibian surveys followed protocols from the Marsh Monitoring Program (Bird Studies Canada, 2008). Surveys were conducted no earlier than 30 minutes after sunset and were completed by midnight, to encompass peak amphibian calling activity. Breeding amphibian surveys consisted of 3 minutes of passive listening in which all amphibians calling during the survey period were recorded, along with their call code. A list of all amphibian species identified on-site is provided in Table C.1 in Appendix C.

### **2.2.4 Bat Acoustic Survey**

During the May 24 amphibian breeding survey on-site, a handheld ultrasonic module, the Echo Meter Touch 2 Pro and its auto-ID feature was used to aid in identifying potential bat species on-site. The auto-ID feature of the echo meter touch 2 pro uses recordings from the module and suggests 1-2 of the most likely species present for each recording. However, because bats vary their echolocation calls in response to a wide variety of needs, no automated call identification can achieve 100% accuracy in species identification. Species detected during the deployment of bat acoustic survey are provided in Table C.1 in Appendix A.

### **2.2.5 Nocturnal Whip-poor-will Surveys**

Nocturnal whip-poor-will surveys were conducted on three occasions at one point-count location; whip-poor-will survey locations are provided on Figure A.2. Whip-poor-will surveys followed protocols from the Ontario Breeding Bird Atlas: Nightjar Survey Instruction Manual (2021). Surveys were conducted within one week of the full moon between June 15<sup>th</sup> and July 15<sup>th</sup> and completed under optimal weather conditions to encompass peak whip-poor-will calling activity. Surveys were conducted no earlier than 30 minutes after sunset as long as the moon was visible over horizon, with at least 50% illumination. Surveys consisted of 5 minutes of passive listening in which all whip-poor-wills calling during the survey period were recorded.

### **2.2.6 Fish Community Sampling**

A fish community sampling survey was completed to determine the suitability of the on-site watercourses to provide fish habitat. Fish community sampling was performed on May 26, 2023, by using an electrofishing backpack unit, dip netting and baited minnow traps to confirm the presence/absence of fish species. The sampling was conducted within five reaches and were determined to be representative and reflective of the general habitat conditions within the watercourses throughout the study area (Figure A.2 – Appendix A). Each reach was surveyed

until all habitats were fished. The fish community sampling survey was completed under all necessary permits from the Ministry of Natural Resources and Forestry (MNRF).

### **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, 2015b); and
- Significant Wildlife Habitat Mitigation Support Tool (OMNRF, 2014b).

## **3.0 EXISTING ENVIRONMENT**

### **3.1 Ecoregion**

The site is situated Ecoregion 6E-12 (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 and an 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 generally flat with gentle undulations. A topographical high of 64 mASL is located at the northerly extents adjacent to David Street, and a topographical low of 50 mASL is present at two different locations associated with different watercourses.

Two topographical landforms, as mapped by Chapman and Putnam (1984) are described on site; limestone plains and clay plains of the Ottawa Valley Clay Plains physiographic region. The limestone plains cover most of the center of the property, spanning from the northeastern corner to near the southern limits. The clay plains are present in two separate areas one along the northeastern area of the site and the other along most of the southern limits.

The Ontario Geological Survey (OGS, 2019) identifies six surficial soil units onsite; Paleozoic bedrock, till (stone-poor, sandy silt to silty sand-textured till on Paleozoic terrain), older alluvial deposits (clay, silt, sand, gravel, may contain organic remains), organic deposits (peat, muck, marl), fine-textured glaciomarine deposits (silt and clay, minor sand and gravel), and colluvial deposits (boulders, scree, talus, undifferentiated landslide materials). Each of these surficial soil units is found in irregular shapes throughout the site.

Bedrock at the site, as mapped by the Ontario Geological Survey (OGS, 2019), is comprised of limestone, dolostone, shale, arkose, and sandstone of the Ottawa Group; Simcoe Group; and Shadow Lake Formation.

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

Four separate unnamed watercourses have been identified with the subject property: one in the northerly area of the site, two in the southerly area of the site, and one in the easterly portion of the subject property. Surface water features are illustrated on Figure A.2 in Appendix A.

The northern watercourse originates in the agricultural field near David Street, flows southeast and passes through an on-site wetland before leaving the site. The southern watercourses enter the site through drainage features associated with Caron Street and Baseline Road, flow eastward through the agricultural fields, confluence with each other on the eastern property line, and continue to flow westward for approximately 1 km where it discharges into Clarence Creek. The eastern watercourse originates from a wooded community on-site and flows eastwards to Clarence Creek.

A targeted fisheries assessment was conducted as part of this EIS. Fish species were identified in 4 of the 5 sampled survey points within the subject property (Figure A.2 – Appendix A). Fish habitat is discussed and evaluated further in Section 4.6 of this EIS. Groundwater investigations were not completed in support of this EIS.

### 3.4 Vegetation Communities

Vegetation communities on-site were confirmed by GEMTEC in 2022, following protocols utilized in the Southern Ontario Ecological Land Classification System (Lee *et al.*, 2008). Vegetation on-site is reflective of areas generally associated with some levels of alteration, disturbance or active use such as clearcuts and agricultural use areas. Table 3.1 below provides a summary of the vegetation communities identified on-site.

**Table 3.1 Vegetation Communities On-site**

ELC Type	Description	Size (ha)
Open Agriculture – Annual Row Crops (OAGM1)	Active agricultural communities planted with common, rotating cash crop species including corn and soy beans.	54.18
Alder Mineral Deciduous Thicket Swamp (SWTM1)	<p>Limited to a single location on-site, this community was identified centrally on the site. The northern watercourse, as previously mentioned, passes through this wetland before continuing off-site.</p> <p>Vegetation in this community was dominated by speckled alder (<i>Alnus incana</i>). Other tree and shrub constituents include red maple (<i>Acer rubrum</i>), silver maple (<i>Acer saccharinum</i>), black ash (<i>Fraxinus nigra</i>) and green ash (<i>Fraxinus pennsylvanica</i>).</p> <p>Ground cover include sensitive fern (<i>Onoclea sensibilis</i>), interrupted fern (<i>Osmunda claytoniana</i>), and ostrich fern (<i>Matteuccia struthiopteris</i>).</p> <p>Vegetation within the watercourse and its riparian area consisted of European frogbit (<i>Hydrocharis morsus-ranae</i>), lesser duckweed (<i>Lemna minor</i>), cattail (<i>Typha sp.</i>), willow</p>	3.18

ELC Type	Description	Size (ha)
	( <i>Salix sp.</i> ), reed canary grass ( <i>Phalaris arundinacea</i> ), and silver maple.	
Cultural – Clear Cut (CU)	This community is present throughout the majority of the site, spanning the width of the property and extending north and south along the western edge of the subject property. Though this area had been clearcut prior to field investigations, vegetation identification was based on remnants found within the clearcut. Tree species found here are reflective of common upland mixed forest species and included white pine ( <i>Pinus strobus</i> ), sugar maple ( <i>Acer saccharum</i> ), eastern hemlock ( <i>Tsuga canadensis</i> ), and American elm ( <i>Ulmus americana</i> ).	45.99
Dry – Fresh Red Pine Naturalized Coniferous Plantation (FOCM6-2)	Monoculture of red pine ( <i>Pinus resinosa</i> ), representative of greater than 70% of the total canopy cover.	2.71
Dry – Fresh White Pine – Hardwood Mixed Forest (FOMM2)	Forested community with both coniferous and deciduous tree species at >25% of canopy cover. Common species constituents include white pine ( <i>Pinus strobus</i> ), sugar maple, red oak ( <i>Quercus rubra</i> ), and white oak ( <i>Quercus alba</i> ).	1.46
Maple Mineral Deciduous Swamp (SWDM3)	Wetland community containing tree cover >25%; trees 5 m in height and deciduous species >75% of the canopy cover. Dominated by hydrophilic species and is typically rich in ferns and sedges.	1.29
Cultural Meadow (CUM)	Anthropogenically impacted community comprised of common, non-sensitive grass and forb species. Tree cover is less than or equal to 25% and often contains a large proportion of non-native species.	13.18
Deciduous Forest (FOD)	Forested community with a deciduous tree coverage of >75% of the canopy.	1.81
Mixed Forest (FOM)	Forested community with both coniferous and deciduous tree species coverage representing greater than 25% of the canopy coverage	2.37
Rural Property (CVR_4)	Existing rural property area comprised of anthropogenic features and little to no vegetative cover, aside from cool season, tolerant grasses.	0.88

### **3.5 Wildlife**

During the completed field investigations within the study area, all terrestrial wildlife, including calls and sign, were recorded. These observations are summarized in Table C.1 in Appendix C.

## 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 are "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 regard 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."

No provincially significant wetlands (PSW) were identified on-site or within the study area during the desktop review.

A local wetland was identified on-site (ELC Codes: SWTM1 and SWDM3). This wetland is located centrally on the subject property and continues off-site for approximately 1.3 km southeast. According to the NHIC database, this wetland is referred to as the Clarence Creek Swamp and classified as Evaluated-Other. Evaluated-Other indicates that the wetland community was evaluated against the provincial Ontario Wetland Evaluation System (OWES) criteria, and was determined to not meet the required criteria threshold to be classified as a PSW. The Clarence Creek Swamp within the study area is considered locally significant (NHIC 2025).

Potential impacts to local wetlands on-site and within the study area are further evaluated and discussed below in Section 6.

### 4.2 Significant Woodlands

Significant woodlands are defined in the natural heritage reference manual (OMNR, 2010) as "an area that 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 C.2 in Appendix C, presents the screening rationale for significant woodlands applied in this EIS. Following review of Table C.2 in Appendix C, significant woodlands are not present on-site, or within the study area.

#### **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 valleylands 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-water marks or the width of the stream meander belt (OMNR, 2010).

No significant valleylands were identified within the subject property or the study area during the completed desktop review or during field investigations.

#### **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 were identified within the study area during the desktop review or during the field investigation.

#### **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, 2015b) 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 C.3, C.4, C.5 and C.6 in Appendix C, 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, 2015b) identify 13 types of seasonal concentration habitats that may be considered SWH. These 13 types of seasonal habitat are presented in Table C.3 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 C.3 in Appendix C, one habitat of seasonal concentration of animals have been identified as being present on-site or within the study area: *candidate* bat maternity colonies and *candidate* turtle wintering area.

##### 4.5.1.1 Bat Maternity Colonies

*Candidate* bat maternity colonies were identified within the treed ecosites of the subject property. Bat maternity colonies can be found in tree cavities, vegetation, and often in buildings (buildings are not considered to be SWH). Bat maternity colonies provide critical habitat for the life cycle of big brown bat and silver haired bat as a space for females to give birth to and rear their young. The confirmed criteria for bat maternity SWH is a forested ecosite with greater than 10 snags per hectare, with use by 10 or more big brown bat (*Eptesicus fuscus*) or 5 or more adult female silver haired bats (*Lasionycteris noctivagans*).

Snag surveys to confirm bat maternity colonies within the forested communities were outside of the scope of this EIS. As such, the presence or absence of bat maternity colony SWH was not confirmed. Potential impacts to *candidate* bat maternity colony SWH from the proposed development are discussed in Section 6.

##### 4.5.1.2 Candidate Turtle Wintering Area

*SWH for candidate* turtle wintering area was identified within the subject property study area, limited to the downstream section of the north, central watercourse on-site and the habitat extending off-site

Turtle wintering areas are 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). The defining criteria for confirmed turtle wintering area SWH is the presence of 5 over-wintering midland painted turtles, one or more northern map turtle or one or more snapping turtle within a wetland (OMNRF, 2015a).

Targeted turtle basking surveys were outside of the scope of this EIS; however, one indicator species, snapping turtle, was identified as potentially being found within the study area based on occurrence records from the NHIC. *Candidate* overwintering habitat is not present within the upstream portion of the watercourse that is located on-site. Observations from field investigations

determined that water within the upstream limits lacked sufficient depths and/or permanency to support overwintering turtles.

Impacts to *candidate* turtle wintering area SWH from the proposed development is 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 community identified on-site and described in Section 3.4 of this report is not ranked by the NHIC as S1, S2, or S3 and are therefore not considered to be rare vegetation communities.

#### 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, 2015b) identify 11 specialized habitats that may constitute SWH, these 11 types of specialized wildlife habitats are evaluated in Table C.4 in Appendix C.

Following a review of Table C.4 in Appendix C, one specialized wildlife habitats have been identified as being present on-site or within the Study Area; *confirmed* amphibian breeding habitat (woodland). Impacts to specialized wildlife habitats from the proposed development are discussed in Section 6 below.

##### 4.5.3.1 Confirmed Woodland Amphibian Breeding Habitat

*Confirmed* woodland amphibian breeding habitat was identified within the subject property. Woodland amphibian breeding habitat provides critically important breeding habitat for the following wildlife species: Eastern newt, blue-spotted salamander, spotted salamander, gray treefrog, spring peeper, western chorus frog and wood frog. 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.

To evaluate the potential for the habitats on-site to provide amphibian breeding habitat, a series of amphibian breeding surveys were conducted. Table 4.1 below summarizes the results of the amphibian breeding survey described in Section 2 of this report. Figure A.2 in Appendix A illustrates the survey locations.

**Table 4.1 Summary of Amphibian Breeding Call Surveys**

Survey Location	Breeding Habitat	Species/Highest Call Code/ Date	Confirmed SWH
1	Wetland	AMTO / 3 / May 11, 2022 GRFR / 2-5 / June 14, 2022 GRTR / 3 / May 24, 2022 and June 14, 2022 SPPE / 2-6 / May 11, 2022	No
2	Woodland/Wetland	AMTO / 3 / May 11, 2022 GRFR / 2-4 / June 14, 2022 GRTR / 3 / June 14, 2022 SPPE / 3 / May 11, 2022	Yes
3	Wetland	AMTO / 2-4 / May 24, 2022 GRTR / 3 / June 14, 2022 SPPE / 2-7 / May 24, 2022	No
4	Woodland	AMTO / 2-6 / May 11, 2022 GRTR / 1-2 / May 24, 2022 SPPE / 3 / May 11, 2022	No
5	Wetland	AMTO / 2-10 / June 14, 2022 GRFR / 2-2 / June 14, 2022 GRTR / 2-10 / June 14, 2022 SPPE / 2-6 / May 24, 2022	No
6	Woodland	AMTO / 1-1 / May 24, 2022 GRFR / 2-6 / June 14, 2022 GRTR / 3 / June 14, 2022 SPPE / 1-2/ May 24, 2022	No
7	Woodland	No observations / May 24, 2022, and June 14, 2022	No
8	Woodland	No observations / May 24, 2022, and June 14, 2022	No

**Notes:** AMTO = American Toad, BULL = American Bullfrog, CHFR = Western Chorus Frog, GRFR = Green frog, GRTR = Gray Treefrog, NLFR = Northern Leopard Frog, SPPE = Spring Peeper, WOFO = Wood Frog. Call Codes: the first number indicates the call code where: (1) number of individuals can be accurately counted, (2) individuals can be readily estimated, (3) calls are continuous and overlapping such that estimates of individuals are not reliable. The second number identifies the number of individuals calling. Call codes of 3 do not have a second number, as individual estimates are not possible.

Based on review of Table 4.1 above, habitat on-site associated with survey location 2 meets the defining use criteria for *confirmed* woodland amphibian breeding SWH. As such, impacts to amphibian breeding habitat is evaluated and discussed further in Section 6 of this EIS.

#### 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 (OMNRF, 2015b), 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, 2015b) 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 C.5 in Appendix C, including a brief rationale as to why they are or are not considered further in this EIS.

Following a review of Table C.5 in Appendix C, *candidate* habitat for species of conservation concern has been identified on-site for eastern whip-poor-will, eastern wood-pewee, wood thrush, and snapping turtle.

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

Three species of special concern were identified on-site or within the broader study area during field investigations: eastern wood-pewee, eastern whip-poor-will, and wood thrush. Based on occurrence data from the NHIC and the habitat present on site, snapping turtle also has the potential to be present within the study area. 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 is a small flycatcher bird with an S-rank of S4 (uncommon but not rare) in Ontario. No historical records indicated presence of species within the study area. Eastern wood-pewee is a woodland species that is often found near clearings and edges. Eastern wood-pewee were observed calling on-site during the field investigations. Given the woodlands on-site and within the study area which may provide suitable habitat, and confirmed sighting within the study area, there is a high chance of the eastern wood-pewee or suitable habitat to occur on-site.

### **Wood Thrush**

The wood thrush is a medium-sized songbird with an S-rank of S4 (uncommon but not rare) in Ontario. No historical records indicate presence of species within the study area. Wood thrush are a woodland species that is often in moist stands of trees with well-developed undergrowth and tall trees for singing perches. Wood thrush were observed calling on-site during the field investigations. Given the woodlands on-site and within the study area which may provide suitable habitat, and confirmed sighting within the study area, there is a high chance of the wood thrush or suitable habitat to occur on-site.

### **Eastern Whip-poor-will**

The eastern whip-poor-will is a medium sized crepuscular nightjar species with an S-rank of S4 (uncommon but not rare) in Ontario. Whip-poor-will are usually found in areas with a mix of open and forested habitat, such as open woodlands or opening in mature woodlands. Eastern whip-poor-will were observed calling on-site during targeted field investigations. The wooded areas of the subject property provide suitable habitat for this species on-site.

### **Snapping Turtle**

The snapping turtle 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 turtle was not detected during the field investigation. However, NHIC database identified snapping turtle occurrence records within 1 km of the site. Snapping turtles are aquatic generalists found in a variety of wetlands, water bodies and watercourses. Given the availability of potentially suitable aquatic habitat within the watercourses in the study area, there is a moderate potential for snapping turtles to occur on-site.

#### **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, 2015b). The Significant Wildlife Habitat Ecoregion Criterion Schedules for Ecoregion 6E-11 (OMNRF, 2015b) identifies two types of animal movement corridors: amphibian movement corridors and deer movement corridors. As per guidance presented by the OMNRF (2015b), 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 C.6 in Appendix C, no animal movement corridors have been identified on-site.

#### **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.

A fish habitat and community assemblage assessment survey was conducted in support of this EIS. Fish community sampling was performed by using an electrofishing backpack unit, dip netting and baited minnow traps to confirm the fish species present. The sampling was conducted within five reaches and were determined to be representative and reflective of the general habitat conditions within the watercourses throughout the subject property and study area. The fish community sampling confirmed the presence of a variety of fish species throughout the different surveyed reaches. Table 4.2 below summarizes the results of the fish community sampling investigation as described in Section 2 of this report. Figure A.2 in Appendix A illustrates the survey locations

**Table 4.2 Summary of Fish Community Sampling Survey**

Survey Location (Reach)	Species	Confirmed Fish Habitat
1	Bluntnose Minnow	Yes
	Brook Stickleback	
	Creek Chub	
	Fathead Minnow	
	Fathead Minnow (Rosy Red)	
2	Bluntnose Minnow	Yes
	Brook Stickleback	
	Fathead Minnow	
	Fathead Minnow (Rosy Red)	
3	Fathead Minnow	Yes
	Fathead Minnow (Rosy Red)	
4	No fish captured	No
	No fish observed	
5	Bluntnose Minnow	Yes
	Brook Stickleback	

All sampled watercourses are hydrologically connected to each other. The northern watercourse originates in the open agricultural field on-site, passes through the identified locally significant

wetland and continues to flow southeast off-site. Results from the fish sampling survey noted that fish were only captured in the downstream portions (Reach 1 and Reach 2) of this watercourse whereas no fish were captured at the upstream limits (Reach 4). The upstream origination area of the watercourse displayed limited water and was noted as being dry in some places. This area of the watercourse may provide fish bearing habitat during times of elevated water levels and is likely to contribute to downstream base flows following spring freshet and/or large storm events.

Fish were also captured in Reach 3 that flows eastwards off property from the central portion of the subject property and within Reach 5 located within the study area.

Efforts from the fish community sampling resulted in the capture and positive identification of five small-bodied fish species. Four of the species; bluntnose minnow, brook stickleback, creek chub, and fathead minnow are common species, widely distributed across Ontario and are often encountered during fish sampling surveys.

Rosy red is an orange-coloured form of the fathead minnow (*Pimephales promelas*). Rosy reds are cultured for use as feeder, bait, and pond fish. Rosy reds have occasionally been captured in the wild in Ontario as the result of illegal introduction or escape from garden ponds (Holm, Mandrak & Burridge, 2009). As rosy reds are considered a non-native species, a local biologist from the MNRF was contacted immediately upon capture, as per the conditions of the fish collector's permit.

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 field investigation conducted as part of this EIS, outlined in Section 2.2.

Table C.7 in Appendix C, 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 6.4.

#### **4.8 Environmental Protection Area (EPA)**

An area designated as Environmental Protection Area (EPA) is identified on Schedule A of the City of Clarence-Rockland Official Plan (2021). This designated area originated from the document, Amendment No. 13 to the Official Plan of the urban Area of the City of Clarence-Rockland (2019). Potential impacts to the EPA on-site is further evaluated and discussed below in Section 6.

## 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, is in support of development of a subdivision for Part Lots 21, 22, and 23, Concession 2 (Old Survey), Township of Clarence-Rockland, United Counties of Prescott-Russell, Ontario.

The proponent is seeking to develop an approximately 113 hectare (ha) vacant property into a subdivision. Based on the current conceptual design plan, the subdivision is anticipated to consist of low, medium and high density residential blocks, parkland, commercial zones, community zones, and an on-site stormwater management facility. Access to the proposed subdivision will be from Caron Street and David Road. The proposed plan of development is provided on Figure A.4.

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, road construction, laneway construction, excavation and pouring of foundations, and general landscaping activities.

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: loss of wooded areas and locally identified wetlands, a major increase in impervious surface, major increase in stormwater generation, short-term and long-term increases in sedimentation and/or erosion and increased noise generation.

### 6.1 Local Wetlands

As outline in Section 4.1, no provincially significant wetlands occur on-site. However, one local unevaluated wetland (Clarence Creek Swamp) approximately 4.5 ha in size, is present on-site within the central area of the property.

The subdivision concept plan will require the removal of all wetland habitat identified within the subject property and therefore will directly impact the form and function of the wetland feature (Figure A.5 – Appendix A). As identified in Section 5.5.1 of the UCPR Official Plan, any development or site alteration proposed in or adjacent to an evaluated wetland that has not met the threshold to be designated provincially significant, or a wetland within the Counties Natural Heritage System, shall avoid negative impacts to the wetland (i.e., relocate the development); and, where it has been demonstrated that avoidance is not possible, minimize the impacts to the fullest extent possible (as determined through an EIS). Where a wetland will still be lost or negatively impacted, compensation may be required, either on the property or in close proximity to the impact (UCPR 2022)

Additional indirect impacts to wetlands that are connected downstream and are located adjacent to the subject property are primarily associated with changes to the surface water and groundwater water balance through increased storm water runoff resulting from an increase in the impervious surface area, encroachment resulting in compaction of soils and vegetation loss, decreased groundwater recharge resulting from reduced upland infiltration capacity, and potentially increased nutrient loading to adjacent surface water features.

Other impacts include short duration construction impacts, including heavy machinery encroachment, fill placement, compaction, and long term human disturbance such as noise generation, dumping or refuse and yard waste and trampling.

Compensation and mitigation measures intended to protect local wetlands are provided in Section 7.

## 6.2 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 colonies, *candidate* turtle wintering areas, *confirmed* woodland amphibian breeding habitat and habitats of special concern and rare wildlife.

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.

### 6.2.1 Bat Maternity Colonies

Bat maternity colonies are limited to the wooded areas within the subject property and study area. Potential direct impacts to *candidate* bat maternity colonies may include loss of required candidate roosting/nesting trees. Indirect potential impacts include increased human presence, increased human and wildlife interaction and disturbances, and increased noise levels.

### 6.2.2 Turtle Wintering Areas

*Candidate* turtle wintering areas can be found within the wetland communities and watercourses on-site as these features may contain open water with seasonally sufficient depths and substrate ideal for turtle overwintering.

As in-water work is proposed for the development, the greatest potential impacts to turtle overwintering areas are alterations to water quality and impacts to turtles during removal of wetland habitat and watercourses. Potential indirect impacts to surface water features located outside of the subject property but within the study area, resulting from construction activities and from increased runoff following construction, may include alterations to water quality, increased storm water runoff, overland flow and concomitant sediment transport caused by an increase in impervious surface area and vegetation loss, as well as increased nutrient loading through both overland and subsurface pathways, and landscaping practices.

Mitigation measures to mitigate impacts to turtle overwintering areas on-site are provided in Section 7.

### 6.2.3 Woodland Amphibian Breeding Habitat

*Confirmed* woodland amphibian breeding habitat is confined to the local wooded wetland and forested communities on-site. Based on the description provided in the Significant Wildlife Habitat Criteria Schedules (OMNRF, 2015), woodland amphibian habitat is considered to be the wetland, plus a 230 m radius of surrounding woodland area. *Confirmed* woodland amphibian breeding habitat is illustrated on Figure A.5 in Appendix A.

As in-water works will be required as a component of the proposed development, impacts to *confirmed* woodland amphibian breeding SWH are anticipated to be associated with direct

impacts relating to the removal of woodland and wetland habitats. Impairment of breeding sites as a result of encroachment can result in increased predation and loss of habitat structure (OMNRF, 2014).

The cumulative impacts of significant breeding habitat include increased human disturbance (pet predation, frog catching, etc.), and increases in stormwater generation and concomitant sediment transport and nutrient loading to surface water, reducing water quality within wetlands.

Mitigation measures intended to minimize and offset impacts to *confirmed* significant wildlife habitat for breeding wetland amphibians are presented in Section 7.

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

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

Impacts to eastern wood-pewee and their habitat on-site from the proposed development are limited to the wooded wetlands and woodlands within the subject property that may provide suitable nesting and foraging habitat.

Impacts to eastern wood-pewee habitat includes loss of woodland habitat and increased human disturbance and noise generation. The proposed development will result in the loss of suitable forest habitat on-site with suitable habitat sparsely available within the broader study area. Mitigation measures intended to prevent negative impacts to nesting and foraging eastern wood-pewee are presented in Section 7.

### ***Wood Thrush***

During the breeding season, the wood thrush is 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). For wood thrush, habitat selection is based more on the structure of the forest, preferring sites with lower elevations, trees taller than 16 m, closed canopy (>70%), with a high variety of deciduous species, moist soil and decaying leaf litter (COSEWIC, 2012b).

Impacts to wood thrush and their habitat on-site from the proposed subdivision development is limited to the forest habitat on-site, that may provide suitable nesting and foraging habitat. Impacts to wood thrush habitat include the loss of forest habitat, increased fragmentation and increased human interaction. The proposed development will result in the loss of suitable forest habitat on-site with suitable habitat sparsely available within the broader study area. Impacts from increased human presence are anticipated given the limited availability of suitable habitat within the greater study area.

### *Eastern Whip-poor-will*

Impacts to eastern whip-poor-will and their habitat on-site from the proposed development are limited to the forested and thicket habitats on-site (ELC code: FOD, FOCM6-2, SWTM1, FOCM6 and FOMM2), that may provide suitable nesting and foraging habitat.

Impacts to eastern whip-poor-will and its habitat may include the loss of available open habitat, increased fragmentation, and increased human presence. The proposed development will result in the loss of suitable forest and thicket habitat on-site with suitable habitat sparsely available within the broader study area. Mitigation measures intended to prevent negative impacts to nesting and foraging eastern whip-poor-will are presented in Section 7.

### *Snapping Turtle*

Threats to snapping turtle are primarily related to their life-history, their slow recruitment, late maturity, long lifespan and high adult survival make them extremely vulnerable to a variety of anthropogenic impacts (COSEWIC, 2008). Short, cool summers also reduce hatching success. In Canada, snapping turtles are most impacted by events that increase adult mortality, such as harvesting of adults, persecution and road mortality (COSEWIC, 2008). Other threats include loss of habitat, environmental contamination and nest predation (COSEWIC, 2008).

As in-water works and works within wetland communities are proposed as part of the future development, potential impacts to snapping turtle and their habitat are anticipated to be direct and indirect in nature. Direct impacts within the subject property are associated with the loss of suitable, candidate overwintering and wetland habitat. Potential indirect impacts may include changes to surface water quality and quantity through increased storm water runoff resulting from an increase in impervious surface area and vegetation loss. Other potential impacts include short duration construction impacts, including heavy machinery encroachment, fill placement and long-term human disturbance such as noise generation, dumping of refuse and yard waste and trampling.

## **6.3 Fish Habitat**

As discussed in Section 4.6, suitable habitat for fish was identified within watercourses located on the subject property. Potential impacts to aquatic habitats and the communities therein can generally be identified as: a direct loss of habitat, direct injury to aquatic organisms as a result of construction, or indirect changes to the aquatic habitat that may occur in the long term and/or over a larger area. The subdivision concept plan will require the removal or alteration of watercourses within the subject property.

When development is unable to avoid resulting in the harmful alteration, disturbance or destruction (HADD) 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.

Additional indirect impacts to features that are connected downstream and are located adjacent to the subject property are primarily associated with changes to the surface water and groundwater water balance through increased storm water runoff resulting from an increase in the impervious surface area, encroachment resulting in compaction of soils and vegetation loss, decreased groundwater recharge resulting from reduced upland infiltration capacity, and potentially increased nutrient loading to adjacent surface water features.

Other impacts include short duration construction impacts, including heavy machinery encroachment, fill placement, compaction, and long term human disturbance such as noise generation, dumping or refuse and yard waste and trampling.

Mitigation measures intended to protect fish and fish habitat on-site are provided in Section 7.

#### **6.4 Species at Risk**

As outlined in the Endangered Species Act (Ontario, 2007), only species listed as threatened or endangered and their habitat receive automatic protection. Following enactment of Bill 5, species specific habitat regulations are no longer valid for species protection, this includes documents such as general habitat descriptions that outlined Category 1, Category 2 and Category 3 habitats for species. Presently, habitat protections refer to the definition outlined in Bill 5 as follows:

*“habitat” means:*

- a) *In respect of an animal species:*
  - i *A dwelling-place such as a den, nest or other similar place, that is occupied or habitually occupied by one or more members of a species for the purposes of breeding, rearing, staging, wintering or hibernating, and*
  - ii *The area immediately around a dwelling place described in subclause (i) above that is essential for the purposes set out in that subclause.*
- b) *In respect of a vascular plant species: the critical root zone surroundings a member of the species, and*
- c) *In respect of all other species: an area on which any member of a species directly depends in order to carry on its life processes”*

Under the ESA, 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 subsections below. Mitigation measures intended to protect species SAR from impacts of the proposed development are discussed in Section 7.

#### **6.4.1 Eastern Red Bat**

The eastern red bat is found throughout Canada (except Prince Edward Island), the United States, and northeast Mexico; with distribution uncommon west of the Western Cordillera. In Ontario, the species occurs throughout Ontario, appearing as far north as James Bay (COSEWIC, 2023).

Eastern red bats overwinter in warmer climates in the southern extent of the United States, typically beneath leaf litter (COSEWIC, 2023). In comparison to many other Ontario bat species, they do not overwinter in caves. During the spring and summer months, they typically utilize the foliage of trees and occasionally shrubs for roosting habitat, with a preference for roosting near the edge of the crown and at sufficient heights to prevent access from mammalian predators (COSEWIC, 2023).

Although the forest habitat on-site does not meet the requirements to support bat maternity colonies, given the availability of habitat on-site and within the study area, there is a potential for eastern red bat to occur on the property, primarily for foraging or non-maternal roosting. Impacts to eastern red bat are primarily associated with habitat loss, encroachment and increased wildlife-human interaction.

#### **6.4.2 Eastern Small-footed Myotis**

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).

Although the vegetation community on-site does not meet the requirements to support bat maternity colonies, given the availability of habitat and buildings within the study area, there is a potential for eastern small-footed myotis to occur on the property, primarily for foraging or non-maternal roosting. Impacts to eastern small-footed myotis are primarily associated with habitat loss, encroachment and increased wildlife-human interaction.

#### **6.4.3 Hoary Bat**

The hoary bat range spans across all provinces and territories within Canada, all the states within the United States, and has a wide distribution throughout Mexico (COSEWIC, 2023). In Ontario,

the hoary bat is found throughout the province, and has been observed north of James Bay (COSEWIC, 2023).

Hoary bats overwinter in warmer climates in the southern extent of the United States, typically beneath leaf litter (COSEWIC, 2023). In comparison to many other Ontario bat species, they do not overwinter in caves. During the spring and summer months, they typically utilize the foliage of trees and occasionally shrubs for roosting habitat, with a preference for roosting near the edge of the crown and at sufficient heights to prevent access from mammalian predators (COSEWIC, 2023).

Although the forest habitat on-site does not meet the requirements to support bat maternity colonies, given the availability of habitat on-site and within the study area, there is a potential for hoary bat to occur on the property, primarily for foraging or non-maternal roosting. Impacts to hoary bat are primarily associated with habitat loss, encroachment and increased wildlife-human interaction.

#### **6.4.4 Little Brown Myotis**

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 in gaps in the forest. Open fields and clear-cuts are not typically utilized for foraging (COSEWIC, 2013).

Although the vegetation community on-site does not meet the requirements to support bat maternity colonies, given the availability of habitat and buildings within the study area, there is a potential for little brown myotis to occur on the property, primarily for foraging or non-maternal roosting. Impacts to little brown myotis are primarily associated with habitat loss, encroachment and increased wildlife-human interaction.

#### **6.4.5 Silver-haired Bat**

In North America, the silver-haired bat is widely distributed and spans from the southern extent of the Canadian provinces to east-central Mexico (COSEWIC, 2023). In Canada, the distribution spans from coast to coast, but appears to be uncommon in Atlantic Canada. In Ontario, the species occurs throughout Ontario, appearing as far north as James Bay (COSEWIC, 2023).

Silver-haired bats overwinter in mines, rock crevices, trees, and snags across North America, including the United States, the Great Lakes region of Ontario, and in some areas of British Columbia (COSEWIC, 2023). Foraging typically occurs in young and old forests. Silver-haired bat roost primarily under bark and in cavities of trees; however, may occasionally roost on or in buildings (COSEWIC, 2023).

Although the forest habitat on-site does not meet the requirements to support bat maternity colonies, given the availability of habitat and buildings on-site and within the study area, there is a potential for silver-haired bat to occur on the property, primarily for foraging or non-maternal roosting. Impacts to silver-haired bat are primarily associated with habitat loss, encroachment and increased wildlife-human interaction.

#### **6.4.6 Tri-colored Bat**

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 and south (COSEWIC, 2013).

Tri-colored bat 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 have the strongest correlation with humidity levels and warmer temperatures (COSEWIC, 2013). In the spring and summer, tri-colored bat utilizes trees, rock crevices and buildings for maternity colonies. Foraging is mainly done over watercourses and streamside vegetation (COSEWIC, 2013).

Although the vegetation community on-site does not meet the requirements to support bat maternity colonies, given the availability of habitat and buildings within the study area, there is a potential for tri-colored bat to occur on the property, primarily for foraging or non-maternal roosting. Impacts to tri-colored bat are primarily associated with habitat loss, encroachment and increased wildlife-human interaction.

#### **6.4.7 Black Ash**

Black ash stems were identified within the wetland communities found on-site during the completed field investigations. Targeted surveys for black ash were not completed within the subject property.

If construction within the area of black ash cannot be avoided, or if the black ash on-site will be impacted by any aspect of the proposed development (e.g. killed, harmed or taken), a black ash health assessment and consultation with the Ministry of Environment, Conservation and Parks (MECP) would be required to determine next steps for the project.

Based on the development concept, as illustrated on Figures A.5 and A.6, the proposed subdivision development will require the removal of all black ash identified within the subject

property. AS such a black ash health assessment will be required and depending on the results of the heath assessment, further consultation with the MECP will be required to determine compensation requirements if heathy black ash will be impacted by the proposed development.

## **6.5 Environmental Protection Area**

As identified on Schedule A of the Clarence Rockland Urban Area Official Plan (2021), an area identified as Environmental Protection Area is located within the subject property. This area is associated with the tributary to Clarence Creek that flows southeast from within the subject property onto adjacent properties. This feature is described in more detail in the document, Amendment Number 13 to the Official Plan of the Urban Area of the City of Clarence-Rockland (Clarence-Rockland 2019). Development within features designated as Environmental Protection Area are restricted to maintain water quality to Clarence Creek. As identified in this document, an application for a Plan of Subdivision requires an EIS to confirm that there will be no negative impacts on the creek.

The proposed subdivision plan will result in the removal of all areas identified as Environmental Protection within the subject property, including direct impacts to the tributary to Clarence Creek.

Additional indirect impacts to features that are connected downstream and are located adjacent to the subject property are primarily associated with changes to the surface water and groundwater water balance through increased storm water runoff resulting from an increase in the impervious surface area, encroachment resulting in compaction of soils and vegetation loss, decreased groundwater recharge resulting from reduced upland infiltration capacity, and potentially increased nutrient loading to adjacent surface water features.

## **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 forest and wetland habitat, primarily for avian and amphibian 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 moderate as the current, existing land use in the surrounding project area is primarily agricultural and natural areas, save for the community of Rockland located directly northwest of the subject property.

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

## 7.0 RECOMMENDED AVOIDANCE AND MITIGATION MEASURES

The following avoidance and mitigation measures have been recommended by GEMTEC 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 and a buffer 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 Local Wetlands

The wetlands within the subject property and study area are identified as locally significant. The proposed subdivision development will result in the loss of all 4.5 ha of the wetland area identified within the subject property. Additional indirect impacts to the wetlands within the study area, connected downstream to those located on the subject property may include increased fragmentation, sedimentation, changes to stormwater inputs, and increased disturbance and increased human-wildlife interactions.

Given the currently proposed plan of subdivision for the subject property, there is little opportunity to reduce direct impacts to the locally significant wetlands within the subject property. To compensate for the loss of wetland habitat required to accommodate the subdivision construction and associated road network, a 4.07 ha stormwater management pond is proposed on the subject property as part of the current site plan (Figure A.6 – Appendix A). It is intended that the proposed SWM would provide compensation with respect to the hydrologic functions of the lost wetland habitat, providing quality and quantity control and maintaining hydrologic outputs to downstream habitat. It is understood that the SWM pond itself is not sufficient to provide adequate compensation for the described loss of wetland habitat associated with wildlife and fish habitat and ecological functions. Additional area is available within the subject property, south of the current limits of development (Figure A.6 – Appendix A) associated with the southern watercourse (Reach 5) and the existing hydro corridor on-site. Creation of wetland compensation habitat in this area will add additional ecological value post-development and will ensure a greater than 1:1 compensation ratio for wetland habitat.

The goal of the wetland habitat creation is to mimic the SWTM1 and SWDM3 habitat that is being entirely removed from within the subject property. These communities have a diversity of fern and sedge species. As a component of wetland creation, the salvage and use of the existing soil and native seed bank from these communities to be lost should be used for the creation of wetland habitat for compensation. This will ensure that the habitat that is lost is captured in the compensatory area created. Additional plantings of similar tree and shrub species should be incorporated in clusters within the compensation habitat south of the development footprint and within any riparian areas to provide the framework for eventual succession of the habitat to a swamp community.

To ensure habitat created post-development provides comparable ecological value to what will be lost due to the proposed development, design mitigation measures and additional best management practices have been detailed below.

- To offset the loss of wetland and wetland buffer, compensation of wetland function should be considered through naturalized stormwater design and wetland creation, completed in conjunction with progressive rehabilitation of all buffers to fish bearing habitat.
  - Progressive rehabilitation should include re-establishing tree and shrub vegetation and herbaceous wet meadow vegetation enhanced through retention of seed bank material excavated as part of the development.
- All future development and construction activities within the subject property, 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.
- No in-water work should occur between March 15 and July 15 of any year to protect spawning fish habitat within the development area. All in-water habitat features, including aquatic vegetation, natural woody debris and boulders should be left in their current locations.
- Silt fencing should be installed along all setbacks to provide visual demarcation of the setbacks to prevent machinery encroachment and sediment transport.
- When native soil is exposed, sediment and erosion control work in the form of heavy-duty sediment fencing shall be positioned along the down gradient edge of any construction envelopes adjacent to waterbodies.
- In order to protect adjacent 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 40 m and be contained by heavy-duty silt fencing.
- Maintain as much permeable surface area as possible in future development plans to limit the generation of stormwater runoff.

### 7.1.1 Wetland Compensation Strategy

It is recommended that a wetland compensation and enhancement plan, or similar report, be prepared prior to final site plan approval that provides the details concerning total wetland compensation area, landscape design elements, and planting plans. To demonstrate that the loss of 4.5 ha of local wetland function and values can be offset, the following measures are recommended and should be included, where applicable, in future landscape design and wetland compensation reporting.

- A fish and herptile salvage should be conducted prior to in-filling of any wetland communities and watercourses;
- Native upland vegetation buffer strips should be established between the stormwater management pond and the surrounding vegetation following construction. Upland vegetation buffers will aid in restoration of construction disturbances;
- The periphery of all proposed wetland compensation habitat should be re-vegetated and maintained to provide moist-meadow habitat consisting of native grasses and forb species, trees and shrubs;
- The SWM wetland compensation habitat should be designed and constructed to have relatively flat slopes of 3:1 (max) to 7:1 with irregular shape shorelines and depths within the nearshore areas, while still maintaining a geometry required for hydraulic efficiency;
- Sections of the additional wetland compensation habitat should have sufficient depth to ensure that the water column does not freeze all the way to the bottom in winter (to provide overwintering habitat for turtles);
- Similarly, to offset the loss of the existing wetland drainage channel/watercourse, the wetland compensation habitat should be constructed within natural design principles, such as, varying channel depths, shoreline and aquatic plantings, and placement of in-stream structure;
- The creation of a riparian corridor area surrounding the additional wetland compensation area, south of the current development footprint, should be implemented. This riparian area should contain variable microtopography, including deeper offline wetland pockets;
- The existing native soil and seed bank contained within the wetland community being removed should be used for wetland compensation habitat, south of the currently proposed development footprint;
- Aquatic plantings should include a mix of emergent aquatic vegetation and wet meadow species, including shrub species, to ensure colonization shorelines under various water levels and to provide sufficient cover to offer amphibians protection from predators;
- Considerations should be given to incorporation of logs, rocks, or other in-pond structures to provide basking opportunities for turtles in the spring and fall;
- Within the permanent pool area, shorelines should include hard substrates features such as boulders, woody bundles and basking logs;

- Within any permanent pool, aquatic plantings including a mix of emergent aquatic vegetation and wet meadow species, including shrub species, to ensure colonization shorelines under various water levels and to provide sufficient cover to offer amphibians protection from predators;
- During preliminary construction, organic soils from with the wetland portions of the site to be development should be stripped and retained for top dressing the shoreline of the permanent pool and the surrounding 100-year ponding extents to provide adequate seed bank for germination of wet meadow herbaceous plants;
- The surrounding green space should be well planted with native coniferous and deciduous tree species to provide adequate shade and thermal buffering;
- Similarly, topsoil within the green space should be overseeded with a native pollinator wildflower mix; and
- Plantings of vigorous and robust hydrophilic shrub species such as red osier dogwood and slender willow should be included within the 100-year ponding extents;

## 7.2 Significant Wildlife Habitat

### 7.2.1 Confirmed Woodland Amphibian Breeding Habitat

In accordance with the Significant Wildlife Habitat Mitigation Support Tool (OMNRF, 2014), for large areas of significant wildlife habitat, when complete avoidance is not possible, minimizing the amount of habitat affected may be a satisfactory mitigation measures (i.e., make the development footprint as small as possible, confine development along the edge of the habitat and ensure that it doesn't change wetland water quality or quantity). Furthermore, mitigating loss of forest cover to ensure it remains intact around the breeding wetland allows for maintenance of travel corridors into and out of breeding wetlands.

Confirmed woodland amphibian breeding habitat was identified within the subject property associated with the swamp wetland communities on-site. The proposed subdivision development will require the complete removal of all confirmed significant amphibian breeding habitat. Mitigation measures presented in Section 7.1 are sufficient to mitigate and/or offset impacts to local wetlands and amphibian breeding habitat on-site.

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).

## 7.2.2 Habitats of Special Concern and Rare Wildlife Species

### 7.2.2.1 Eastern Wood-Pewee, Eastern Whip-poor-will, and Wood Thrush

To protect nesting and foraging eastern wood-pewee, whip-poor-will, 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.

#### 7.2.2.2 Snapping Turtle

Mitigation measures presented in Section 7.1 are sufficient to mitigate and/or offset impacts to potentially present snapping turtle on-site. 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

## 7.3 Fish Habitat

As discussed in Section 4.6, suitable habitat for fish was identified within watercourses located on the subject property. The proposed subdivision plan will require the removal or alteration of all watercourses within the subject property.

When development is unable to avoid impacts resulting in the HADD 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. It is our professional opinion that DFO will require a Fisheries Act authorization as a component of the site works given the scale of impact to identified fish habitat. A DFO Request for Review (RFR) was submitted on July 21, 2025 to the DFO to start the process of reviewing the site specific impacts to fish and fish habitat, to determine if a Fisheries Authorization is required.

As a component of a Fisheries Act permit authorization, DFO will require mitigation and compensation measures outlined in any issued permits to be completed by the proponent prior to development. Measures may include, but are not limited to, fish habitat creation and/or enhancement, long term monitoring of created habitat, and additional mitigation measures for potential indirect impacts. The area of the subject property, south of the current development footprint that has been discussed in Section 7.1, can be used for the creation of additional fish habitat area. This will be discussed as a component of Fisheries Act approvals with DFO. All approvals and requirement issued by DFO should be in place prior to site works and followed during all stages of the proposed development.

## **7.4 Species at Risk**

### **7.4.1 SAR Bats**

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 (less than 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.

### **7.4.2 Black Ash**

Black ash stems were incidentally identified within the subject property, associated with the wetland communities, during completed field investigation efforts. No formal black ash health assessment or targeted assessment to determine the total number of stems within the subject property have been completed at this time. As the project is unable to avoid construction, damage, disturbance or destruction within areas containing black ash on-site, a formal black ash health assessment is recommended to be completed by a qualified black ash assessor, prior to the removal of any wetland habitat on-site. The black ash health assessment is required to be submitted to the MECP prior to any site alterations within the area of any individual black ash tree.

All healthy black ash trees on-site, as identified through a black ash health assessment, are to receive a defined setback. Should development be unable to avoid disturbance of a prescribed setback for the protection of healthy black ash, additional permitting may be required.

## **7.5 Environmental Protection Area (EPA)**

The EPA is associated with the local wetland community and the tributary of Clarence Creek. The proposed subdivision development will result in the removal of the EPA from the subject property.

Given the currently proposed plan of subdivision for the subject property, there is little opportunity to reduce direct impacts to the EPA within the subject property. The compensation and mitigation measures described in Section 7.1 relating to locally significant wetland impacts will also ensure that the function of the EPA is provided post-development and that indirect impacts are mitigated.

## **7.6 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 - November 30 to avoid the key breeding bird period and bat summer active season. The timing windows provides protection of migratory birds, roosting bats and avoids contravention of the Migratory Bird Convention Act and Endangered Species Act. If vegetation clearing activities must take place during the timing window than a nest and roost survey shall be conducted by a qualified professional.
- Installation of silt fence barriers around the entire construction envelope to prohibit the emigration of wildlife into the construction 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.
- Perform daily pre-work sweeps of the construction area to ensure no SAR are present and to remove any wildlife from inside the construction area.
- Should any SAR be discovered throughout the course of the proposed works, the species at risk biologist with the local MECP district should be contacted immediately and operations modified to avoid any negative impacts to SAR or their habitat until further direction is provided by the MECP.

## **7.7 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;

- Maintain as much permeable surface as possible in future development plans to minimize the generation of stormwater runoff.
- Silt fencing should be installed along all setbacks to provide visual demarcation of the setbacks and to prevent machinery encroachment and sediment transport.
- Erosion and sediment control measures should be maintained until all disturbed ground has been permanently stabilized.
- In an 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 red oak.

## 8.0 CONCLUSIONS

The proposed project supported by this EIS is for the development of a 113 ha property located on Part Lots 21, 22, and 23, Concession 2 (Old Survey), Township of Clarence-Rockland, United Counties of Prescott-Russell, Ontario. The proposed subdivision application would see the creation of low, medium and high density residential blocks, parkland, commercial zones, community zones, and an on-site stormwater management facility.

Based on the results of the impact analysis, impacts to the natural environment features within the subject property are anticipated to be moderate to significant, due to the complete removal of some features including locally significant wetlands and fish habitat. Provided that compensation measures for directly impacted natural heritage features that cannot be avoided are implemented post-development and mitigation measures recommended in Section 7 are implemented as proposed, no significant residual negative impacts are anticipated from the proposed future development to adjacent natural features.

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

## 9.0 LIMITATION OF LIABILITY

This report and the work referred to within it have been undertaken by GEMTEC Consulting Engineers and Scientists Limited (GEMTEC) and prepared for Lascelles Engineering and Associates Ltd. and is intended for the exclusive use of Lascelles Engineering and Associates Ltd.. This report may not be relied upon by any other person or entity without the express written consent of GEMTEC, or Lascelles Engineering and Associates Ltd.. 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,



Zachary Anderson, B.Sc., CAN-CISEC  
Biologist



Taylor Warrington, B.Sc.  
Biologist

## 10.0 REFERENCES

Cadman M.D., D.A. Sutherland, G.G. Beck, D. Lepage, and A.R. Couturier. 2007. Atlas of the Breeding Birds of Ontario, 2001-2005. Bird Studies Canada, Environment Canada, Ontario Field Ornithologists, Ontario Ministry of Natural Resources, and Ontario Nature. Toronto.

Canada, Government of (Canada). 1985. Fisheries Act. R.S.C. 1985, c. F-14.

Chapman, L.J., and Putnam, D.F. 1984. The Physiography of Southern Ontario. Ontario Geological Survey, Special Volume 2.

COSEWIC. 2023. COSEWIC assessment and status report on the Hoary Bat *Lasiurus cinereus*, Eastern Red Bat *Lasiurus borealis* and Silver-haired Bat, *Lasionycteris noctivagans*, in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. xxi + 100 pp.

COSEWIC. 2013. COSEWIC assessment and status report on the Little Brown Myotis *Myotis lucifugus*, Northern Myotis *Myotis septentrionalis* and Tri-coloured Bat *Perimyotis subflavus* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. xxiv + 93 pp.

COSEWIC. 2012. COSEWIC assessment and status report on the Eastern Wood-Pewee *Contopus virens* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. ix + 39 pp.

COSEWIC. 2011. COSEWIC assessment and status report on the Eastern Meadowlark *Sturnella magna* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. x + 40 pp.

COSEWIC. 2010. COSEWIC assessment and status report on the Bobolink *Dolichonyx oryivorus* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. vi + 42 pp.

Crins, J., William., P. A. Grey, P. W. Uhlig, and M.C. Wester. 2009. The Ecosystems of Ontario, Part I: Ecozones and Ecoregions. Ontario Ministry of Natural Resources, Peterborough, Ontario.

Department of Fisheries and Oceans (DFO). 2019. Aquatic Species at Risk Map. Viewed online: May 2025. Available online: <http://www.dfo-mpo.gc.ca/species-especes/sara-lep/map-carte/index-eng.html>

Dobbyn, J.S. 1994. Atlas of the Mammals of Ontario. Federation of Ontario Naturalists, Toronto.

Fraser E., MacKenzie, A., and Davy, C. 2007. Photo Field Guide to the Bats of Ontario. Published by St. Thomas Field Naturalists Club Incorporated.

Humphrey, C. 2017. Recovery Strategy for the Eastern Small-footed Myotis (*Myotis leibii*) in Ontario. Ontario Recovery Strategy Series. Prepared for the Ontario Ministry of Natural Resources and Forestry, Peterborough, Ontario. Vii + 76 pp.

Lee, H. T. 2008. Draft Southern Ontario Ecological Land Classification. Ministry of Natural Resources: London, Ontario.

Oldham, M.J and W.F. Weller. 2000. Ontario Herpetofaunal Atlas.

Ontario, Government of (Ontario). 2019a. Eastern small-footed Myotis. Viewed online: May 2025. Available online: <https://www.ontario.ca/page/eastern-small-footed-myotis>

Ontario, Government of (Ontario). 2019b. Little Brown Myotis. Viewed online: May 2025. Available online: <https://www.ontario.ca/page/little-brown-myotis>

Ontario, Government of (Ontario). 2019c. Northern Myotis. Viewed online: May 2025. Available online: <https://www.ontario.ca/page/northern-myotis>

Ontario, Government of (Ontario). 1990. Conservation Authorities Act. R.S.O. 1990. Chapter C.27. Last amendment: 2011, C.9 Sched. 27, S. 22.

Ontario Legislative Assembly. 2007. Endangered Species Act.

Ontario Ministry of Municipal Affairs and Housing (MMAH). 2024. Provincial Planning Statement – Under Planning Act, Toronto. October.

Ontario Ministry of Natural Resources and Forestry (OMNRF). 2018. Natural Heritage Information Request Guide.

Ontario Ministry of Natural Resources and Forestry (OMNRF). 2015a. Aquatic Resource Area (ARA) Line Segment.

Ontario Ministry of Natural Resources and Forestry (OMNRF). 2015b. Significant Wildlife Habitat Ecoregion 6E Criterion Schedules.

Ontario Ministry of Natural Resources and Forestry (OMNRF). 2014a. Make a Map: Natural Heritage Areas.

Ontario Ministry of Natural Resources and Forestry (OMNRF). 2014b. Significant Wildlife Habitat Mitigation Support Tool.

Ontario Ministry of Natural Resources and Forestry (OMNRF). 2013. Natural Heritage Information Centre (NHIC) Biodiversity Explorer.

Ontario Ministry of Natural Resources (OMNR). 2011a. Bats and Bat Habitats Guidelines for Wind Power Projects. Second Edition.

Ontario Ministry of Natural Resources and Forestry (OMNRF). 2011b. Land Information Ontario (LIO).

Ontario Ministry of Natural Resources (OMNR). March 2010. Natural Heritage Reference Manual for Natural Heritage Policies of the Provincial Planning Statement, 2005. Second Edition.

Ontario Ministry of Natural Resources (OMNR). 2005 Natural Heritage Information Centre. Ontario Odonata Atlas.

Ontario Ministry of Natural Resources (OMNR). 2000. Significant Wildlife Technical Guide.

Ontario Geological Survey 2019. Surficial geology of Southern Ontario; Ontario Geological Survey, Miscellaneous Release--Data 128-REV

Ontario Nature, 2019, Ontario Reptile and Amphibian Atlas. Viewed online: Viewed online May 2025. Available online:

<https://www.ontarioinsects.org/herp/index.html?Sort=1&area2=squaresCounties&records=all&myZoom=5&Lat=42.95&Long=-81.01>

Ottawa, City of (Ottawa). 2015. City of Ottawa Protocol for Wildlife Protection During Construction. August 2015. Rowe, J.S. 1972. Forest Regions of Canada. Canadian Forestry Service Publication no. 1300. Publishing Division, Information Canada .

United Counties of Prescott and Russell (UCPR). 2023. Official Plan. September, 2022.

United Counties of Prescott and Russell (UCPR). 2020. A la Carte Mapping. Accessed September, 2023. Available online: <https://alacarte.prescott-russell.on.ca/Html5Viewer/Index.html?Viewer=Public>



## **APPENDIX A**

### Report Figures

Figure A.1 – Site Location

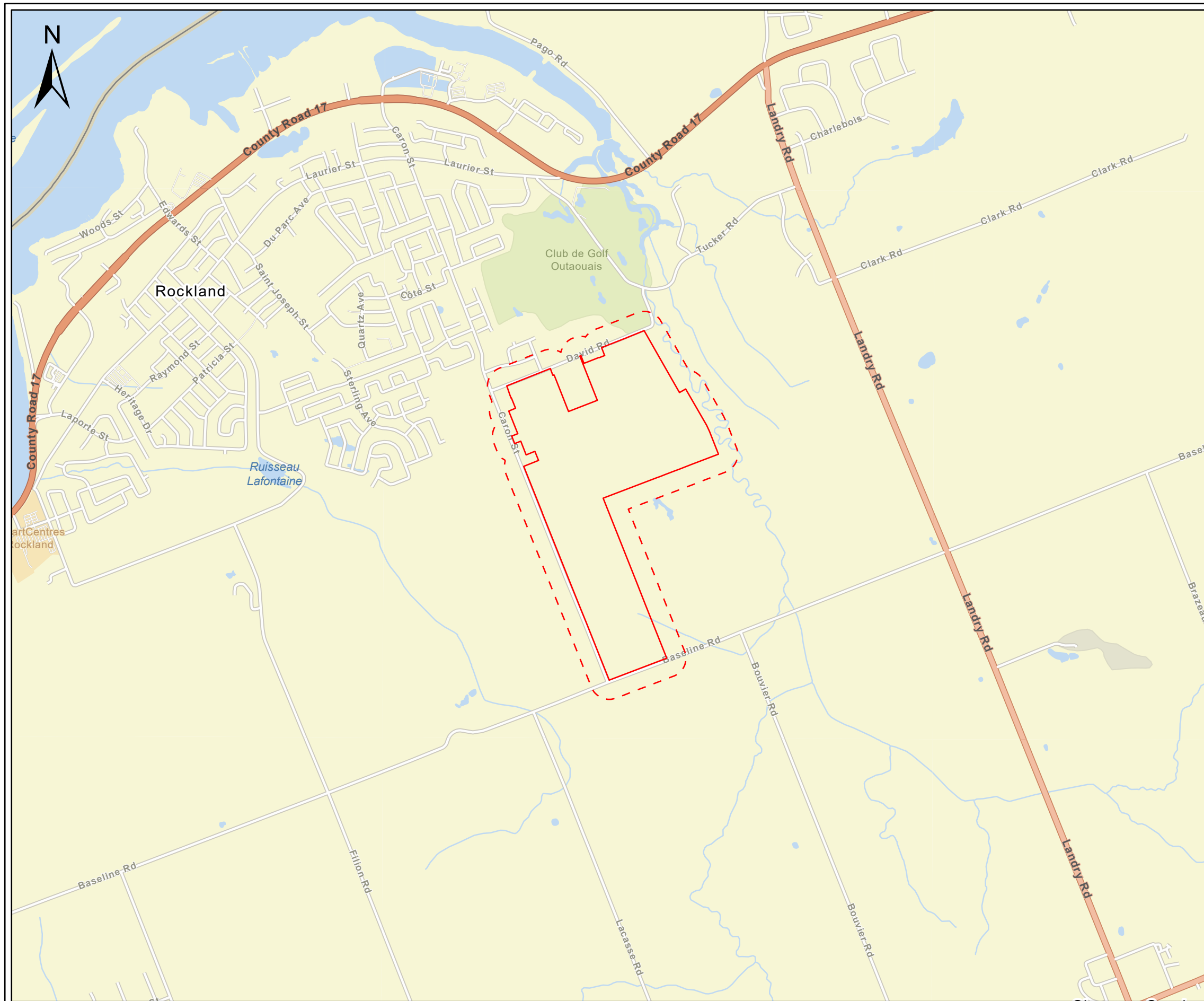
Figure A.2 – Site Layout

Figure A.3 – Vegetation Communities

Figure A.4 – Development Concept

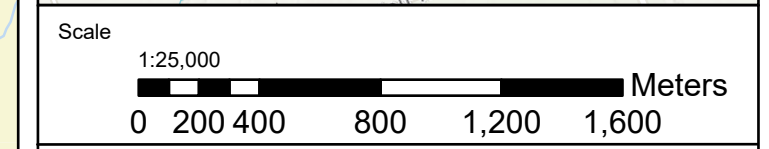
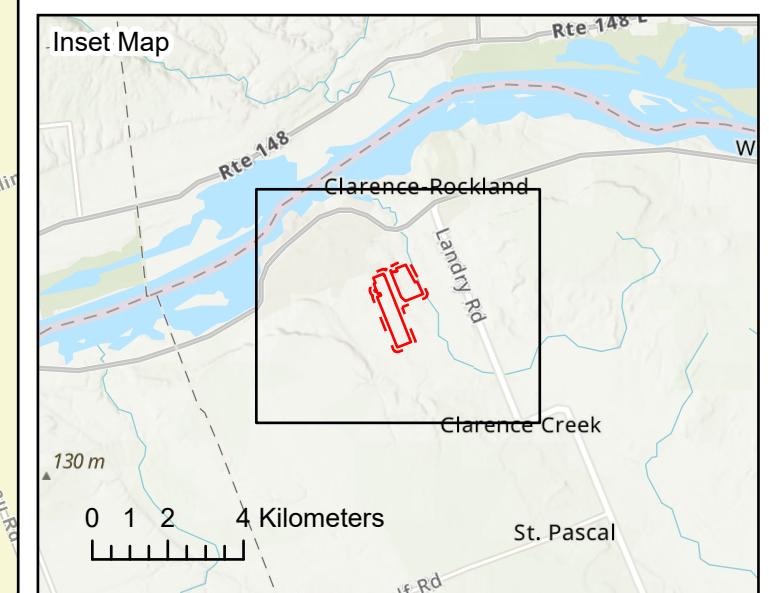
Figure A.5 – Natural Heritage Features

Figure A.6 – Mitigation Measures



**Legend**

- Property Boundary
- Study Area



**GEMTEC**  
CONSULTING ENGINEERS  
AND SCIENTISTS

32 Steacie Drive,  
Ottawa, ON K2K 2A9  
T: (613) 836-1422  
www.gemtec.ca  
ottawa@gemtec.ca

Client: <b>Lascelles Engineering &amp; Associates Ltd.</b>	Project: 100162.027
--	---------------------

Location  
**Part of Lot 21 and 22, Concession 2 (Old Survey)  
 Township of Clarence-Rockland, Ontario**

Drwn By: EP	Chkd By: ZA	<b>Site Location</b>
----------------	----------------	----------------------

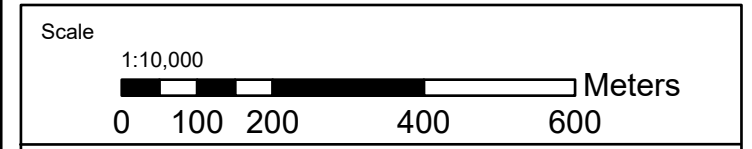
Date: July 2025	Rev. 0	<b>Figure: A.1</b>
-----------------	-----------	--------------------

Coordinate System: NAD 1983 UTM Zone 18N  
 Service Layer Credits: World Street Map: Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community  
 World Topographic Map: Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community



**Legend**

- Property Boundary
- Study Area
- Local Wetland
- Watercourse
- Breeding Bird Survey Location (100m Radius)
- Amphibian Breeding Survey Location (100m Radius)
- Whip-poor-will Breeding Survey Location (300m Radius)
- Fish Survey Location - Fish Captured
- ▲ Fish Survey Location - No Fish Captured



**GEMTEC**  
CONSULTING ENGINEERS  
AND SCIENTISTS

32 Steacie Drive,  
Ottawa, ON K2K 2A9  
T: (613) 836-1422  
www.gemtec.ca  
ottawa@gemtec.ca

Client: <b>Lascelles Engineering &amp; Associates Ltd.</b>	Project: 100162.027
--	---------------------

Location  
Part of Lot 21 and 22, Concession 2 (Old Survey)  
Township of Clarence-Rockland, Ontario

Drwn By: EP	Chkd By: ZA	<b>Survey Locations</b>
----------------	----------------	-------------------------

Date: July 2025	Rev. 0	<b>Figure: A.2</b>
© Queen's Printer for Ontario		

Coordinate System: NAD 1983 UTM Zone 18N  
Service Layer Credits: World Topographic Map: Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community  
World Imagery: Maxar



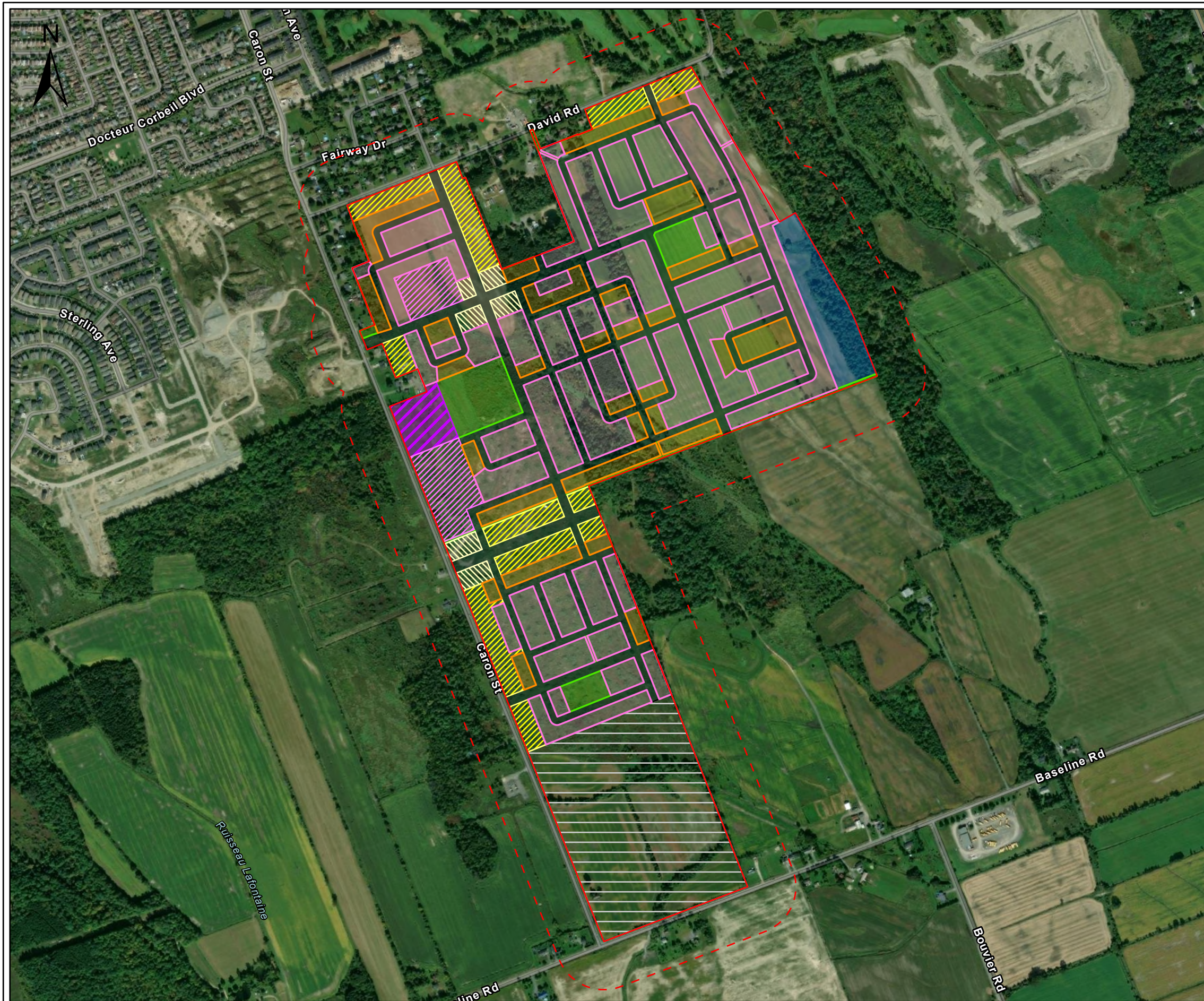
**Legend**

- Property Boundary
- Study Area
- Local Wetland
- Watercourse
- Vegetation Community

CU = Cultural (Clear-cut)  
 CUM = Cultural Meadow  
 CVR\_4 = Rural Property  
 FOCM6 = Naturalized Coniferous Plantation  
 FOCM6-2 = Dry-Fresh Red Pine Naturalized Coniferous Plantation  
 FOD = Deciduous Forest  
 FOM = Mixed Forest  
 FOMM2 = Dry-Fresh White Pine-Hardwood Mixed Forest  
 OAGM1 = Annual Row Crops  
 SWDM3 = Maple Mineral Deciduous Swamp  
 SWTM1 = Alder Mineral Deciduous Thicket Swamp

Scale	
1:10,000	
32 Steacie Drive, Ottawa, ON K2K 2A9 T: (613) 836-1422 www.gemtec.ca ottawa@gemtec.ca	
Client: <b>Lascelles Engineering &amp; Associates Ltd.</b>	Project: 100162.027
Location Part of Lot 21 and 22, Concession 2 (Old Survey) Township of Clarence-Rockland, Ontario	
Drwn By: EP	Chkd By: ZA
<b>Vegetation Communities</b>	
Date: July 2025	Rev. 0
© Queen's Printer for Ontario	<b>Figure: A.3</b>

Coordinate System: NAD 1983 UTM Zone 18N  
 Service Layer Credits: World Topographic Map: Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community  
 World Imagery: Maxar



### Legend

- Property Boundary
- Study Area

### Proposed Development Concept

- Low-Density Residential
- Medium Density Residential
- High-Density - Residential
- High Density - Mixed Use
- Commercial Block
- Community Facilities
- Parkland
- Stormwater Management Pond
- Road
- Future Development

Scale	
1:10,000	Meters
0 100 200 400 600	

**GEMTEC**  
CONSULTING ENGINEERS  
AND SCIENTISTS

32 Steacie Drive,  
Ottawa, ON K2K 2A9  
T: (613) 836-1422  
www.gemtec.ca  
ottawa@gemtec.ca



Client: <b>Lascelles Engineering &amp; Associates Ltd.</b>	Project: 100162.027	
Location Part of Lot 21 and 22, Concession 2 (Old Survey) Township of Clarence-Rockland, Ontario		
Drwn By: EP	Chkd By: ZA	<b>Development Concept</b>
Date: July 2025	Rev. 0	<b>Figure: A.4</b>
© Queen's Printer for Ontario		

Coordinate System: NAD 1983 UTM Zone 18N  
 Service Layer Credits: World Topographic Map: Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community  
 World Imagery: Maxar



### Legend

- Property Boundary
- Study Area
- Local Wetland
- Watercourse
- Proposed Development Concept
- Black Ash Occurrence

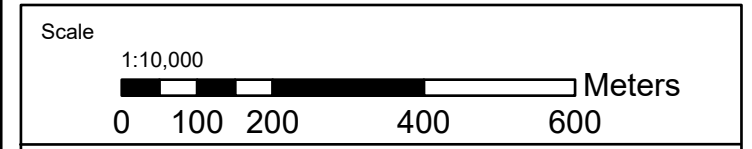
Scale		1:10,000	
		Meters	
		32 Steacie Drive, Ottawa, ON K2K 2A9 T: (613) 836-1422 www.gemtec.ca ottawa@gemtec.ca	
Client: <b>Lascelles Engineering &amp; Associates Ltd.</b>		Project: 100162.027	
Location <b>Part of Lot 21 and 22, Concession 2 (Old Survey)</b> <b>Township of Clarence-Rockland, Ontario</b>			
Drwn By: EP	Chkd By: ZA	<b>Natural Heritage Features</b>	
Date: July 2025		Rev. 0	<b>Figure: A.5</b>
© Queen's Printer for Ontario			

Coordinate System: NAD 1983 UTM Zone 18N  
 Service Layer Credits: World Topographic Map: Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community  
 World Imagery: Maxar



### Legend

- Property Boundary
- Study Area
- Local Wetland - To Be Lost (4.47 ha)
- Watercourse
- Proposed Development Concept
- Black Ash Occurrence
- Stormwater Management Pond - To Be Created (4.07 ha)
- Candidate Wetland Compensation Area (2.49 ha)



**GEMTEC**  
CONSULTING ENGINEERS  
AND SCIENTISTS

32 Steacie Drive,  
Ottawa, ON K2K 2A9  
T: (613) 836-1422  
www.gemtec.ca  
ottawa@gemtec.ca

Client: <b>Lascelles Engineering &amp; Associates Ltd.</b>	Project: 100162.027
--	---------------------

Location  
**Part of Lot 21 and 22, Concession 2 (Old Survey)  
Township of Clarence-Rockland, Ontario**

Drwn By: EP	Chkd By: ZA	<b>Mitigation Measures</b>
----------------	----------------	----------------------------

Date: July 2025	Rev. 0	<b>Figure: A.6</b>
-----------------	-----------	--------------------

Coordinate System: NAD 1983 UTM Zone 18N  
Service Layer Credits: World Topographic Map: Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community  
World Imagery: Maxar



## **APPENDIX B**

Site Photographs



Site Photograph 1 – View of the northwestern most section of the subject property



Site Photograph 2 – View of the Cultural (CU) – clear cut area on the western property boundary



Site Photograph 3 – View of the Cultural (CU) – clear cut area on the western property boundary



Site Photograph 4 – View of the central wetland area associated with the Clarence Creek tributary



Site Photograph 5 – View of the central tributary feature flowing southeast on the subject property



Site Photograph 6 – View of the central tributary feature flowing southeast on the subject property



Site Photograph 7 – View of access pathway associated with the FOCM6-2 community



Site Photograph 8 – View of northeastern tributary associated with OAGM1 and FOD communities



Site Photograph 9 – View looking west across the OAGM1 community



Site Photograph 10 – Additional view of the existing OAGM1 community



Site Photograph 11 – Eastern tributary flowing alongside the FOD community



Site Photograph 12 – Additional view of the northeast tributary of Clarence Creek



## **APPENDIX C**

Report Summary Tables

**TABLE C.1  
SUMMARY OF WILDLIFE OBSERVED ON-SITE AND ADJACENT TO SITE**

Common Name	Scientific Name	S-Rank	Evidence
<b>Avian Species</b>			
Alder Flycatcher	<i>Empidonax alnorum</i>	S5B	Heard calling
American Bittern	<i>Botaurus lentiginosus</i>	S5B	Observed on-site
American Crow	<i>Corvus brachyrhynchos</i>	S5	Heard calling, observed on-site
American Goldfinch	<i>Spinus tristis</i>	S5	Heard calling, observed on-site
American Redstart	<i>Setophaga ruticilla</i>	S5B	Heard calling
American Robin	<i>Turdus migratorius</i>	S5	Heard calling, observed on-site
American Woodcock	<i>Scolopax minor</i>	S4B	Heard calling
Bald Eagle	<i>Haliaeetus leucocephalus</i>	S4	Observed on-site
Baltimore Oriole	<i>Icterus galbula</i>	S4B	Heard calling
Black-and-white Warbler	<i>Mniotilta varia</i>	S5B	Heard calling
Black-capped Chickadee	<i>Poecile atricapillus</i>	S5	Heard calling
Blue Jay	<i>Cyanocitta cristata</i>	S5	Heard calling, observed on-site
Brown-headed Cowbird	<i>Molothrus ater</i>	S5	Heard calling
Cedar Waxwing	<i>Bombycilla cedrorum</i>	S5	Heard calling
Chestnut-sided Warbler	<i>Setophaga pensylvanica</i>	S5B	Heard calling
Chipping Sparrow	<i>Spizella passerina</i>	S5B,S3N	Heard calling
Common Grackle	<i>Quiscalus quiscula</i>	S5	Heard calling, observed on-site
Common Yellowthroat	<i>Geothlypis trichas</i>	S5B,S3N	Heard calling
Downy Woodpecker	<i>Dryobates pubescens</i>	S5	Head calling
Eastern Kingbird	<i>Tyrannus tyrannus</i>	S4B	Heard calling
Eastern Phoebe	<i>Sayornis phoebe</i>	S5B	Heard calling
Eastern Whip-Poor-Will	<i>Antrostomus vociferus</i>	S4B	Heard calling, observed on-site
Eastern Wood-Pewee	<i>Contopus virens</i>	S4B	Heard calling
European Starling	<i>Sturnus vulgaris</i>	SNA	Heard calling, observed on-site
Gray Catbird	<i>Dumetella carolinensis</i>	S5B,S3N	Heard calling
Great Crested Flycatcher	<i>Myiarchus crinitus</i>	S5B	Heard calling
Green Heron	<i>Butorides virescens</i>	S4B	Heard calling, observed on-site
Hairy Woodpecker	<i>Dryobates villosus</i>	S5	Heard calling
House Wren	<i>Troglodytes aedon</i>	S5B	Heard calling
Indigo Bunting	<i>Passerina cyanea</i>	S5B	Heard calling
Killdeer	<i>Charadrius vociferus</i>	S4B	Heard calling, observed on-site
Magnolia Warbler	<i>Setophaga magnolia</i>	S5B	Heard calling
Mallard	<i>Anas platyrhynchos</i>	S5	Observed on-site
Marsh Wren	<i>Cistothorus palustris</i>	S4B,S3N	Heard calling
Mourning Dove	<i>Zenaida macroura</i>	S5	Heard calling
Northern Cardinal	<i>Cardinalis cardinalis</i>	S5	Heard calling, observed on-site
Northern Flicker	<i>Colaptes auratus</i>	S5	Heard calling
Ovenbird	<i>Seiurus aurocapilla</i>	S5B	Heard calling
Red-eyed Vireo	<i>Vireo olivaceus</i>	S5B	Heard calling
Red-winged Blackbird	<i>Agelaius phoeniceus</i>	S5	Heard calling, observed on-site
Rose-breasted Grosbeak	<i>Pheucticus ludovicianus</i>	S5B	Heard calling
Ruffed Grouse	<i>Bonasa umbellus</i>	S5	Heard calling, observed on-site
Song Sparrow	<i>Melospiza melodia</i>	S5	Heard calling, observed on-site
Spotted Sandpiper	<i>Actitis macularius</i>	S5B	Observed on-site
Swamp Sparrow	<i>Melospiza georgiana</i>	S5B,S4N	Heard calling
Tree Swallow	<i>Tachycineta bicolor</i>	S4S5B	Observed on-site
Turkey Vulture	<i>Cathartes aura</i>	S5B,S3N	Observed on-site
Veery	<i>Catharus fuscescens</i>	S5B	Heard calling
White-crowned Sparrow	<i>Zonotrichia leucophrys</i>	S5B,S3N	Heard calling
White-throated Sparrow	<i>Zonotrichia albicollis</i>	S5	Heard calling
Wild Turkey	<i>Meleagris gallopavo</i>	S5	Observed on-site
Wilson's Snipe	<i>Gallinago delicata</i>	S5B	Heard calling
Wood Thrush	<i>Hylocichla mustelina</i>	S4B	Heard calling

**TABLE C.1**  
**SUMMARY OF WILDLIFE OBSERVED ON-SITE AND ADJACENT TO SITE**

Yellow Warbler	<i>Setophaga petechia</i>	S5B	Heard calling
<b>Amphibian Species</b>			
American Toad	<i>Anaxyrus americanus</i>	S5	Heard calling
Gray Treefrog	<i>Dryophytes versicolor</i>	S5	Heard calling
Green Frog	<i>Lithobates clamitans</i>	S5	Heard calling
Spring Peeper	<i>Pseudacris crucifer</i>	S5	Heard calling
<b>Mammalian Species</b>			
Hoary Bat	<i>Lasiurus cinereus</i>	S4	Detected using handheld ultrasonic module
Muskrat	<i>Ondatra zibethicus</i>	S5	Observed on-site
Striped skunk	<i>Mephitis mephitis</i>	S5	Observed on-site
White-tailed Deer	<i>Odocoileus virginianus</i>	S5	Tracks observed on-site
<b>Fish Species</b>			
Bluntnose minnow	<i>Pimephales notatus</i>	S5	
Brook Stickleback	<i>Culaea inconstans</i>	S5	Observed on-site
Creek Chub	<i>Semotilus atromaculatus</i>	S5	Observed on-site
Fathead Minnow	<i>Pimephales promelas</i>	S5	Observed on-site
Fathead Minnow	<i>Pimephales promelas</i>	S5	Observed on-site (rosy red colour variant)

**Notes:**

**TABLE C.2  
SCREENING RATIONAL FOR SIGNIFICANT WOODLANDS**

<b>Woodland Criteria</b>	<b>Further Considered in EIS</b>	<b>Rationale</b>
Woodland Size	No	Contiguous woodlands on-site do not meet the minimum size requirement for the planning area (> 20 ha).
Ecological Functions		
a) Woodland Interior	No	Interior contiguous woodlands on-site do not meet the minimum size requirement for the planning area (> 2 ha).
b) Proximity	No	Woodlands on-site are proximal to fish habitat, however, woodlands do not meet minimum size threshold.
c) Linkages	No	The woodlands on-site do not provide linkages to other natural heritage features.
d) Water Protection	No	Woodlands on-site are proximate to sensitive fish habitat, however, woodlands are unlikely providing benefit to fish habitat and do not meet minimum size threshold requirements.
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 C.3  
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 terrestrial habitat located on-site or within the study area. No historical records indicate presence of habitat. No indicator species observed during field investigations.
Shorebird Migratory Stopover Area	No	Shorebird stopover sites are typically well-known and have a long history of use. The site does not contain suitable shoreline habitat for shorebird foraging.
Raptor Wintering Area	No	Upland habitat present on-site does not meet requirements as it is an active agricultural field. Suitable forest habitat may be located in study area, off site.
Bat Hibernacula	No	Cave and crevice habitat is not present on-site or within the study area.
Bat Maternity Colonies	Yes	Woodlands on-site have the potential to meet the minimum snag density (>10 snags/hectare) requirement to be considered SWH for bat maternity colonies.
Turtle Wintering Area	Yes	Suitable aquatic habitat with adequate water depth are not present on-site. Extension of watercourse into study area may provide sufficient depths to support overwintering habitat. No indicator species observed during field investigations.
Reptile Hibernaculum	No	Structures such as large rock piles, bedrock outcrops, crevices or other karstic features were not identified on-site.
Colonial Bird Nesting Habitat	No	No suitable habitat located on-site or within the study area to support colonial bird nesting.
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 stands of coniferous woodlands are not present on-site or within the study area. As outlined in the the Significant Wildlife Habitat Criteria Schedules (OMNRF, 2015) winter deer yards and deer management are an MNRF responsibility. Based on review of publically 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.

**TABLE C.4  
SCREENING RATIONALE FOR SPECIALIZED WILDLIFE HABITATS**

Specialized Wildlife Habitat	Further Considered in EIS	Rationale
Waterfowl Nesting Area	No	No upland habitat adjacent to suitable wetland habitat is present on-site.
Bald Eagle and Osprey Nesting, Foraging and Perching Habitat	No	Suitable forest habitats not adjacent to suitable riparian or open aquatic habitats.
Woodland Nesting Raptor Habitat	No	Nesting may occur in any ecosite and species preference is towards mature forest stands >30 ha with >10 ha of interior habitat with a 200 m buffer. Suitable habitat not present on-site. No stick nests observed on-site.
Turtle Nesting Habitat	No	Suitable habitat (exposed mineral soil with minimal vegetation cover) not present adjacent to suitable aquatic habitats.
Seeps and Springs	No	No seeps or springs are present on-site.
Woodland Amphibian Breeding Habitat	Yes	Suitable wetland habitat adjacent to a woodland occurs on-site to support woodland amphibian breeding habitat.
Wetland Amphibian Breeding Habitat	No	No suitable wetland occurs on-site to support wetland amphibian breeding habitat.
Woodland Area-Sensitive Bird Breeding Habitat	No	Woodland area-sensitive birds require interior forest habitat located >200 m from the forest edge in large (>30 ha) forest stands. Woodlands on-site and adjacent to the site do not meet the defining criteria.

**TABLE C.5  
SCREENING RATIONALE FOR SPECIALIZED WILDLIFE HABITATS**

General Habitats of Species of Conservation Concern	Further Considered in EIS	Rationale
Marsh Breeding Bird Habitat	No	No suitable marsh habitat is present on-site to support marsh breeding bird habitat.
Open Country Breeding Bird Habitat	No	No suitable meadow habitat on-site to support open country bird breeding due to recent (< 5 years) disturbances.
Shrub/Early Successional Breeding Bird Habitat	No	Candidate early successional breeding bird habitat typically includes fallow fields transitioning to early successional forest habitats that are > 10 ha but have not been actively used for farming. No suitable habitat is present on-site.
Terrestrial Crayfish Habitat	No	Terrestrial crayfish are only found within southwestern Ontario (MNRF, 2012).
Special Concern and Rare Wildlife Species	Yes	The following species of special concern were identified on-site during the site investigations: eastern wood-pewee, eastern-whip-poor-will, and wood thrush. Occurrence data from the NHIC also indicates the following species of special concern to have occurred on-site and/or the surrounding area: snapping turtle.

**TABLE C.6**  
**SCREENING RATIONALE FOR HABITATS OF SPECIES OF CONSERVATION CONCERN**

<b>General Habitats of Species of Conservation Concern</b>	<b>Further Considered in EIS</b>	<b>Rationale</b>
Amphibian Movement Corridor	No	No wetland amphibian breeding corridor habitat has been identified on-site.
Deer Movement Corridor	No	No winter deer yards have been identified on-site by the OMNRF.

**TABLE C.7  
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>				
Bank Swallow	Threatened	Colonial nester, burrows in eroding silt, to sand banks, sand pit walls, etc.	Low	Suitable verticle faces of sand desopits were not observed on-site or within study area. Species not observed during field visit. No historical occurrence records for species.
Barn Swallow	Special Concern	Nests in barns and other semi-open structures. Forages over open fields and meadows.	Low	Suitable nesting habitat not present on-site. Species observed on-site during visit. No historical occurrence records for species.
Bobolink	Threatened	Nests in dense tall grass fields and meadows, low tolerance for woody vegetation.	Low	NHIC indicates species within 1km of site. However, no suitable grassland habitat is available on-site or within study area.
Canada Warbler	Special Concern	Prefers wet forests with dense shrub layers	Low	Suitable forest habitat not present on-site or study area. No historical records for species.
Cerulean Warbler	Threatened	Prefers mature deciduous forest habitat.	Low	Suitable forest habitat not present on-site or study area. No historical records for species.
Chimney Swift	Threatened	Nests in traditional-style open brick chimneys.	Low	Suitable nesting structures may be present within the broader study area. Species not observed on-site. No historical occurrence records.
Common Nighthawk	Special Concern	Nests in a variety of open sites: beaches, fields and grave rooftops.	Low	Suitable habitat not present on-site or study area.
Eastern Meadowlark	Threatened	Nests and forages in dense tall grass fields and meadows, higher tolerance to woody vegetation.	Low	NHIC indicates species within 1km of site. However, no suitable grassland habitat is available on-site or within study area.
Eastern Whip-poor-will	Special Concern	Nests on the ground in open deciduous or mixed woodlands with little underbrush, and bedrock outcrops.	High	Woodlands on-site may provide suitable habitat conditions for eastern whip-poor-will. Species observed during field investigations.
Eastern Wood-Pewee	Special Concern	Woodland species, often found near clearings and edge habitat.	High	Suitable woodland habitats may be present on-site or study area. Species observed during field investigation.
Evening Grosbeak	Special Concern	Nests in trees or large shrubs, preference to large coniferous forests, will use deciduous. Overwinters in Ottawa.	Low	Suitable habitat not present on-site or study area. Species not observed during investigation. No occurrence record for species.
Golden Eagle	Endangered	Nests on remote, bedrock cliffs, overlooking large burns, lakes or tundras	Low	Suitable habitat not present on-site or study area. Species not observed during investigation. No occurrence record for species.
Golden-winged Warbler	Special Concern	Ground nesting, edge species. Breeds in successional scrub habitats surrounded by forests.	Low	Suitable habitat not present on-site or study area. Species not observed during investigation. No occurrence record for species.
Grasshopper Sparrow	Special Concern	Ground-nesting grassland species. Prefers fields with low sparse vegetation on sand, alvars or poor soils.	Low	Suitable habitat not present on-site or study area. Species not observed during investigation. No occurrence record for species.
Henslow's Sparrow	Endangered	Prefers open, moist, tallgrass fields.	Low	Suitable habitat not present on-site or study area. Species not observed during investigation. No occurrence record for species.
Least Bittern	Threatened	Prefers marshes, shrub swamps, usually near cattails	Moderate	Suitable habitat not present on-site but may be present in study area adjacent to site. Species not observed during investigation. NHIC online database indicates species present within 1km of site.
Lesser Yellowlegs	Threatened	Ottawa Migrant. Breeding is limited to Alaska and northern Canada. During winter and migration usess coastal salt marshes, estuaries and ponds, lakes, freshwater wetlands, anthropogenic wetlands.	Low	Suitable habitat not present on-site or study area. Species not observed during investigation. No occurrence record for species.
Loggerhead Shrike	Endangered	Prefers grazed pastures with short grass and scattered shrubs, especially hawthorn.	Low	Suitable habitat not present on-site or study area. Species not observed during investigation. No occurrence record for species.
Olive-sided Flycatcher	Special Concern	Forest edge species, forages in open areas from high vantage points in trees.	Low	Suitable habitat not present on-site or study area. Species not observed during investigation. No occurrence record for species.
Peregrine Falcon	Special Concern	Nests on cliffs near water and on more anthropogenic structures such as tall buildings, bridges, and smokestacks.	Low	Suitable habitat not present on-site or study area. Species not observed during investigation. No occurrence record for species.
Red-headed Woodpecker	Threatened	Prefers open deciduous woodlands, particularly those dominated by oak and beech.	Low	Suitable habitat not present on-site or study area. Species not observed during investigation. No occurrence record for species.
Rusty Blackbird	Special Concern	Wet wooded or shrubby areas (nests at edges of Boreal wetlands)	Low	Suitable habitat not present on-site or study area. Species not observed during investigation. No occurrence record for species.
Short-eared Owl	Threatened	Ground nester, prefers open habitats, fields and marshes.	Low	Suitable habitat not present on-site or study area. Species not observed during investigation. No occurrence record for species.
Wood Thrush	Special Concern	Prefers deciduous or mixed woodlands.	Hlgh	NHIC indicates species within 1km of site. Suitable woodland habitats may be present on-site. Species observed during field investigation.
<b>Mammalian</b>				

**TABLE C.7  
SCREENING RATIONALE FOR POTENTIAL SPECIES AT RISK ON-SITE OR WITHIN STUDY AREA**

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 may meet bat maternity colony requirements and 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 may meet bat maternity colony requirements and 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.	Moderate	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 may meet bat maternity colony requirements and 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.	Low	Suitable aquatic habitat not present on-site or study area. Species not observed during investigations. No historic occurrence records for species.
Eastern Musk Turtle	Special Concern	Wetlands. Highly aquatic habitats.	Low	Suitable aquatic habitat not present on-site or study area. Species not observed during investigations. No historic occurrence records for species.
Eastern Ribbonsnake	Special Concern	Marshy edges of wetlands and watercourses.	Low	Suitable aquatic edge habitat may be present on-site or study area. Species not observed during field investigation. No historic occurrence records for species.
Northern Map Turtle	Special Concern	Highly aquatic species, found only in lakes and large rivers.	Low	Suitable aquatic habitat not present on-site or study area. Species not observed during investigations. No historic occurrence records for species.
Snapping Turtle	Special Concern	Highly aquatic species, found in a wide variety of wetlands, water bodies and watercourses.	Moderate	Suitable aquatic habitat may be present on-site and within study area. Species not observed on-site. NHIC indicates species within 1km of site.
Spotted Turtle	Endangered	Secretive wetland species.	Low	Suitable aquatic habitat not present on-site or study area. Species not observed during investigations. No historic occurrence records for species.
Wood Turtle	Endangered	Primarily terrestrial forest species. Associated with clear, gravelly streams.	Low	Suitable aquatic habitat not present on-site or study area. Species not observed during investigations. No historic occurrence records for species.
<b>Plants</b>				
American Ginseng	Endangered	Rich, moist, relatively mature deciduous forests.	Low	Woodlands on-site are unlikely to support habitat requirements for American ginseng growth.
Black Ash	Endangered	Predominantly a wetland species, found in swamps, floodplains and fens.	High	Suitable habitat which may support species found on-site. Species observed within on-site wetlands.
Butternut	Endangered	Inhabits a wide range of habitats including upland and lowland deciduous and mixed forests.	Moderate	Suitable habitat to support species may be found on-site. Portions of the site are open and in a regenerative state. Species was not observed on-site during the site investigations. NHIC indicates species within 1km of site.
<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	Suitable required tree species not found on-site. Species not observed on-site. No historic occurrence records for species.
<b>Fish</b>				
American Eel	Endangered	Primarily nocturnal, hiding in soft substrate or submerged vegetation during the day.	Low	Suitable aquatic habitat not present on-site or study area. Species not observed during investigations. No historic occurrence records for species.
Bridle Shiner	Special Concern	Prefers clear water with abundant vegetation over silty or sandy vegetation	Low	Species not observed during investigation. No historic occurrence records for species on-site or study area.
Channel Darter	Special Concern	Prefers clear water with abundant vegetation over silty or sandy vegetation	Low	Species not observed during investigation. No historic occurrence records for species on-site or study area.

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

