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# Environmental Impact Statement
# Zoning Amendment
# 6659 Franktown Road
# Geographic Township of Goulbourn
Ottawa, Ontario

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Submitted to:

Air Rock Drilling
6659 Franktown Road
Richmond, Ontario
K0A 2Z0

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# Zoning Amendment
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# Geographic Township of Goulbourn
Ottawa, Ontario

August 7, 2024
Project: 100123.002

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# 1.0 INTRODUCTION

GEMTEC Consulting Engineers and Scientists Limited (GEMTEC) was retained by Air Rock Drilling complete an Environmental Impact Statement (EIS) for the property located on Part of Lot 19, Concession 4, in the Geographic Township of Goulbourn, City of Ottawa, Ontario (hereafter referred to as "the subject property"). The subject property is municipally addressed as 6659 Franktown Road. The location of the subject property is illustrated on Figure A.1 in Appendix A.

## 1.1 Purpose

The property owner is seeking a zoning amendment for 6659 Franktown Road to align the existing EP3 zoning to reflect the revised Provincially Significant Wetland (PSW) extents on the site and to better reflect the existing sites mixed residential commercial use. Based on the City of Ottawa Official Plan (Ottawa, 2021) an EIS is required demonstrating that the proposed zoning amendment and corresponding site use will not negatively impact potential natural heritage features, which may be present within the study area. The study area is defined as the property boundary and the adjacent lands encompassing an area of 120 m beyond the property boundary. The subject project and the extents of the study area are illustrated on Figure A.2 in Appendix A.

## 1.2 Objective

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

The objective of the work presented herein is twofold; 1) to identify and evaluate the significance of any natural heritage features, as defined in the Provincial Policy Statement (MMAH, 2020), on the subject property and within the broader study area and; 2) to assess the potential impacts from the proposed amendment on any natural heritage features identified and to recommended 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 Policy Statement (MMAH, 2020);
- Endangered Species Act (Ontario, 2007);
- Conservation Authorities Act (Ontario, 1990);
- Natural Heritage Reference Manual (OMNR, 2010);
- City of Ottawa Official Plan (Ottawa, 2021); and

- City of Ottawa EIS Guidelines (Ottawa, 2023)

### 1.3 Physical Setting

The 40.23 ha subject property is located on Part of Lot 19, Concession 4, in the Geographic Township of Goulbourn and is municipally addressed as 6659 Franktown Road. The frontage of the subject property is currently occupied by a commercial drilling company and associated residence while the remainder of the lot is compromised cultural meadow, deciduous woodlands, deciduous swamp and meadow marsh habitat. The subject property is bound to the southeast by Franktown Road, and to the southwest by neighbouring properties of Lot 19, Concession 4. To the northwest the site is bound by neighbouring properties of Lot 19 Concession 5 and to the northeast by neighbouring properties of Lot 20, Concession 4.

#### 1.3.1 Land Use Context

The subject property is situated within a larger mixed rural residential and agricultural area. The existing land use designations from the City of Ottawa include rural countryside and greenspace over the front portion of the site and natural heritage system core area and significant wetlands over the rear portion of the site. The City of Ottawa zoning by-law is rural countryside zone (RU) and environmental protection (EP3).

## 2.0 METHODOLOGY

### 2.1 Desktop Review

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

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

- Make a Map: Natural Heritage Areas (OMNRF, 2022a)
- Land Information Ontario (OMNRF, 2011);
- City of Ottawa Official Plan (Ottawa, 2021);
- Geo Ottawa (Undated);
- Rideau Valley Conservation Authority Geoportal (RVCA, undated);
- Ontario Geological Survey (OGS, 2019);
- Wildlife Values Area (OMNRF, 2023a);
- Wildlife Values Site (OMNRF, 2023b);
- Natural Heritage Information Centre Biodiversity Explorer (OMNRF, 2022b);

- Fisheries and Oceans Canada SAR Maps (DFO, 2024);
- Breeding Bird Atlas of Ontario (Cadman et al., 2007);
- Ontario Herpetofaunal Atlas (Oldham and Weller, 2000); and
- Ontario Reptile and Amphibian Atlas (Ontario Nature, 2019).

## 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 2.1 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 |
|---|---|---|---|
| September 25, 2019 | 09:00-11:10 | 8°C, clear skies, no precipitation, Beaufort wind 2 | Ecological Land Classification |
| October 11, 2019 | 13:15-14:30 | 20°C, mostly sunny, no precipitation, Beaufort wind 2 | Ontario Wetland Evaluation |
| October 25, 2019 | 14:00-16:30 | 17°C, overcast, no precipitation, Beaufort wind 1 | Ontario Wetland Evaluation |
| May 17, 2024 | 13:30-15:00 | 24°C, ~100% cloud cover, no precipitation, Beaufort wind 1 | EIS Conditions Update |
| July 31, 2024 | 08:00-09:15 | 22°C, ~10% cloud cover, no precipitation, Beaufort wind 0 | Black Ash Survey |

### 2.2.1 Ecological Land Classification

Vegetation communities on the subject property were delineated during the desktop review stage of this EIS using publicly available air photos and confirmed in the field on September 25, 2019 and May 17, 2024, following the Ecological Land Classification System for Southern Ontario (Lee et al., 2008). Vegetation communities were confirmed in the field by employing the random meander methodology while documenting dominant vegetation species within the various vegetation community forms.

### 2.2.2 Wetland Boundary Evaluation

A wetland boundary evaluation was completed following the methodologies and guidance outlined in the Ontario Wetland Evaluation System for Southern Ontario. The objective was to reassess the boundary of a portion of the Richmond Fen Provincially Significant Wetland Complex. The

2019 wetland boundary evaluation was submitted to the Kemptville District MNRF and is provided in Appendix D. The 2019 wetland boundary evaluation was approved by the Kemptville District MNRF and subsequent provincial mapping updated. Correspondence is provided in Appendix E between MNRF Biologist GEMTEC Biologist, indicating that the MNRF has approved the wetland boundary changes.

### 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);
- Ontario Wetland Evaluation System Manual – Southern Ontario (OMNRF, 2014b);
- Significant Wildlife Habitat Ecoregion Criterion Schedules (OMNRF, 2015); and
- Significant Wildlife Habitat Mitigation Support Tool (OMNRF, 2014b).

## 3.0 EXISTING ENVIRONMENT

### 3.1 Ecoregion

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

The eastern portion of the Ecoregion, which the subject property is located, is underlain by glaciomarine deposits as a result of the brief post-glacial incursion of salt water from the Champlain Sean 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 Study Area Land Use

Figure 1 below provides an illustration of the temporal changes in land use within the study area from 1976, 1991, 2011, and 2022 aerial imagery taken from GeoOttawa.

In 1976, the subject property and surrounding lands were primarily populated with agricultural fields, farmhouses and wetland.

By 1991, a hydro corridor and access road had been created adjacent to the subject property. Surface water on the subject property and north of the property appears to have reduced. Residential development occurred along Franktown Road within Richmond.

By 2011, significant residential development continued along Franktown Road within Richmond and south of the property along Ottawa Street West. The land south of Franktown Road had entered a regenerative state with trees colonizing historical agricultural fields.

By 2022, further residential development had occurred east of the site along Franktown Road within Richmond. The land north of the subject site was converted to agricultural fields. The remaining surrounding lands are in present day configuration.

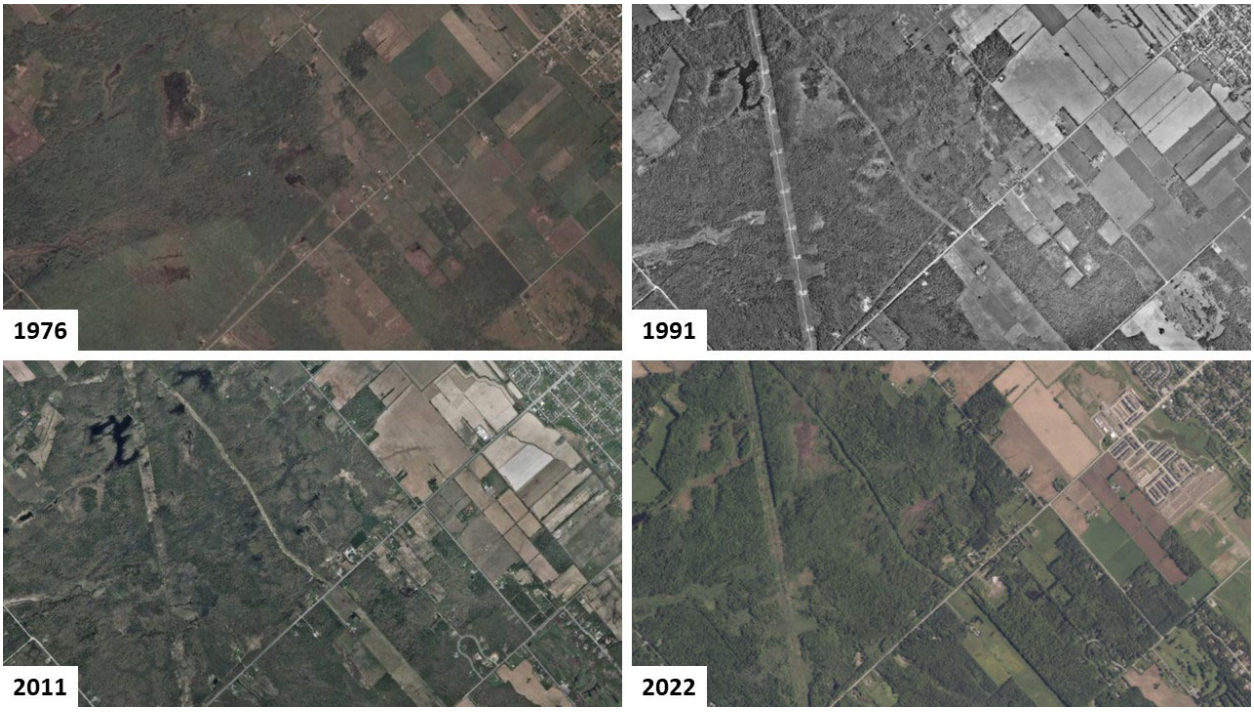



**Figure 1 – Temporal Changes in Land Use within Study Area**

### 3.3 Landforms, Soils and Bedrock Geology

The topography of the site is relatively flat, with a gentle downward slope towards the meadow marsh in the centre of the property, from a topographical high of 110 mASL to a topographical low of 99 mASL.

Two topographical landforms, as mapped by Chapman and Putman (1984) are described on the subject property, sand plains occur throughout the south and northeastern portions of the property and peat and muck occurs throughout the northwestern portion of the property. Both topographical landforms occur in the Ottawa Valley Clay Plains physiographic region.

The Ontario Geological Survey (OGS, 2019) identifies two surficial soil units on the subject property, coarse-textured glaciomarine deposits and organic deposits. Organic deposits consisting of peat, muck and marl, are mapped in the centre of the property, underlaying the meadow marsh. Coarse-textured glaciomarine deposits, consisting of sand, gravel, minor silt and clay with foreshore and basinal deposits, are mapped throughout the remainder of the property.

Bedrock at the site is composed of the Ottawa Group, Simcoe Group and Shadowlake Formation, comprised of limestone, dolostone, shale, arkose, and sandstone.

### 3.4 Surface Water, Groundwater and Fish Habitat

Surface water features on-site consist of the Richmond Fen Provincially Significant Wetland (PSW) Complex and its associated water courses in the central and northern portions of the property. The Richmond Fen PSW is a very large 4,088 ha palustrine wetland, comprised of numerous complexes of swamp, marsh and fen wetland vegetation communities. At the site, the Richmond Fen forms part of the Jock River sub-watershed.

A fisheries assessment was not conducted as part of this EIS, however it is assumed that the Richmond Fen provides fish habitat for a variety of cyprinids and other small-bodied fish species, as well as contributing to downstream fish habitat.

Groundwater investigations were not completed in support of this EIS.

### 3.5 Vegetation Communities

Vegetation communities on-site were confirmed by GEMTEC in 2019 and 2024, following protocols utilized in the Southern Ontario Ecological Land Classification System (Lee et al., 2008). Vegetation at the site represents a mosaic of deciduous woodlands, cultural meadows, deciduous swamps and meadow marshes. Table 3.1 below provides a summary of the various vegetation communities identified on-site while Figure A.3 in Appendix A provides an illustration of the various vegetation communities.

**Table 3.1 Vegetation Communities On-site**

| ELC Community Type | Description | Size (ha) |
|---|---|---|
| Lowland Deciduous Forest (FOD-7) | This community occurs south of the PSW and was dominated by a mix of green ash (*Fraxinus pennsylvanica*) and red maple (*Acer rubrum*). Common constituents included American elm (*Ulmus americana*), bur oak (*Quercus bicolor*), trembling aspen (*Populus tremuloides*), yellow birch (*Betula alleghaniensis*) and to a lesser extent American beech (*Fagus grandifolia*) and black ash (*Fraxinus nigra*). It should be noted that the majority of black ash identified are either dead or in very poor health due to emerald | 5.48 |

| ELC Community Type | Description | Size (ha) |
|---|---|---|
| | ash borer disease. Shrub species in this community included green alder (*Alnus viridis*) and willow (*Salix* sp.). Herbaceous vegetation included sensitive fern (*Onoclea sensibilis*), night shade (*Solanaceae* sp.) and royal fern (*Osmunda regalis*). | |
| Cultural Meadow (CUM) | This community was dominated by herbaceous vegetation species including wild carrot (*Daucus carota*), cow's vetch (*Vicia cracca*), goldenrod (*Solidago* spp.), aster (*Aster* spp.), red clover (*Trifolium pratense*), and common milkweed (*Asclepias syriaca*).<br><br>Tree and shrub species were scattered sporadically throughout the community, as well as along hedgerows, and included trembling aspen, eastern white cedar (*Thuja occidentalis*), eastern hemlock (*Tsuga canadensis*), alder, maple and ash species. | 3.00 |
| Commercial (CVC) | Occupying the entirety of the 6659 Franktown Road parcel is a commercial/industrial drilling business. | 1.22 |
| Green Ash Mineral Deciduous Swamp (SWD2-2) | This community is dominated by green ash. Lesser constituents include red maple, green alder and slender willow (*Acer petiolaris*). Herbaceous vegetation was primarily populated by panicled aster (*Symphyotrichum lanceolatum*).and a variety of grasses and sedges.<br><br>The dominate soil substrate in this community is silty sand, and the community has a soil moisture value of 4. | 23.98 |
| Alder Mineral Deciduous Thicket Swamp (SWT2) | This community is dominated by green alder and to a lesser extent, slender willow. Herbaceous vegetation was dominated by broadleaf cattail (*Typha latifolia*).<br><br>The dominate soil substrate in this community is silty sand. | 1.76 |
| Graminoid Meadow Marsh (MAM2) | This meadow march community was dominated almost entirely by broadleaf cattail.<br><br>The dominate substrate in this community was silty sand. | 2.37 |

| ELC Community Type | Description | Size (ha) |
|---|---|---|
| Reed Canary Grass Graminoid Meadow Marsh (MAM2-2) | This meadow marsh was dominated by reed canary grass and panicled aster.<br><br>The dominate substrate in this community was silty sand. The soil moisture value was found to be 6. | 2.41 |

### 3.6 Wildlife

Wildlife observed on-site and within the study area during field investigations completed in 2019 and 2024 are summarized in Table C.2 in Appendix C. Incidental wildlife observations were documented during the various surveys detailed in Section 2.2.

## 4.0 NATURAL HERITAGE FEATURES

Natural Heritage Features (NHFs) in Ecoregion 6E 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”.

The Natural Heritage Reference Manual (NHRM; OMNR, 2010) and the Significant Wildlife Habitat Criteria Schedules (SWHCS; OMNRF, 2015) provide evaluation criteria for each of the NHFs defined in the PPS. Each NHF is discussed in more detail in the subsections below.

### 4.1 Provincially Significant Wetlands

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

A portion of the Richmond Fen PSW is located in the central and northern portions of the property. No other PSWs were identified on-site during the desktop review, nor were they identified on-site. Impacts to PSWs and local wetlands from the proposed project are discussed in Section 6.

## 4.2 Significant Woodlands

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

The subject site is located within the rural policy area of the City of Ottawa. As established in the City of Ottawa *Significant Woodlands: Guidelines for Identification, Evaluation and Impact Assessment* (Ottawa, 2022), rural policy area woodlands are to be assessed based on the criteria established in the NHRM. The subject site falls into the rural planning area of the Jock River Catchment, and as established in the City of Ottawa Significant Woodland Guidelines, the percent forest cover for this area is 36.7%. Therefore, the minimum size criteria for significant woodlands in the Jock River Catchment planning jurisdiction is 50 ha. Furthermore, the minimum size criteria for interior woodland habitat is 8 ha.

Table C.2 in Appendix C, presents the screening rationale for significant woodlands applied in this EIS. Based on the results of the significant woodlands screening presented in Table C.2, significant woodlands are present on-site due to their size and ecological functions. Significant woodlands are illustrated on Figure A.4 in Appendix A. Impacts to significant woodlands from the proposed project are discussed in Section 6.

## 4.3 Significant Valleylands

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

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

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

## 4.4 Significant Areas of Natural and Scientific Interest

The MNRF identifies two types of areas of natural and scientific interest (ANSI) in Ontario: life sciences ANSIs typically represent significant segments of Ontario's biodiversity and natural landscapes, while earth science ANSIs typically represent significant examples of bedrock, fossils or landforms in Ontario (OMNR, 2010).

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

## 4.5 Significant Wildlife Habitat

The natural heritage reference manual (OMNR, 2010), in combination with the significant wildlife habitat technical guide (MNRF, 2000) and the significant wildlife habitat ecoregion criterion schedules (MNRF, 2015) were used to identify and evaluated potential significant wildlife habitat on-site. The significant wildlife habitat is 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 significant wildlife habitat, 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 guides (OMNR, 2000) and significant wildlife habitat ecoregion criterion schedules (OMNRF, 2015a) identify 11 types of seasonal concentration habitats that may be considered significant wildlife habitat. These 11 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 review of Table C.3 in Appendix C, two habitats of seasonal concentrations of animals have been identified on-site, bat maternity colonies and turtle wintering areas.

#### 4.5.1.1 Bat Maternity Colonies

Snag surveys were outside of the scope of work for this EIS, however, the woodlands on-site to the north and west of the proposed development have the potential to support *candidate* bat maternity colony SWH. Impacts to *candidate* bat maternity colonies from the proposed development are discussed in Section 6.

#### 4.5.1.2 Turtle Wintering Area

*Candidate* turtle wintering areas SWH were identified on-site within the Richmond Fen PSW, corresponding with the two meadow marshes (ELC codes MAM2 and MAM2-2) ecosites at the centre of the property. Turtle wintering area SWH may be identified as permanent water bodies,

large wetlands and bogs or fens with adequate dissolved oxygen, water deep enough to avoid freezing and have soft mud substrates (OMNRF, 2015).

Formal turtle basking surveys were outside of the scope of work for this EIS and only one midland painted turtle was observed on-site during the field investigations. While there is a potential for the Richmond Fen to support wintering areas for turtles, habitat availability on-site is limited. The meadow marsh habitat has low open water availability, is likely to freeze to substrate depth during winter, and is likely to experience anoxic conditions throughout the winter and is considered to provide poor-quality overwintering habitat.

Impacts to *candidate* turtle overwintering area SWH from the proposed project 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 communities identified on-site and described in Section 3.4 of this report are not ranked by the NHIC as S1, S2 or S3 and are therefore not considered to be rare vegetation communities. As such, rare vegetation communities are not discussed or evaluated further in this EIS.

### 4.5.3 Specialized Habitats for Wildlife

Specialized wildlife habitats are microhabitats that provide a critical resource to some groups of wildlife. The significant wildlife habitat technical guide (OMNR, 2000), defines eight specialized habitats that may constitute significant wildlife habitat, these eight types of specialized wildlife habitats are evaluated in Table C.4 in Appendix C.

Following review of Table C.4 in Appendix C, one specialized habitat for wildlife has been identified on-site or within the study area, woodland amphibian breeding habitat.

#### 4.5.3.1 Woodland Amphibian Breeding Habitat

Based on the description provided in the Significant Wildlife Habitat Criteria Schedules (OMNRF, 2015), woodland amphibian habitat is considered the wetland or waterbody, plus a 230 m radius of surrounding woodland area.

*Candidate* woodland amphibian breeding habitat was identified on-site. The lowland deciduous forest (FOD7) provides the terrestrial component of the SWH, and is located adjacent to the Richmond Fen PSW, green ash mineral deciduous swamp (SWD2-2), which provides the aquatic portion of the SWH.

A formal amphibian breeding survey was outside of the scope of this EIS. Potential impacts to *candidate* woodland amphibian breeding SWH are discussed in Section 6.

### 4.5.4 Habitats of Species of Conservation Concern

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

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

The Significant Wildlife Habitat Ecoregion Criterion Schedules (OMNRF, 2015), provides five general habitat types known to support a wide range of species of conservation concern in Ontario. The five general habitat types for Ecoregion 6E are provided in Table C.5 in Appendix C, including a brief rationale as to why they are or are not considered further in this EIS.

Following review of Table C.5 in Appendix C, two habitats of species of conservation concern has been identified on-site, marsh breeding bird habitat and habitat for special concern and rare wildlife species for eastern wood-pewee, golden-winged warbler, wood thrush, yellow rail and snapping turtle.

#### 4.5.4.1 Marsh Breeding Bird Habitat

*Candidate* marsh breeding bird habitat was identified on-site within the Richmond Fen PSW, corresponding with the two meadow marshes (ELC codes MAM2 and MAM2-2) ecosites at the centre of the property.

Marsh breeding bird SWH is considered all wetland habitats that have shallow water with emergent aquatic vegetation present (ELC Ecosites: MAM1-6, SAS1, SAM1, SAF1, FEO1 and BOO1). For green heron, marsh breeding bird habitat includes the edge of the water such as sluggish streams, ponds, and marshes sheltered by shrubs and trees (all SW, MA and CUM1 ELC Ecosites).

A formal marsh breeding bird survey was outside of the scope of this EIS. As such, the presence of marsh breeding bird SWH was not confirmed. Potential impacts to *candidate* marsh breeding bird habitat SWH are discussed in Section 6.

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

Based on observation data from the field investigations and occurrence data from the NHIC and Ontario Breeding Bird Atlas, five species of special concern have been identified on-site or within the broader study area: eastern wood-pewee, golden-winged warbler, wood thrush, yellow rail and snapping turtle. No other species of special concern or rare wildlife species were identified on-site or within the broader study area. Potential impacts to all special concern and rare wildlife species from the proposed project are discussed in Section 6 below.

##### *Eastern Wood-Pewee*

The eastern wood-pewee is a small flycatcher bird with an S-rank of S4B (breeding is uncommon but not rare) in Ontario. While breeding bird surveys were not completed in support of this EIS, the NHIC has provided observations for eastern wood-pewee within 1 km of the subject property. During the site investigation eastern wood-pewee was not detected on-site. Eastern wood-pewee is a woodland species that is often found near clearings and edges. Given the availability of treed edge habitat on-site and within the study area, there is a moderate potential for eastern wood-pewee or suitable habitat to occur on-site.

##### *Golden-Winged Warbler*

The golden-winged warbler is a small songbird with an S-rank of S4B (breeding is uncommon but not rare) and is listed as a species of special concern in Ontario. Golden-winged warbler is a shrublands species that is often found nesting in areas with young shrubs surrounded by mature forest such as field edges, hydro or utility right of ways or logged areas. Given the lack of shrub thicket habitat surrounded by forest habitat, there is a low chance for golden-winged warbler habitat to occur on-site. As such, golden-winged warbler is not discussed further in this EIS.

##### *Wood Thrush*

The wood thrush is a medium-sized songbird with an S-rank of S4B (breeding is uncommon but not rare) in Ontario. While breeding bird surveys were not completed in support of this EIS, the NHIC has provided observations for wood thrush within 1 km of the subject property. During the site investigations wood thrush was detected on-site. Wood thrush is a woodland species often found in moist, deciduous hardwood or mixed forests stands, with dense deciduous undergrowth and tall trees. Given the availability of forest habitat within the study area, there is a high chance of wood thrush or suitable habitat to occur on-site.

##### *Yellow Rail*

The yellow rail is a small sized marsh bird with an S-rank of S4B (Breeding population is apparently secure). While marsh breeding bird surveys were not completed in support of this EIS, the NHIC has provided observations for yellow rail within 1 km of the subject property. During the site investigations yellow rails was not detected on-site. Yellow rail are marsh obligates, found in

a variety of marsh habitats. Given the availability of potentially suitable marsh habitat on-site, there is a moderate chance for yellow rail or suitable habitat to occur on-site.

#### *Snapping Turtle*

The snapping turtle is a highly aquatic turtle species with an S-rank of S3 (rare to uncommon) and is listed as a species of special concern in Ontario. The NHIC identified snapping turtle as having occurred within 1 km of the site. Snapping turtle was not observed during the field investigations. Snapping turtles are aquatic generalists, found in a variety of wetlands, water bodies and watercourses. Given the availability of potentially suitable aquatic habitat on-site there is a moderate potential for snapping turtle and its habitat 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, 2015). The Significant Wildlife Habitat Ecoregion Criterion Schedules for Ecoregion 6E-11 (OMNRF, 2015), identifies two types of animal movement corridors: amphibian movement corridors and deer movement corridors. As per guidance presented in MNRF (2015), animal movement corridors should only be identified as significant wildlife habitat when a *confirmed* or *candidate* significant wildlife habitat has been identified by the MNRF district office or by the regional planning authority. In addition to MNRF references, the City of Ottawa's Natural Linkage Areas document (undated) was reviewed and no corridors were identified within the study area.

Following review of Table C.6 in Appendix C, no *candidate* animal movement corridors have been identified on-site. Accordingly, animal movement corridors are not discussed or evaluated further in this EIS.

## 4.6 Fish Habitat

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

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

A fisheries assessment was not conducted as part of this EIS, until such time that a fisheries assessment is completed, the Richmond Fen and associated watercourses are assumed to provide fish habitat for small bodied fish species.

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

### 4.7 Species at Risk

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

Table 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.

## 5.0 PROPOSED PROJECT

The proposed project assessed for potential impacts on the natural heritage features determined to be present within the broader study area includes a zoning amendment for 6659 Franktown Road. GEMTEC understands that no physical alterations are proposed for the site as the requirement for the zoning amendment is administrative in nature. As such, the proposed project for which impacts are assessed against is limited to the continued operation of a commercial business (drilling company) on the site.

Potential impacts to natural heritage features present within the study area associated with the continued operation of the site include encroachment, fill placement, vegetation removal and noise generation. Potential environmental impacts from the proposed project are discussed in relation to potential future development 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.

As discussed in Section 5, no proposed development is anticipated as part of the proposed project. As such, the zoning amendment is not expected to result in any negative impacts on the natural heritage features. However, associated continued operation of the site may potential impacts such as include encroachment, fill placement, vegetation removal and noise generation.

### 6.1 Provincially Significant Wetlands

As outlined in Section 3.4 and Section 4.1, the Richmond Fen PSW is present on-site.

Given the nature of the proposed project, and the presence of a pre-existing single-family dwelling and commercial business on the subject property, impacts to wetlands with encroachment of equipment.

As no in-water work is anticipated as a part of the potential future development, impacts to the Richmond Fen PSW is anticipated to be indirect in nature. Other potential impacts include heavy machinery encroachment, fill placement and long-term human disturbance such as noise generation, dumping of refuse and yard waste and trampling.

Mitigation measures to protect the Richmond Fen PSW on-site are provided in Section 7.

## 6.2 Significant Woodlands

As discussed in Section 4.2, woodlands on-site and within the study area are considered significant due to their contiguous size (greater than 50 ha) and ecological functions.

The proposed zoning amendment is not anticipated to impact significant woodlands given the existing development located on the property. Similar to potential impacts posed to the PSW, potential impacts to significant woodlands are limited to heavy machinery encroachment, fill placement and long-term human disturbance such as noise generation, dumping of refuse and yard waste and trampling.

Mitigation measures intended to minimize impacts significant woodlands are discussed in Section 7.

## 6.3 Significant Wildlife Habitat

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

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

### 6.3.1 *Candidate* Bat Maternity Colonies

*Candidate* bat maternity colonies on-site has the potential to occur within on-site woodlands, specifically woodlands to the north of the existing development. Impacts to *candidate* bat maternity colonies are primarily associated with heavy machinery encroachment, fill placement and long-term human disturbance such as noise generation, dumping of refuse and yard waste and trampling.

Mitigation measures intended to protect *candidate* bat maternity colonies habitat from impacts are discussed in Section 7.

### 6.3.2 *Candidate* Turtle Wintering Areas

*Candidate* turtle wintering areas SWH were identified on-site, corresponding with the two meadow marshes (ELC codes MAM2 and MAM2-2) associated with the Richmond Fen PSW.

As in-water work is not anticipated as part of the proposed project, impacts to *candidate* turtle wintering area SWH are anticipated to be indirect and limited to heavy machinery encroachment, fill placement and long-term human disturbance such as noise generation, dumping of refuse and yard waste and trampling.

Mitigation measures to reduce impacts to and protect turtle wintering area SWH are provided in Section 7.

### 6.3.3 *Candidate* Woodland Amphibian Breeding Habitat

*Candidate* woodland amphibian breeding habitat can be found within the upland forested community (ELC code FOD7) adjacent to wetlands, as well as the swamp community (SWD2-2). 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. *Candidate* woodland amphibian breeding habitat is illustrated on Figure A.4 in Appendix A.

As in-water work is not anticipated as part of the proposed project, potential impacts to *candidate* woodland amphibian breeding SWH are anticipated to be associated with are limited to heavy machinery encroachment, fill placement and long-term human disturbance such as noise generation, dumping of refuse and yard waste and trampling.

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

### 6.3.4 *Candidate* Marsh Breeding Bird Habitat

*Candidate* marsh breeding bird habitat was identified on-site and study area within the two meadow marshes (ELC codes MAM2 and MAM2-2), correlating to the on-site Richmond Fen PSW.

As no in-water work is proposed within suitable marsh breeding bird habitat as part of the project, potential impacts to *candidate* marsh breeding bird habitat is anticipated to be indirect in nature, limited to heavy machinery encroachment, fill placement and long-term human disturbance such as noise generation, dumping of refuse and yard waste and trampling.

Mitigation measures to reduce impacts to *candidate* wetland breeding bird habitat SWH are provided in Section 7.

### 6.3.5 *Candidate* Special Concern and Rare Wildlife Species: Eastern Wood-Pewee and Wood Thrush

Two woodland avian SAR and their habitats were identified as having a potential to occur on-site or within the study area; eastern wood-pewee, and wood thrush. Eastern wood-pewee (*Contupus virens*) is a small, avian insectivore that lives in a variety of deciduous, mixed and to a lesser extent, coniferous woodland habitat (COSEWIC, 2012c). Wood thrush (*Hylocichla mustelina*) is a medium-sized songbird, that prefers second growth, and mature deciduous and mixed forests, with saplings and well-developed understory layers, but may also nest in small forest fragments.

Both avian SAR are listed as a species of special concern in Ontario. The NHIC database indicates both species to be present within 1 km of site, however, only the wood thrush was identified during the site investigations.

Impacts to avian SAR and their habitat from the proposed project is limited to the wooded area on-site, which may provide nesting and foraging habitat. Impacts to avian SAR habitat may include heavy machinery encroachment, fill placement and long-term human disturbance such as noise generation, dumping of refuse and yard waste and trampling.

Mitigation measures to protect nesting and foraging avian SAR are provided in Section 7.

### 6.3.6 *Candidate* Special Concern and Rare Wildlife Species: Yellow Rail

Yellow rail is a small sized marsh bird that resembles a chicken or quail, and the plumage is buffy-yellow with a dark crown and dark stripe through the eyes and a white wing patch visible during flight (COSEWIC, 2001). In Ontario the yellow rail is listed as a species of special concern.

Threats to yellow rail are primarily associated with wetland loss due to agricultural and human development, as well as general habitat loss and habitat degradation. Habitat loss on the wintering grounds has also been shown to be an important limiting factor for yellow rail populations.

Yellow rail and their habitat on-site from the proposed development is limited to the wetland habitat on-site (MAM2 and MAM2-2 on Figure A.3), which provides potentially suitable nesting and foraging habitat. Given that the separation distance between the proposed project and suitable habitat on site is greater than 150 m and as no in-water work, or in-wetland work is proposed, impacts to yellow rail from the proposed development are not anticipated.

### 6.3.7 *Candidate* Special Concern and Rare Wildlife Species: Snapping Turtle

Snapping turtle (*Chelydra serpentina*) is the largest freshwater turtle found in Canada, and are aquatic generalists, found in a variety of wetlands, waterbodies, and watercourses (COWESIC, 2008). In Ontario, the snapping turtle is listed as a species of special concern.

Threats to snapping turtle are primarily related to their life-history: their slow recruitment, late maturity, long lifespan and high adult survival makes them extremely vulnerable to a variety 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).

Snapping turtle and their habitat on-site from the proposed development is limited to the wetland habitat on-site (MAM2 and MAM2-2 on Figure A.3), which provides potentially suitable basking, foraging and *candidate* turtle wintering habitat.

As no in-water work is proposed as part of the future development, potential impacts to snapping turtle and their habitat is anticipated to be indirect in nature. These impacts are limited to wetlands adjacent to the potential future development on the property parcel. Given the existing development on the property, the proposed project on-site is not anticipated to impact snapping turtle or their habitat on-site.

Impacts to snapping turtle may include heavy machinery encroachment, fill placement and long-term human disturbance such as noise generation, dumping of refuse and yard waste and trampling. Mitigation measures to protect snapping turtle and their habitat from the potential future development are presented in Section 7.

## 6.4 Fish Habitat

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

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

When activities are unable to avoid or mitigate harm to fish or fish habitat from typical project impacts such as temperature change, sedimentation, infilling, reduction of nutrient and food

supply, etc., an authorization under Subsection 35 (2) of the Fisheries Act is required for the project to proceed without contravening the Act.

As no in-water work is proposed, direct impacts to fish habitat are not anticipated. Considering the scope of the project and abundance of available habitat, impacts are anticipated to be minimal, mostly indirect and temporary in nature.

Potential indirect impacts to surface water features include heavy machinery encroachment, fill placement and long-term human disturbance such as noise generation, dumping of refuse and yard waste and trampling.

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

## 6.5 Species at Risk

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

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

### 6.5.1 Least Bittern

Least bittern (*Ixobrychus exilis*) is the smallest heron in the western hemisphere. The least bittern is a marsh obligate and breeds strictly in marshes of emergent vegetation. These marshes have relatively stable water levels and interspersed areas of open water (COSEWIC, 2009). Although they typically breed and nest in cattail marshes, nests have also been found in bulrush, grasses, horsetail, and willow (Cadman et al., 2007). It is most frequently found in marshes of at least 5 ha but has been observed in much smaller marshes (Cadman et al., 2007).

Formal Marsh Breeding Bird Surveys were out of the scope of this EIS. However, through the desktop review, the NHIC has identified observation records for least bittern within 1 km of the site. The Richmond Fen PSW located on-site may provide suitable habitat for least bittern. This species was not observed during the field investigations.

Given the availability of suitable habitat on-site and within the surrounding study area, there is a potential for least bittern to occur on the property. However, based on the proposed project plan, no development is to occur within the area of suitable least bittern habitat, identified within the emergent vegetation marsh habitat (MAM2 and MAM2-2 of Figure A.3).

As such, negative impacts to least bittern are anticipated to be indirect in nature and primarily involves impacts to water quality from run-off and sediment transport. Direct impacts may include encroachment and increased human-wildlife interactions. However, given the nature of the project and separation of at least 150 m between the potential future development and nearest point of the marsh habitat, impacts are anticipated to be negligible.

Any potential impacts are limited to areas adjacent to the potential future development on the property parcel. Given the existing development on the property, the proposed project on-site is not anticipated to impact SAR habitat on-site.

Mitigation measures to protect least bittern and its habitat are discussed in Section 7 below.

### 6.5.2 Eastern Small-footed Myotis

Eastern small-footed Myotis (*Myotis leibii*) is the smallest (typically 3-5 g), insectivorous bat found in Ontario.

The eastern small-footed Myotis is found throughout eastern North America. In Ontario the species has been observed in the areas sough 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, 2019a).

Although the forest habitat was not confirmed to support bat maternity colonies, given the availability of habitat and buildings on-site and 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 anticipated to be minimal and could be associated with habitat loss, encroachment and increased wildlife-human interaction.

Any potential impacts are limited to areas adjacent to the potential future development on the property parcel. Given the existing development on the property, the proposed project on-site is not anticipated to impact SAR habitat on-site.

Mitigation measures intended to protect eastern small-footed Myotis from impacts of the proposed development are discussed in Section 7.

### 6.5.3 Little Brown Myotis

Little Brown Myotis (*Myotis lucifugus*) is a small (typically 4-11 g), insectivorous bat.

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, 2019b).

Little Brown Myotis overwinter in caves and abandoned mines, they require highly humid conditions and temperatures that remain above the freezing mark (Ontario, 2019b). 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, 2013b).

Although the forest habitat was not confirmed to support bat maternity colonies, given the availability of habitat and buildings on-site and 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 anticipated to be minimal and could be associated with habitat loss, encroachment and increased wildlife-human interaction.

Any potential impacts are limited to areas adjacent to the potential future development on the property parcel. Given the existing development on the property, the proposed project on-site is not anticipated to impact SAR habitat on-site.

Mitigation measures intended to protect little brown Myotis from impacts of the proposed development are discussed in Section 7.

### 6.5.4 Tri-colored Bat

Tri-colored bat (*Perimyotis subflavos*) is a small (typically 5-7 g), insectivorous bat.

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 in caves or mines, and have very rigid habitat requirements; they typically roosting 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 utilize trees, rock crevices and buildings for maternity colonies. Foraging is mainly done over watercourses and streamside vegetation (COSEWIC, 2013).

Although the forest habitat was not confirmed to support bat maternity colonies, given the availability of habitat on-site 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.

Any potential impacts are limited to areas adjacent to the proposed development on the retained lands. Given the existing development on the proposed expansion lot, the proposed project on-site is not anticipated to impact SAR habitat on-site.

Mitigation measures intended to protect tri-colored bat from impacts of the proposed development are discussed in Section 7.

### 6.5.5 Blanding's Turtle

Blanding's turtles (*Emydoidea blandingii*) is a freshwater turtle, with a highly domed, smooth black carapace with slight, irregular tan or yellow flecking.

In Canada, Blanding's turtles are found throughout southern and south-central Ontario from south of Manitoulin Island to western Quebec. In Ontario, Blanding's turtles are often observed utilizing eutrophic habitats with clear water (COSEWIC, 2005). This turtle species occurs primarily in shallow water; adults are generally found in open or partially vegetated sites, where as juveniles prefer areas that contain thick aquatic vegetation. Blanding's turtles are known to make large overland journeys between connected lakes, rivers, streams, marshes or ponds, upwards of 6 km in a single active season. Overwintering occurs in permanent pools that average about one metre in depth, or slow flowing streams (COSEWIC, 2005).

The site is located within a greater area of known Blanding's turtle occurrences, NHIC occurrence data indicates Blanding's turtles have been observed less than 2 km from the site. With respect to the NHIC observation data, the closest grid square Blanding's turtles have been identified within is 18VR3103, which covers the majority of the subject property.

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

Given the NHIC data observation, Category 2 and Category 3 Blanding's turtle habitat, as defined in the MNRF general habitat description occurs on-site and is illustrated on Figure A.5 in Appendix A. All wetlands and watercourses on-site are assumed to provide Category 2 and 3 habitat. As the site has been identified to provide *candidate* wintering habitat, Category 1 is likely to occur

on-site, however without specific location data, the precise location of Category 1 habitat cannot be confirmed, and has been assumed to occur within the MAM2 and MAM2-2 habitat on-site, identified as providing *candidate* turtle wintering habitat in Section 4.5.1 and the 30 m area around those communities. Potential Category 1 habitat is illustrated on Figure A.5 in Appendix A.

As no further development at the site is anticipated, potential impacts to Blanding's turtle would be limited to impacts to individuals during heavy machinery operation, fill placement and long-term human disturbance such as noise generation, dumping of refuse and yard waste and trampling.

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

General mitigation measures and best practices intended to Blanding's turtles from negative impacts are discussed in Section 7.

### 6.5.6 Black Ash

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

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

Black ash was added to the Species at Risk in Ontario List in January 2022.

As described previously in Section 3.5, black ash was identified on-site, within the Lowland Deciduous Forest (ELC code FOD-7).

It is important to note that the site investigation was conducted to confirm site conditions as no development is currently proposed. Accordingy, only the area within 30 m of the woodland edge was surveyed for black ash. As such, individual tree locations beyond the 30 m woodland edge were not specifically mapped during the field investigation.

The proposed project does not require vegetation clearing however, potential future development may require some level of vegetation clearing to accommodate future construction activities, the lowland deciduous community is not anticipated to be within the area of potential future development. As such, direct impacts to black ash and their habitat are not anticipated as a result of the proposed project and potential future development. Potential impacts to black ash and its associated habitat are expected to be indirect and negligible.

Potential impacts may include short duration construction impacts, including heavy machinery encroachment, fill placement, and long-term human disturbance such as dumping of refuse and trampling.

Mitigation measures anticipated to be required to protect black ash are provided in Section 7.

### 6.5.7 Butternut

Butternut (*Juglans cinerea*) is a short lived, medium-sized tree that can reach up to 30 m in height. Butternut is easily recognized by its compound leaves, made up of 11 to 17 leaflets, each 9 to 15 centimetres long, arranged in a feather-like pattern. The bark is grey and smooth in younger trees, and becomes rigid with age. Butternut is a member of the walnut family and produces edible nuts in the fall.

The range of butternut trees in Canada extends from southern Ontario into southern Quebec and New Brunswick (COSEWIC, 2003). It is shade intolerant and prefers riparian habitats or sites with rick, moist, well-drained loams and gravels with limestone origin. Common associates for butternut include: basswood, black cherry, beech, black walnut, elm, hickory, oak, red maple, sugar maple, yellow poplar, white ash and yellow birch.

No butternut trees were observed on-site during any of the site investigations. Furthermore, no butternut observation records were provided by the NHIC for the single 1 km grid square that encompasses the site. As no butternuts were documented on-site no mitigation measures are provided in Section 7 in relation to butternut and they are not discussed or evaluated further in this EIS.

### 6.5.8 Bogbean Buckmoth

Buckmoths (*Hemileuca*) is a genus of silk moths, and while the taxonomic rank of Bogbean buckmoth (*Hemileuca* sp.) is Canada is not known, it is the only species of *Hemileuca* in Eastern Ontario. Bogbean buckmoths are a distinctive day-flying moth, adults are medium-sized with forewing lengths reaching 36 mm (COSEWIC, 2009). Their colouring is a distinctive black and white with an eyespot on each wing.

Bogbean buckmoth populations are only known from Ontario and New York, all Canadian sites are in eastern Ontario with two near Richmond south of Ottawa and two near White Lake. The actual area occupied by this species in Canada is less than 3 $km^2$. In Canada, Bogbean buckmoth are found in open, calcareous graminoid and low shrub fens. Larvae are most abundant in patches of twig rush or wire sedge with shallow pools of Bogbean, its primary host. Bogbean buckmoth may also be found in adjacent sphagnum hummocks with shrubs and stunted tamarack or cedar.

The Bogbean buckmoth is known to occur within the Richmond Fen, however the portion of the Richmond Fen PSW complex on-site is comprised of open marsh habitats and deciduous treed swamps and does not represent preferred suitable habitat, which is fens and sphagnum

hummocks. These preferred fens and sphagnum hummocks are not present on-site, furthermore no Bogbean plants were observed on-site. Furthermore, as no in-water or in-wetland work is proposed no impacts are anticipated to occur to Bogbean buckmoth or their habitat on-site.

### 6.6 Cumulative Impacts

Given the existing development, the proposed zoning amendment is not anticipated to result in any cumulate impacts to the surrounding natural environment.

Potential cumulative impacts associated with the potential future development on the property parcel include encroachment, disturbance, and human-wildlife interactions.

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

## 7.0 RECOMMENDED AVOIDANCE AND MITIGATION MEASURES

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

For the purpose of this report, a setback is defined as the minimum required distance between any structure, development or disturbance and a specified line. A buffer, for the purpose of this report, is defined as the area located between a natural heritage feature and the prescribed setback. For the purpose of 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). Buffers recommended in the following subsections and illustrated on Figure A.5, are done so within the context of the existing environmental disturbances but also to promote reasonable natural rehabilitation.

### 7.1 Provincially Significant Wetlands

No negative impacts on the integrity of the wetlands are anticipated as a result of the proposed project if all mitigation measures recommended below area enacted and best management practices followed. Wetlands on-site can be protected against potential impacts of the proposed development through the implementation of a construction setback (refer to Section 7.2).

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

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

### 7.2 Significant Woodlands

On-going commercial operations have the potential to impact significant woodlands on-site through encroachment. Accordingly, implementation of a 30 m setback from the edge of the significant woodlands is proposed to prevent impacts to significant woodlands. A 30 m setback is illustrated on Figure A.5.

Through implementation of a 30 m setback, the ongoing commercial operation of the site is not anticipated to result in negative impacts on the integrity, form or function of the significant woodlands.

### 7.3 Fish Habitat

The 30 m setback as outlined in Section 7.2 is sufficient to protect fish habitat on and off-site.

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

- Buffers should be comprised of a mixture of native, self-sustaining trees, shrubs, and tall grasses.
- All future development and construction activities within the study area, including ditching, culvert installation, erosion and sediment control and storm water management should be completed in accordance with Ontario Provincial Standard Specification 182 and OPSS 805.

- Silt fencing should be installed along all setbacks to provide visual demarcation of the setbacks to prevent machinery encroachment and sediment transport.
- Install and maintain effective sediment and erosion control measures before starting work.
- Schedule work to avoid wet, windy, and rainy periods.
- 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 areas adjacent to waterbodies.
- Downspouts should be directed towards lot-side swales that are in turn directed to roadside ditches and not adjacent surface water features. Rain gardens, soak-away pits or infiltration trenches should be utilized in areas of difficult topography.
- To protect fish habitat from contamination, it is recommended that all machinery be maintained in good working condition and that all machinery be fueled a minimum of 30 m from the high-water mark.
- Any temporary storage of aggregate material shall be set back from the water's edge by no less than 30 m and be contained by heavy-duty silt fencing.
- Maintain as much permeable surface area as possible in future development plans to limit the generation of stormwater runoff.

## 7.4 Significant Wildlife Habitat

### 7.4.1 *Candidate* Bat Maternity Colonies

The 30 m setback as outlined in Section 7.2 above to protect the integrity and ecological functions of the significant woodlands on-site, are sufficient to provide a wooded buffer to protect forest cover and maintain habitat for *candidate* bat maternity colonies.

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 determined 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 (>10cm 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 within between March 15 and November 30, further consultation with the MECP is required. GEMTEC would also recommends acoustic monitoring in 2024 to determine the presence or nascence of SAR bats within the study area.

### 7.4.2 *Candidate* Turtle Wintering Area

The 30 m setback as outlined in Section 7.2 is sufficient to protect *candidate* turtle wintering areas. Furthermore, the development envelope on the property parcel ensures that forest cover and surrounding summer habitat is maintained, which is important for turtles moving between habitats throughout the year.

To further protect potential migrating reptiles, exclusion fencing should be installed around the entire construction area prior to construction commencing to prohibit the movement of reptiles into the construction area. Exclusion fencing should follow the protocols outlined in the Species at Risk Branch: Best Practices Technical Note: Reptile and Amphibian Exclusion Fencing Version 1.1 (MNRF, July 2013). Following the installation of exclusion fencing, the construction area should be swept daily by a qualified professional to remove any reptiles which may be trapped within the exclusion fencing.

### 7.4.3 *Candidate* Woodland Amphibian Breeding Habitat

The 30 m setback as outlined in Section 7.2 is sufficient to protect *candidate* woodland amphibian breeding habitat on-site from negative impacts associated with the proposed severance.

Furthermore, to protect migrating amphibians associated with *candidate* breeding habitat on-site, exclusion fencing should be installed around the entire construction area prior to construction commencing to prohibit the movement of amphibians into the construction area.

### 7.4.4 Habitats of Special Concern and Rare Wildlife Species

#### 7.4.4.1 Eastern Wood-Pewee and Wood Thrush

Impacts to eastern wood-pewee and wood thrush primarily concern habitat loss and increased fragmentation, the development envelope presented above to protect significant woodlands on-site is sufficient to protect special concern and rare wildlife habitat from large amounts of habitat loss and fragmentation. To further minimize the impact of the proposed development on eastern wood-pewee and wood thrush habitat, vegetation removal should occur outside the key breeding bird period (typically March 31 to August 31) as identified by Environment Canada for the protection of nesting and foraging eastern wood-pewee and wood thrush and to avoid contravention of the Migratory Bird Convention Act. If vegetation clearing activities must take

place during the aforementioned timing window than a nest survey shall be conducted by a qualified professional.

#### 7.4.4.2 Snapping Turtle

The 30 m setback as outlined in Section 7.2 is sufficient to protect special concern and rare wildlife habitat snapping turtle. Furthermore, the development envelope ensures that forest cover and surrounding summer habitat is maintained, which is important for wetland amphibians and reptiles moving between habitats throughout the year.

To further protect potential migrating reptiles, exclusion fencing should be installed around the entire construction area prior to construction commencing to prohibit the movement of reptiles into the construction area. Exclusion fencing should follow the protocols outlined in the Species at Risk Branch: Best Practices Technical Note: Reptile and Amphibian Exclusion Fencing Version 1.1 (MNRF, July 2013). Following the installation of exclusion fencing, the construction area should be swept daily by a qualified professional to remove any reptiles which may be trapped within the exclusion fencing.

Additionally, all stockpiled material should be covered with a geotextile to prevent turtles from nesting in the material between May 1 and August 1 of any year.

## 7.5 Species at Risk

### 7.5.1 Least Bittern

The 30 m setback as outlined in Section 7.2 is sufficient to protect *candidate* least bittern nesting habitat on-site from negative impacts. Furthermore, the development envelope ensures that forest cover and surrounding PSW habitat is maintained, which is important for providing habitat cover and physical barriers between disturbance and potential marsh bird habitat, limiting human disturbance and human-wildlife interactions.

To further minimize the impact of the proposed project on least bittern, vegetation removal should occur outside the key breeding bird period (typically March 31 to August 31) as identified by Environment Canada for the protection of nesting and foraging least bittern and to avoid contravention of the Migratory Brid Convention Act.

If vegetation clearing activities must take place during the aforementioned timing window than a nest survey shall be conducted by a qualified professional.

### 7.5.2 Eastern Small-footed Myotis, Little Brown Myotis & Tri-colored Bat

As no critical habitat for SAR bats (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 should take place outside of the spring and summer active season (typically March 15 to November 30), when bats are more likely to be using

forest habitat. If vegetation clearing cannot avoid the active season, the consultation with the MECP is needed to determined 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 in center, 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 (>10cm in diameter) 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 to address impacts to SAR bats.

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

### 7.5.3 Blanding's Turtle

As discussed in Section 6.5.7, it is GEMTEC's opinion that the proposed project will not negatively impact the function of regulated habitat on-site. As such it is GEMTEC's opinion that standard avoidance and mitigation measures will be sufficient to mitigate impacts of the proposed project and no ministry consultation is required.

The 30 m setback as outlined in Section 7.2 is sufficient to protect wetland habitat from encroachment and habitat loss. Blanding's turtle and associated habitat will be further protected by the proposed development envelope. The development envelope will minimize destruction, disturbance and vegetation removal within Category 3 habitat. During construction Blanding's turtles will be excluded from the work area, but following construction completion the remining habitat (outside of new dwellings) will still be available for use by Blanding's turtles.

Through the use of the proposed wetland setback and the establishment of the development envelope, total impacted Category 3 habitat remains unchanged at 0.2 ha. Implementation of the setback and development envelope ensures that the migratory function of the Category 3 habitat associated with the wetlands will not be negatively impacted, post-construction Blanding's turtle will still be able to utilize the area for overland movement.

Provided the mitigation measures outlined below are implemented it is GEMTEC's opinion that further consultation with the MECP is not required. If the mitigation measures below cannot be implemented consultation with the MECP through an Information Gathering Form (IGF) submission may be required.

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

- Prior to any site work, reptile and amphibian exclusion fencing should be installed around the entire perimeter of the construction area to prevent the migration of Blanding's Turtles and other wildlife into the construction zone. The temporary exclusion fencing will also provide a visual demarcation of the development area for workers during construction. Exclusion fencing should follow the protocols outlined in the Species at Risk Branch: Best Practices Technical Note: Reptile and Amphibian Exclusion Fencing Version 1.1 (MNRF, July 2013).
- To protect aquatic habitat for Blanding's turtles, machinery should be maintained in good working condition and all machinery should be fueled a minimum of 30 m from the high water mark.

### 7.5.4 Black Ash

As discussed in Section 6.5.6 above, black ash, a plant SAR was identified on-site. The location of individual black ash trees beyond a 30 m search area from the woodland edge was not documented. Accordingly, GEMTEC proposes the implementation of a 30 m setback from the woodland edge for the protection of black ash.

Should potential future development occur within the lowland deciduous forest consultation with the MECP would be required to determine next steps for the property, in order to address impacts to black ash.

Healthy black ash trees, that are taller than 1.37 m or larger than 8 cm diameter at breast height (DBH) are protected under the Endangered Species Act. Healthy black ash trees that meet the size criteria are provided habitat protection corresponding to a 30 m radius from the stem of the tree.

Any work within 30 m of a healthy black ash tree that meets the size criteria will require consultation with the MECP before undertaking any activity that may kill, harm or take any of the black ash trees identified on-site.

## 7.6 Wildlife

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

- To protect wildlife during construction, construction should be completed in accordance with the best practices outlined in Protocols for Wildlife During Construction, from the City of Ottawa (Ottawa, 2022b), and Bird-Safe Design Guidelines from the City of Ottawa (Ottawa, 2022a).

- Vegetation removal should occur outside of March 15 to November 30 to avoid the key breeding bird period, active turtle season, and bat summer active season. The timing windows provides protection to migratory birds, roosting bats, migrating reptiles and amphibians and avoids contravention of the Migratory Bird Convention Act and Endangered Species Act. If vegetation clearing activities must take place during the aforementioned timing window than a nest survey and site sweep shall be conducted by a qualified professional to ensure no impacts to birds or turtles. If vegetation removal has the potential to impact SAR bats (i.e. vegetation removal within contiguous forested tracts) consultation with the MECP is required to determine whether the project will require authorization.
- Installation of silt fence barriers around the entire construction envelope to prohibit the emigration of wildlife into the construction area.
- Cover all stock piled 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 species at risk are present and to remove any wildlife from inside the construction area.
- Should any species at risk be discovered throughout the course of the proposed works, the species at risk biologist with the local MECP district should be contacted immediately and operations modified to avoid any negative impacts to species at risk 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;

- To protect trees identified to be retained during construction, the Critical Root Zone (CRZ) should be identified and fenced. The CRZ is defined as 10 cm from the base of the tree for every centimetre in diameter of the tree trunk measured at breast height.
- Maintain as much permeable surface as possible in future development plans to minimize the generation of stormwater runoff.
- 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 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 EIS is a zoning amendment for 6659 Franktown Road.

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

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

- No significant impacts to natural heritage features identified on-site, including provincially significant wetlands, significant woodlands, *candidate* significant wildlife habitat, habitat of species at risk and fish habitat, are anticipated due to the proposed project.
- The proposed project complies with the natural heritage policies of the Provincial Policy Statement.
- The proposed development complies with the natural heritage policies of the City of Ottawa Official Plan.

## 9.0 LIMITATION OF LIABILITY

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

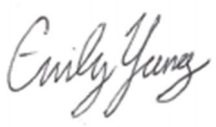
The investigation undertaken by GEMTEC with respect to this report and any conclusions or recommendations made in this report reflect the best judgements of GEMTEC based on the site conditions observed during the investigations undertaken at the date(s) identified in the report and on the information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



Emily Young, B.Sc.
Junior Biologist

Drew Paulusse, B.Sc.
Senior Biologist

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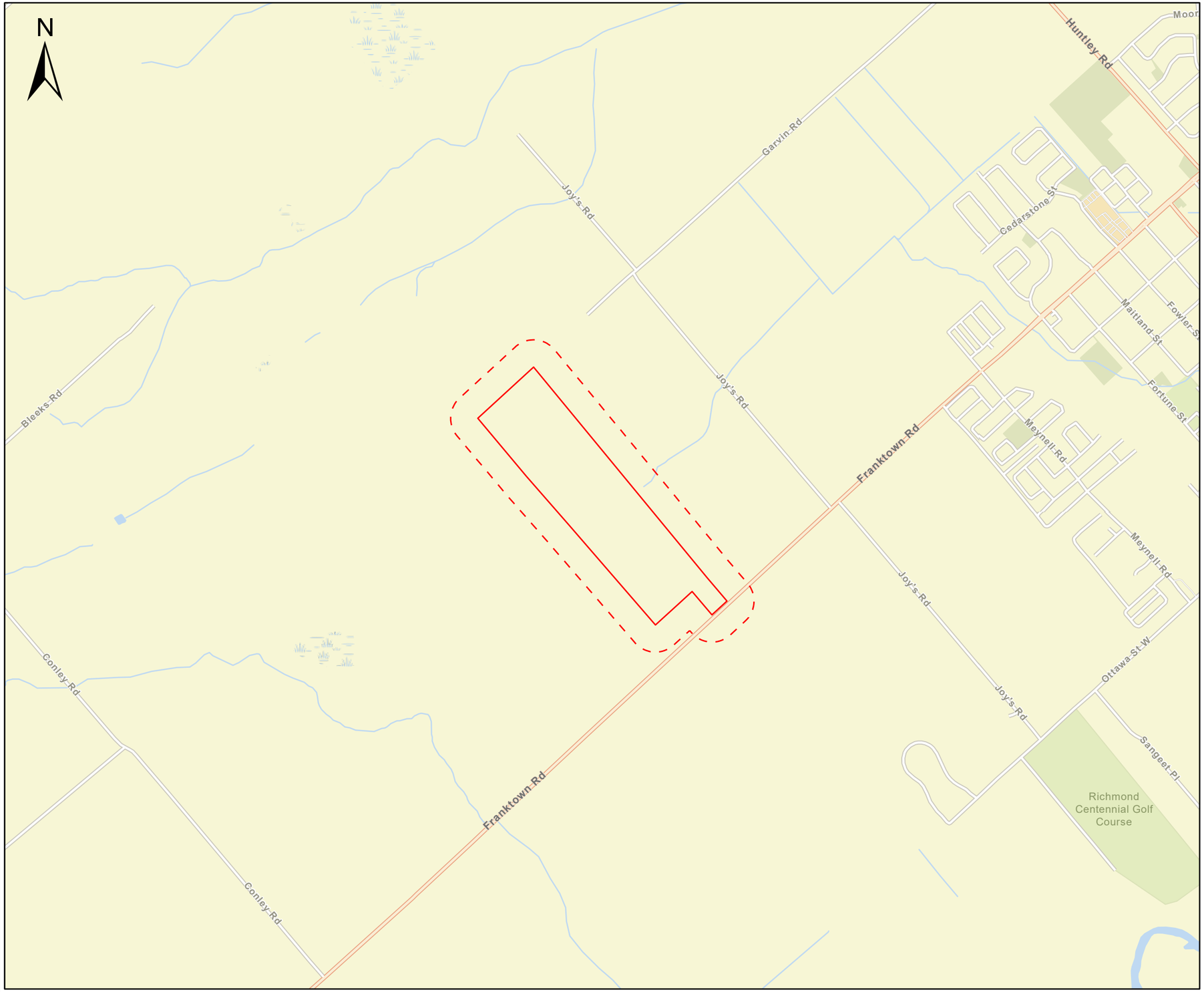
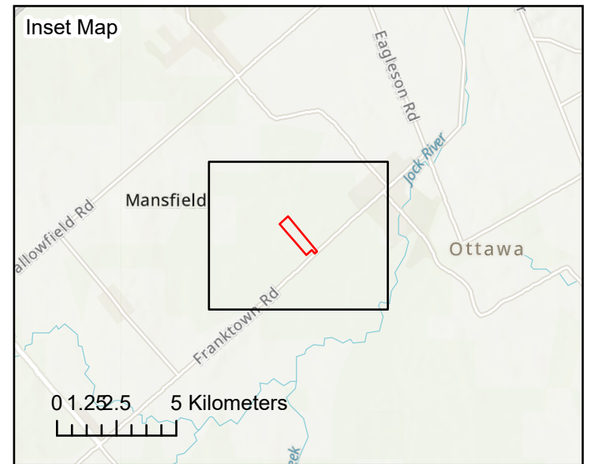
# APPENDIX A

Report Figures




## Legend

- Property Boundary
- Study Area

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|---|---|
| Air Rock Drilling | 100123.002 |

Location
6659 Franktown Road,
Ottawa, Ontario

| Drwn By: | Chkd By: | |
|---|---|---|
| EP | DP | Site Location |

| Date: August 2024 | Rev. | Figure: A.1 |
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## Legend

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

Scale
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Location
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Ottawa, Ontario

| Drwn By: | Chkd By: | |
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| EP | DP | Site Layout |

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## Legend

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

FOD7 = Lowland Deciduous Forest
CUM = Cultural Meadow
CVC = Commercial Property
SWD2-2 = Green Ash Mineral Deciduous Swamp
SWT2 = Alder Mineral Deciduous Thicket Swamp
MAM2 = Graminoid Meadow Marsh
MAM2-2 = Reed Canary Grass Graminoid Meadow Marsh

Scale
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Project: 100123.002

Location: 6659 Franktown Road, Ottawa, Ontario

Drwn By: EP | Chkd By: DP

Vegetation Communities

Date: August 2024



Rev. 0

Figure: A.3

Coordinate System: NAD 1983 UTM Zone 18N
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## Legend

- Property Boundary
- Study Area
- Watercourse
- Local Wetland
- Provincially Significant Wetland
- Significant Woodland
- Blanding's Turtle Category 2 Habitat (30 m)
- Blanding's Turtle Category 3 Habitat (250 m)

Scale
1:8,000
0 75 150 300 450 Meters

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| Air Rock Drilling | 100123.002 |

Location
6659 Franktown Road,
Ottawa, Ontario

| Drwn By: | Chkd By: | |
|---|---|---|
| EP | DP | Natural Heritage Features |

| Date: August 2024 | Rev. | Figure: A.4 |
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## Legend

- Property Boundary
- Study Area
- Watercourse
- Local Wetland
- Provincially Significant Wetland
- Significant Woodland
- Candidate Blanding's Turtle Category 1 Habitat (Overwintering and 30 m Radius)
- Blanding's Turtle Category 2 Habitat (30 m)
- Blanding's Turtle Category 3 Habitat (250 m)
- 30 m Setback

Scale
1:8,000
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Client: Air Rock Drilling

Project: 100123.002

Location: 6659 Franktown Road, Ottawa, Ontario

Drwn By: EP | Chkd By: DP | Mitigation Measures

Date: August 2024



Rev. 0

Figure: A.5

Coordinate System: NAD 1983 UTM Zone 18N
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Hybrid Reference Layer: Esri Community Maps Contributors, City of Ottawa, Province of Ontario, Esri Canada, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, US Census Bureau, USDA, NRCan, Parks Canada

# APPENDIX B

Site Photographs

Site Photograph 1 – Cultural Meadow


Site Photograph 2 – Cultural Meadow and Existing Laneway

Site Photograph 3 – Lowland Deciduous Forest

Site Photograph – Lowland Deciduous Forest

| | | | |
|---|---|---|---|
| GEMTEC Consulting Engineers and Scientists | Project<br>Environmental Impact Statement<br>6659 Franktown Road<br>Ottawa, Ontario | **APPENDIX B**<br>File No.<br>100123.00<br>2 | **Site Photographs** |


Site Photograph 5 – Meadow Marsh


Site Photograph 6 – Meadow Marsh


Site Photograph 7 – Green Ash Deciduous Swamp

Site Photograph 8 – Green Ash Deciduous Swamp

| | | | |
|---|---|---|---|
| GEMTEC Consulting Engineers and Scientists | Project<br>Environmental Impact Statement<br>6659 Franktown Road<br>Ottawa, Ontario | **APPENDIX B**<br>File No.<br>100123.00<br>2 | **Site Photographs** |

# APPENDIX C

Report Summary Tables

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

| Common Name | Scientific Name | S-Rank | Evidence |
|---|---|---|---|
| ***Avian Species*** | | | |
| American crow | *Corvus brachyrhynchos* | S5 | Observed on-site, heard calling |
| American goldfinch | *Spinus tristis* | S5 | Observed on-site, heard calling |
| American redstart | *Setophaga ruticilla* | S5B | Heard calling |
| American robin | *Turdus migratorius* | S5 | Observed on-site, heard calling |
| Black-and-white warbler | *Mniotilta varia* | S5B | Heard calling |
| Blue jay | *Cyanocitta cristata* | S5 | Observed on-site, heard calling |
| Broad-winged hawk | *Buteo platypterus* | S5B | Observed on-site, heard calling |
| Brown-headed cowbird | *Molothrus ater* | S5 | Observed on-site, heard calling |
| Chestnut-sided warbler | *Setophaga pensylvanica* | S5B | Heard calling |
| Common yellowthroat | *Geothlypis trichas* | S5B,S3N | Observed on-site, heard calling |
| Eastern phoebe | *Sayornis phoebe* | S5B | Observed on-site, heard calling |
| Eastern kingbird | *Tyrannus tyrannus* | S4B | Observed on-site, heard calling |
| Gray catbird | *Dumetella carolinensis* | S5B,S3N | Observed on-site, heard calling |
| Great crested flycatcher | *Myiarchus crinitus* | S5B | Observed on-site, heard calling |
| Hairy woodpecker | *Dryobates villosus* | S5 | Observed on-site, heard calling |
| Indigo bunting | *Passerina cyanea* | S5B | Observed on-site, heard calling |
| Mourning dove | *Zenaida macroura* | S5 | Observed on-site, heard calling |
| Northern flicker | *Colaptes auratus* | S5 | Observed on-site, heard calling |
| Northern rough-winged swallow | *Stelgidopteryx serripennis* | S4B | Observed on-site, heard calling |
| Northern waterthrush | *Parkesia noveboracensis* | S5B | Heard calling |
| Ovenbird | *Seiurus aurocapilla* | S5B | Heard calling |
| Pileated woodpecker | *Dryocopus pileatus* | S5 | Heard calling |
| Red-breasted nuthatch | *Sitta canadensis* | S5 | Heard calling |
| Red-eyed vireo | *Vireo olivaceus* | S5B | Heard calling |
| Red-winged blackbird | *Agelaius phoeniceus* | S5 | Observed on-site, heard calling |
| Rose-breasted grosbeak | *Pheucticus ludovicianus* | S5B | Heard calling |
| Song sparrow | *Melospiza melodia* | S5 | Observed on-site, heard calling |
| Turkey vulture | *Cathartes aura* | S5B,S3N | Observed on-site |
| Veery | *Catharus fuscescens* | S5B | Heard calling |
| Wilson's snipe | *Gallinago delicata* | S5B | Heard calling |
| White-throated sparrow | *Zonotrichia albicollis* | S5 | Observed on-site, heard calling |
| Wood thrush | *Hylocichla mustelina* | S4B | Heard calling |
| Yellow-bellied sapsucker | *Sphyrapicus varius* | S5B,S3N | Observed on-site, heard calling |
| Yellow-rumped warbler | *Setophaga coronata* | S5B,S4N | Heard calling |
| Yellow warbler | *Setophaga petechia* | S5B | Heard calling |
| ***Amphibian Species*** | | | |
| Gray treefrog | *Dryophytes versicolor* | S5 | Heard calling |
| Green frog | *Lithobates clamitans* | S5 | Heard calling |
| Northern leopard frog | *Lithobates pipiens* | S5 | Observed on-site |
| Spring peeper | *Pseudacris crucifer* | S5 | Heard calling |
| ***Reptilian Species*** | | | |
| Eastern gartersnake | *Thamnophis sirtalis sirtalis* | S5 | Observed on-site |
| Midland painted turtle | *Chrysemys picta marginata* | S4 | Observed on-site |
| **Mammalian Species** | | | |
| Eastern cottontail | *Sylvilagus floridanus* | S5 | Observed on-site |
| White-tailed deer | *Odocoileus virginianus* | S5 | Observed tracks on-site |

## TABLE C.1
## SUMMARY OF WILDLIFE OBSERVED ON-SITE AND ADJCENT TO SITE

**Notes:**
* Denotes a Species at Risk
Subnational Conservation Status Ranks:
S1 - Critically Imperilled, at very high risk of extirpation, very few populations or occurrences or very steep population decline
S2 - Imperiled, at high risk of extirpation, few populations or occurrences or steep population decline
S3 - Vulnerable, at moderate risk of extirpation, relatively few populations or occurrences, recent and widespread population decline
S4 - Apparently Secure, at a family low risk of extirpation, many populations or occurrences, some concern for local population decline
S5 - Secure, at very low or no risk of extirpation, abundant populations or occurrences, little to no concern for population decline
Qualifiers:
S#B - Conservation status refers to the breeding population of the species
S#N -Conservation status refers to the non-breeding population of the species
S#M - Migrant species, conservation status refers to the aggregating transient population of the species

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

| Woodland Criteria | Further Considered in EIS | Rationale |
|---|---|---|
| Woodland Size | Yes | Woodlands on-site and contiguous woodlands off-site meet the minimum size requirement for the planning area (> 50 ha). |
| Ecological Functions | | |
| a) Woodland Interior | No | Interior contiguous woodlands on-site do not meet the minimum size requirement for the planning area (> 8 ha). |
| b) Proximity | Yes | Woodlands on-site are proximal to fish habitat and compromise part of the Richmond Fen PSW Complex. |
| c) Linkages | Yes | The woodlands on-site provide linkages to other natural heritage features. |
| d) Water Protection | No | Woodland's on-site are not located within or adjacent to a sensitive or threatened watershed, sensitive groundwater discharge or recharge or sensitive headwater area. |
| e) Diversity | No | Speceis composition within the on-site woodlands is well represented on the landscape and no rare species communities were observed. |
| Uncommon Characteristics | No | Woodlands on-site do not have a unique species composition, vegetation communities with a tanking 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 value. |

**TABLE C.3**
**SCREENING RATIONALE FOR HABITATS OF SEASONAL CONCENTRATION AREAS**

| Wildlife Habitat | Further Considered in EIS | Rationale |
|---|---|---|
| Waterfowl Stopover and Staging Areas | No | Based on review of publically available data from the OMNRF on Land Information Ontario Geo-hub, no waterfowl stopover and staging areas were identified on-site. Wetland habitat on-site unlikely to provide suitable conditions to support waterfowl stopover and staging areas (aquatic). No habiat for terrestrial stopover and staging areas was present on-site. |
| 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 | Suitable forest habitat occurs on-site however, no upland habitat that meets the minimum size criteria of greater than 15 ha is present on-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 may provide suitable habitat to support bat maternity colonies. |
| Turtle Wintering Area | Yes | The Richmond Fen PSW may provide suitable overwintering turtle habitat. |
| Reptile Hibernaculum | No | No structures such as large rock piles, cervices or other karstic features have been identified on-site. The observed bedrock outcrops on-site consist of a pavement like structure with no apparent voids for hibernacula habitat. |
| Colonial Bird Nesting Habitat | No | No suitable habitat located on-site or within the study area to support colonial bird nesting (i.e. no eroding banks, cliff faces, sandy hills, swamps, rocky islands/peninsula, etc.). |
| Migratory Butterfly Stopover Area | No | No structures such as large rock piles, cervices or other karstic features have been identified on-site. The observed bedrock outcrops on-site consist of a pavement like structure with no apparent voids for hibernacula habitat. |
| Landbird Migratory Stopver 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 | As outlined in the the Signficant Wildlife Habitat Criteria Schedules (OMNRF, 2015) winter deer yards and deer managment are an MNRF responsibility. Based on review of publically available data from the OMNRF on Land Information Ontario Geo-hub, no deer yards or winter congregation areas have been identified on-site. The closest Stratum I deer yard is 7.43 km to the southwest. |

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

| Specialized Wildlife Habitat | Further Considered in EIS | Rationale |
|---|---|---|
| Waterfowl Nesting Area | No | The site lacks suitable upland habitat adjacent to wetlands necessary to support waterfowl nesting. |
| Bald Eagle and Osprey Nesting, Foraging and Perching Habitat | No | No suitable habitat is located on-site or within the study area to support bald eagles or osprey. Nesting sites for these species are uncommon in Ecoregion 6E (MNRF, 2012). |
| 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. Contiguous forest stands >30 ha are present on-site however, interior forest habitat >10 ha with a 200 m buffer is not present on-site. No sticks nests were observed on-site. |
| Turtle Nesting Habitat | No | No suitable open areas adjacent to waterbodies occurs on-site to provide suitable turtle nesting habitat. |
| Seeps and Springs | No | No seeps or spring were identified on-site during the preliminary site investigation. |
| Woodland Amphibian Breeding Habitat | Yes | The Richmond Fen PSW may provide suitable habitat to support woodland amphibian breeding habitat. |
| Wetland Amphibian Breeding Habitat | No | No suitable wetland habitat has been identified on-site to support wetland amphibian breeding habitat. |
| Woodland Area-Sensitive Bird Breeding Habitat | No | No woodlands of adequate size occur on-site to support woodland area-sensitive bird breeding habitat. Needs large mature forest > 30 ha, with interior habitat at least 200 m from forest edge |

**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 | Yes | Portions of the Richmond Fen PSW may provide suitable habitat to support marsh breeding birds. |
| Open Country Breeding Bird Habitat | No | Cultural meadow habitat on-site does not meet the minimum size criteria to support open country bird breeding habitat. |
| 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 thicket habitat on-site to support early successional breeding bird habitat. |
| Terrestrial Crayfish Habitat | No | Terrestrial crayfish are only found within southwestern Ontario (MNRF, 2012). |
| Special Concern and Rare Wildlife Species | Yes | Occurrence data from the NHIC indicates that five species of special concern have the potential to occur within the study area: eastern wood-pewee, golden-winged warbler, wood thrush, yellow rail and snapping turtle. No other species of special concern or rare wildlife species were observed during the site investigations. No other species of special concern or rare wildlife have been documented on-site according to NHIC occurrence data. |

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

| General Habitats of Species of Conservation Concern | Further Considered in EIS | Rationale |
|---|---|---|
| Amphibian Movement Corridor | No | As outlined in the Significant Wildlife Criteria Schedules, amphibian movement corridors should only be considered when breeding amphibian habitat for wetlands has been identified on-site. Only woodland breeding amphibian habitat has been identified on-site. As no wetland breeding amphibian habitat was identified on-site, amphibian movement corridors are not present on-site. |
| Deer Movement Corridor | No | No deer wintering habitat has been identified on-site. |

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

| Species | ESA Status | Regional Distribution | Habitat Use | Probability of | Rationale |
|---|---|---|---|---|---|
| ***Avian*** | | | | | |
| Bank Swallow | Threatened | 12 confirmed, 2 probable and 8 possible nests in recent OBBA. | Colonial nester, burrows in eroding silt, to sand banks, sand pit walls, etc. | Low | Suitable habitat (exposed bands, pit walls) is not present on-site to support nesting. |
| Barn Swallow | Special Concern | 33 confirmed, 2 probable, and 3 possible nests in recent OBBA. | Nests in barns and other semi-open structures. Forages over open fields and meadows. | Low | Suitable nesting structures are not present on-site, but may be present in the broader study area. The site does not provide preferred foraging habitat. |
| Black Tern | Special Concern | 4 confirmed nests in recent OBBA. | Breed in loose colonies in marshes. | Low | No suitable wetland habitat present on-site or within study area. |
| Bobolink | Threatened | Widespread in the Ottawa region, confirmed and probable nests found in 39 or 40 local atlas squares during recent OBBA. Critical habitat identified in northwestern, southern and eastern Ottawa. | Nests in dense tall grass fields and meadows, low tolerance for woody vegetation. | Low | Potentially suitable grassland habitat adjacent to site in agricultural fields but no suitable tall grass habitat on-site to support Bobolink. Species not observed during field investigations. |
| Canada Warbler | Special Concern | 1 confirmed, 2 probable, 6 possible nests during recent OBBA. No critical habitat identified in region. | Prefers wet forests with dense shrub layers | Low | Potentially suitable wet forest is present on-site, however dense shrub layers are not present within the wet forest habitat. Species not observed during field investigations. |
| Cerulean Warbler | Threatened | No nests reported during recent OBBA. SARO and SARA range maps include part of Ottawa. | Prefers mature deciduous forest habitat. | Low | Preferred mature deciduous forest habitat is not present on-site or within study area. |
| Chimney Swift | Threatened | 3 confirmed, 2 probable, and 11 possible nests in recent OBBA. Critical habitat identifeid in downtown/inner urban areas. | Nests in traditional-style open brick chimneys. | Low | Suitable nesting habitat is not available in the study area. Occurrence data from Swift Watch and the OBBA does not indicate a presence of chimney swift in the area. Species not observed during field investigations. |
| Common Nighthawk | Special Concern | 6 probable, 5 possible nests reported in recent OBBA. No critical habitat identified in Ottawa region. | Nests in a variety of open sites: beaches, fields and gravel rooftops. | Low | Preferred habitat is not present on-site or within study area. Site lacks preferred gravel and rock outcrops within open area habitats. |
| Eastern Meadowlark | Threatened | 22 confirmed, 11 probable and 3 possible nests in recent OBBA. Critical habitat identified in northwestern Ottawa. | Nests and forages in dense tall grass fields and meadows, higher tolerance to woody vegetation. | Low | Potentially suitable grassland habitat adjacent to site in agricultural fields but no suitable tall grass habitat on-site to support Eastern Meadowlark. Species not observed during field investigations. |
| Eastern Whip-poor-will | Threatened | Primary breeding range located east, west and south of the Precambrian shield. 7 probable and 10 possible nests in recent OBBA. Critical habitat tentatively identified in 4 squares in western Ottawa. | Nests on the ground in open deciduous or mixed woodlands with little underbrush, and bedrock outcrops. | Low | No suitable woodland habitat occurs on-site or within study area. |
| Eastern Wood-Pewee | Special Concern | 4 possible, 15 probable and 19 confirmed nests in recent OBBA for Ottawa area | Woodland species, often found near clearings and edge habitat. | Moderate | Woodlands habitat on-site may provide suitable habitat for eastern wood-pewee. NHIC indicates species within 1 km of site. Species not observed during field investigations. |
| Evening Grosbeak | Special Concern | 5 confirmed, 6 probable and 8 possible nests in recent OBBA. | Nests in trees or large shrubs, preference to large coniferous forests, will use deciduous. Overwinters in Ottawa. | Low | No suitable coniferous woodlands on-site. Deciduous woodlands may provide potential habitat. |
| Golden-winged Warbler | Special Concern | 1 confirmed, 1 probable nest in recent OBBA. Critical habitat identified in Quebec, northwest of Ottawa. | Ground nesting, edge species. Breeds in successional scrub habitats surrounded by forests. | Moderate | No suitable nesting habitat to support golden-winged warbler on-site. NHIC indicates species within 1 km of site. Species not observed during field investigations. |
| Grasshopper Sparrow | Special Concern | 4 confirmed, 5 probable and 2 possible in recent OBBA. | Ground-nesting grassland species. Prefers fields with low sparse vegetation on sand, alvars or poor soils. | Low | Preferred grassland habitat is not present on-site or within the study area. |

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

| | | | | | |
|---|---|---|---|---|---|
| Least Bittern | Threatened | 1 confirmed nesting, 3 probable and 4 possible in recent OBBA. Mississippi Snye has been identified as regional critical habitat in federal recovery strategy. | Prefers marshes, shrub swamps, usually near cattails | Moderate | Wetlands on-site may provide suitable habitat. |
| Loggerhead Shrike | Endangered | Possible nests reported in Burnt Lands Provincial Park (2018) and in Richmond area (2019). Critical habitat identified in Montague Township. | Prefers grazed pastures with short grass and scattered shrubs, especially hawthorn. | Low | Preferred pasture habitat and shrub vegetation does not occur on-site. |
| Olive-sided Flycatcher | Special Concern | 1 probable, 1 possible nest in recent OBBA. | Forest edge species, forages in open areas from high vantage points in trees. | Low | Preferred grassland habitat is not present on-site or within study area. |
| Peregrine Falcon | Special Concern | 1 confirmed nest in recent OBBA and second nest established in 2011 in the Ottawa downtown. | Nests on cliffs near water and on more anthropogenic structures such as tall buildings, bridges, and smokestacks. | Low | Site lacks suitable nesting structure for peregrine falcon. |
| Red-headed Woodpecker | Endangered | 1 confirmed, 1 probable and 2 possible during recent OBBA. Critical habitat identified in western Ottawa. Nesting pair reported from village of Constance Bay in recent years. | Prefers open deciduous woodlands, particularly those dominated by oak and beech. | Low | Preferred woodland habitat is not present on-site. |
| Rusty Blackbird | Special Concern | No nests in recent OBBA. Primarily observed during migration only. | Wet wooded or shrubby areas (nests at edges of Boreal wetlands) | Low | Suitable habitat does not occur on-site. |
| Short-eared Owl | Threatened | 1 confirmed, 2 probable, 2 possible nests in recent OBBA. | Ground nester, prefers open habitats, fields and marshes. | Low | No suitable open field or open marsh habitat on-site. |
| Wood Thrush | Special Concern | 5 possible, 15 probable, and 16 confirmed nests in recent OBBA for Ottawa area. | Prefers deciduous or mixed woodlands. | High | Woodlands on-site have the potenital to support wood thrush. NHIC indicates species within 1 km of site. Species was observed during field investigations. |
| Yellow Rail | Special Concern | Reported nesting in Richmond Fen | Nests in sedge meadows and marshes. | Moderate | Wetlands on-site may provide suitable habitat. NHIC indicates species within 1 km of site. Species not observed during field investigations. |
| ***Mammalian*** | | | | | |
| Eastern small-footed Myotis | Endangered | Rare throughout its range. Historical records in downtown Ottawa. | 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. Potential summer habitat present within study area. |
| Little Brown Myotis | Endangered | Various sites in central and western parts of the Ottawa area. Critical habitat (hibernacula) identified northwest of Ottawa. | 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. Potential summer habitat present within study area. |
| Northern myotis (Northern Long-eared Bat) | Endangered | Historical records in downtown Ottawa, more recently in sites to east (Orleans, Clarence-Rockland). Critical habitat (hibernacula) identified northwest of Ottawa. Ottawa and region is at southern most limit of range. | Occurs throughout eastern North America in associated with Boreal forests. Roosts mainly in trees, occasionally anthropogenic structures during summer (Environment Canada, 2015). Overwinters in caves and abandoned mines. | Low | Species affinity is for Boreal forests and species rarely roosts in anthropogenic structures. |

| | | | | | |
|---|---|---|---|---|---|
| Tri-colored Bat | Endangered | Historical records from sites in urban Ottawa and Lanark County. Critical habitat (hibernacula) identified northwest of Ottawa. | Roosts in trees, rock crevices and occasionally buildings during summer. Overwinters in caves and mines. | Moderate | Potentially suitable anthropogenic structures adjacent to site. Potential summer habitat present within study area. |
| ***Reptilian*** | | | | | |
| Blanding's Turtle | Threatened | Scattered throughout Ottawa with numerous sites in western half of City. Critical habitat present in Ottawa. | Inhabits quiet lakes, streams and wetlands with abundant emergent vegetation. Frequently occurs in adjacent upland forests. | Moderate | Occurrence data from the Herp Atlas indicates species has been observed within 10 km of the site, as recently as 2019. NHIC observations within 1 km of site. However the site does not provide wetland habitat typically preferred by Blanding's turtles. |
| Snapping Turtle | Special Concern | Widespread and abundant in Ottawa and surrounding region. | Highly aquatic species, found in a wide variety of wetlands, water bodies and watercourses. | Moderate | Occurrence data from NHIC indicates the species has been observed within 1 km of the site, as recently as 2007. Herp Atlas occurrence data indicates the species has been observed within 10 km of the site, as recently as 2019. Watercourses associated with the Richmond Fen PSW may provide potentially suitable aquatic habitat for snapping turtle. |
| ***Plants*** | | | | | |
| American Ginseng | Threatened | Critical habitat broadly identified in the Ottawa area. Specific locations are confidential. | Rich, moist, relatively mature deciduous forests. | Low | Suitable habitat does not occur on-site. |
| Black Ash | Endangered | Scattered throughout. | Predominantly a wetland species, found in swamps, floodplains and fens. | High | Marsh wetland communities on-site may provide suitable habtiat. Species observed during field investigations. |
| Butternut | Endangered | Range is confined to eastern and southern Ontario. Widespread in Ottawa and region. | Inhabits a wide range of habitats including upland and lowland deciduous and mixed forests. | Moderate | A portion of the site is open and in a regenerative state. |
| ***Lichens*** | | | | | |
| Pale-bellied Frost Lichen | Endangered | Historical records in downtown area (extirpated locally). No critical or regulated habitat identified in Ottawa. | Grows on the bark of hardwood trees such as white ash, black walnut, American elm and ironwood. Can also be found growing on fence posts and boulders. | Low | Species believed to be extirpated from the Ottawa area. |

# APPENDIX D

2019 Wetland Boundary Evaluation (GEMTEC)

GEMTEC
Consulting Engineers and Scientists

Houle Chevrier Engineering Ltd.
32 Steacie Drive
Ottawa, Ontario
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January 8, 2020

File: 65014.01

Scott Smithers, Management Biologist
Ontario Ministry of Natural Resources and Forestry
10-1 Campus Drive
Kemptville, Ontario
K0G 1J0

Attention: Scott Smithers

**Re: Richmond Fen Provincially Significant Wetland Complex**
**Lot 19, Concession 4, Geographic Township of Goulbourn, City of Ottawa**

## INTRODUCTION

Please accept this technical memorandum as the supporting document providing a summary of the rationale, field methodology and results of the work undertaken to revise a portion of the Richmond Fen provincially significant wetland (PSW) complex, located on Lot 20, Concession 4, Geographic Township of Goulbourn. The property is municipally addressed as 6707 Franktown Road, Ottawa.

The Richmond Fen PSW, herein referred to as the PSW, is a very large 4,088 hectare (ha) palustrine wetland, comprised of numerous complexes of swamp, marsh and fen wetland vegetation communities.

The principal focus of this boundary evaluation is the portion of the PSW located on the southern portion of Lot 19, Concession 4, in the Geographic Township of Goulborun. The site location and layout is illustrated on Figure A.1 in Attachment A.

## METHODOLOGY

To complete this re-evaluation of the PSW boundary, a desktop review was conducted which included a review of recent and historical air photos accessible from the Natural Heritage Information Centre (OMNRF, 2013), GeoOttawa (Ottawa, 2019) and through Rideau Valley Conservation Authority's GeoPortal (RVCA, 2019) to assess vegetation communities prior to undertaking field investigations.

Field investigations were completed on September 24, October 11 and October 25, 2019, to re-assess the PSW boundary.

During site investigations, dominant vegetation within upland and wetland communities was documented with a focus on obligate wetland plants. The revised boundary was established using the 50% rule as outlined in the Ontario Wetland Evaluation System Manual for Southern Ontario (OMNRF, 2014).

During both site investigations, vegetation communities were assessed by completing a series of transects running perpendicular to the dominant surface water feature, such that changes in dominant vegetation, both community form and individual species, could be determined based on a continuum from drier to wetter soils. The revised wetland boundary was marked in the field using flagging tape and GPS coordinates recoded using a handheld GPS unit.

To support the revised wetland boundary, substrates were investigated at four locations within the transitional areas located between the narrow-leaved emergent marsh and the deciduous swamp communities and their adjacent terrestrial vegetation communities. Boreholes were advanced on October 25, 2019, using a handheld soil auger and were advanced from ground surface to 120 cm below ground surface. Soil from each borehole was assessed in the field to determine their dominant texture, moisture regime and depth to mottles and gleys in accordance with the protocols described in the Field Guide to Substrates of Ontario (OMNRF, 2015).

## RESULTS

Results of the two field investigation identified the presence of four wetland vegetation community forms: deciduous swamp, tall shrub swamp, robust emergent marsh and narrow-leaved emergent marsh. Table 1 below provides a summary of the vegetation communities assessed.

**Table 1 - Vegetation Community Forms and Dominant Species**

| Map Code | Dominant Form | Other Forms | # Forms | Dominant Species | Area (ha) | Dominant Substrate | Soil Moisture Value |
|---|---|---|---|---|---|---|---|
| S1 | h | ts, gc | 3 | *Fraxinus pennsylvanica, Acer rubrum, Alnus viridis, Symphyotrichum lanceolatum,* | 24.6 | Silty Sand | 4 |
| S2 | ts | re | 2 | *Alnus viridis, Salix petiolaris, Typha latifolia* | 1.8 | Silty Sand | - |
| M1 | re | - | 1 | *Typha latifolia* | 2.4 | Silty Sand | - |
| M2 | ne | gc | 2 | *Phalaris arundinacea, Symphyotrichum lanecolatum* | 2.4 | Silty Sand | 6 |

The revised wetland boundary was established following the 50% rule as outlined in the Ontario Wetland Evaluation System manual for Southern Ontario (OMNRF, 2014). The primary point

along each vegetation transect where wetland herbaceous and woody vegetation became dominant was determined to be the wetland boundary. The dominant wetland vegetation species relied upon for establishing the boundary included green alder (*Alnus viridis*), reed canary grass (*Phalaris arundinaeca*) and panicled aster (*Symphyotrichum lanecolatum*) in combination with soil moisture value from boreholes. Vegetation community forms are presented on Figure A.1 in Attachment A. Photographs of the wetland boundary are provided in Attachment B .

Results of the borehole investigation indicated that substrates within the study area are predominately characterized as moist to very moist, deep, mineral based, silty fine-sand. Hydric soils, a soil with a moisture of five or greater were encountered within the narrow-leaved emergent vegetation community. Based on the presence of standing water within the tall shrub and robust emergent vegetation communities, soil moisture values were not calculated as they were interpreted to be greater than 6 due to their saturated state.

## CONCLUSION

Based on the existing PSW mapping and the investigation summarized above, it is GEMTEC's opinion that the existing PSW mapping is out dated and that the wetland conditions on Lot 19, Concession 4, Geographic Township of Goulbourn have changed following the time since the original evaluation due to either natural or anthropogenic alteration to the hydrologic regime within the broader area.

As such, GEMTEC recommends that PSW boundary be revised to reflect the extents of wetland vegetation communities as presented on Figure A.1. The revised wetland boundary will result in the loss of 5.8 ha of the existing 4,088 ha of the Richmond Fen PSW, approximately 0.1% of the total PSW.

## CLOSURE

We trust this letter is sufficient for your current requirements. If you have any questions concerning to the information presented, please contact the undersigned.

Sincerely,

Drew Paulusse, B.Sc.
Senior Biologist

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# ATTACHMENT A

Figure A.1 – Revised Wetland Boundary


## Legend

- Property Boundary
- Study Area
- Vegetation Community

Scale
1:6,700
0 50 100 200 300 400 Meters

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

| Client: | Project: |
|---|---|
| Brian Rotor | 65014.01 |

Location
6707 Franktown Road
Geographic Township of Goulbourn
Ottawa, Ontario

| Drwn By: | Chkd By: | |
|---|---|---|
| TW | DP | Revised Wetland Boundary |

| Date: January 2020 | Rev. | Figure: A.1 |
|---|---|---|
|  | 0 | |

P:\7. Environmental\GIS\Biology\65014.01\Maps\65014.01_WetlandEvaluation.mxd
Coordinate System: NAD 1983 UTM Zone 18N
Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

# ATTACHMENT B

Photolog

Deciduous Swamp Community – September 25, 2019

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Deciduous Swamp Community – September 25, 2019

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Narrow-Leaved Emergent Community Looking North to Robust Emergent Community – September 25, 2019

GEMTEC
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Narrow-leaved Emergent Community Looking West towards Tall Shrub Community – October 25, 2019

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Narrow-leaved Emergent Community Looking South towards Terrestrial Community – October 25, 2019

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Narrow-leaved Emergent Community Looking South towards Terrestrial Community (at Wetland Boundary) – October 25, 2019

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Soil Profile in Terrestrial Community – Moisture Regime 4

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Soil Profile in Narrow-leaved Emergent Community – Moisture Regime 6

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# APPENDIX E

MNRF Correspondence for Wetland Boundary Evaluation

## Taylor Warrington

**From:** Drew Paulusse
**Sent:** March 30, 2020 10:58 AM
**To:** Taylor Warrington
**Subject:** FW: Richmond Fen

Please include the following email in an appendix in the Rotar EIS as justification/backup of MNRF approval.

Due to the COVID issues, all MNRF staff are at home and no GIS updates are being done. Obviously we can't submit without the revised wetland mapping so email correspondence was recommended to allow us to get the EIS in to the City.

Any questions, give me a shout.

Thanks,

Drew

---

**From:** Smithers, Scott (MNRF) [mailto:scott.smithers@ontario.ca]
**Sent:** March 30, 2020 10:52 AM
**To:** Drew Paulusse <drew.paulusse@gemtec.ca>
**Subject:** RE: Richmond Fen

Hi Drew

I have reviewed your wetland boundary revisions and am in agreement with your changes.
I have submitted these changes for upload into MNRF's provincial data base.
Under the current unusual circumstances this process may take some time to complete.
I will advise you once our GIS layers have been updated successfully but in the mean time it is safe to consider these changes approved.

Scott

---

**From:** Drew Paulusse <drew.paulusse@gemtec.ca>
**Sent:** March-05-20 1:23 PM
**To:** Smithers, Scott (MNRF) <scott.smithers@ontario.ca>
**Subject:** RE: Richmond Fen
**Importance:** High



Hey Scott,

Wondering if this boundary has been processed yet or not? We would like to proceed with submitting our EIS but need ensure that the PSW boundary is updated first.

Thanks,

Drew

**From:** Drew Paulusse
**Sent:** February 18, 2020 3:28 PM
**To:** 'Smithers, Scott (MNRF)' <scott.smithers@ontario.ca>
**Subject:** RE: Richmond Fen

Hey Scott,

Just following up on this file to see if you have had time to flush out a revised boundary?

Thanks,

Drew

---

**From:** Drew Paulusse
**Sent:** February 3, 2020 12:27 PM
**To:** Smithers, Scott (MNRF) <scott.smithers@ontario.ca>
**Subject:** FW: Richmond Fen

Hi Scott,

Updated files attached, i.e., showing PSW extents on adjacent properties. As a result, the property to the east has had both PSW area added and removed.

Thanks,

Drew

---

**From:** Taylor Warrington
**Sent:** February 3, 2020 11:45 AM
**To:** Drew Paulusse <drew.paulusse@gemtec.ca>
**Subject:** RE: Richmond Fen

Following shapefiles (SHP) are zipped:

1) Vegetation Communities on-site
2) Site Property Boundary
3) Wetland File with Richmond Fen PSW, New/added PSW, Deleted PSW and Local Wetland

Two figures, one with local wetland displayed and one without.

---

**From:** Drew Paulusse <drew.paulusse@gemtec.ca>
**Sent:** January 29, 2020 9:24 AM
**To:** Taylor Warrington <taylor.warrington@gemtec.ca>
**Subject:** FW: Richmond Fen

---

**From:** Smithers, Scott (MNRF) [mailto:scott.smithers@ontario.ca]
**Sent:** January 28, 2020 4:44 PM
**To:** Drew Paulusse <drew.paulusse@gemtec.ca>
**Subject:** RE: Richmond Fen

Thanks Drew

S

**Scott Smithers**
**Management Biologist**
**Kemptville District Office**
**Ministry of Natural Resources and Forestry**
**(T) 613-258-8614**
**(F) 613-258-3920**
**Scott.smithers@ontario.ca**

---

**From:** Drew Paulusse <drew.paulusse@gemtec.ca>
**Sent:** January-28-20 4:41 PM
**To:** Smithers, Scott (MNRF) <scott.smithers@ontario.ca>
**Subject:** RE: Richmond Fen



Hi Scott,

I completely understand where your coming from; for some reason I thought we had to limit our interpretation to our property. I'll work to revise the figures to reflect my assessment of the PSW on the adjacent properties.

Thanks,

Drew

---

**From:** Smithers, Scott (MNRF) [mailto:scott.smithers@ontario.ca]
**Sent:** January 28, 2020 4:38 PM
**To:** Drew Paulusse <drew.paulusse@gemtec.ca>
**Subject:** RE: Richmond Fen

Hi Drew

I notice in the mapping you have provided that the investigated area includes a buffer area outside of the property you are assessing but your proposed wetland boundary lines do not extend beyond the property lines. I am left now to try and determine if the changes to the wetland that you have identified extend over onto the properties to the east and west of your clients property – I assume that the changes to the wetland from the original assessment do not end abruptly at the property boundaries.
So, what can you tell me about the habitat immediately east and west of the portion of the PSW that you have identified as being no longer wetland? When I make the changes to our GIS layers, I need to try and make sure the lines make sense and not just follow property boundaries. In the absence of any additional information from you I will have to try and use the air photos to come up with appropriate boundaries on the other two properties impacted – which I would rather not have to do.

Hoping you can help me out.

S

**Scott Smithers**

**Management Biologist**
**Kemptville District Office**
**Ministry of Natural Resources and Forestry**
**(T) 613-258-8614**
**(F) 613-258-3920**
**Scott.smithers@ontario.ca**

---

**From:** Drew Paulusse <drew.paulusse@gemtec.ca>
**Sent:** January-22-20 9:14 AM
**To:** Smithers, Scott (MNRF) <scott.smithers@ontario.ca>
**Subject:** RE: Richmond Fen



Hi Scott,

Attached, as requested.

Thanks,

Drew

---

**From:** Smithers, Scott (MNRF) [mailto:scott.smithers@ontario.ca]
**Sent:** January 20, 2020 2:51 PM
**To:** Drew Paulusse <drew.paulusse@gemtec.ca>
**Subject:** RE: Richmond Fen

Hi Drew

I just reviewed this report and everything looks fine and agreeable to me so far.
To speed the process up I was wondering if you could send me a map with the deleted portions of the PSW highlighted.
Please also forward me your supporting shapefiles.

Scott

**Scott Smithers**
**Management Biologist**
**Kemptville District Office**
**Ministry of Natural Resources and Forestry**
**(T) 613-258-8614**
**(F) 613-258-3920**
**Scott.smithers@ontario.ca**

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**From:** Drew Paulusse <drew.paulusse@gemtec.ca>
**Sent:** January-16-20 1:46 PM
**To:** Smithers, Scott (MNRF) <scott.smithers@ontario.ca>
**Subject:** RE: Richmond Fen

**CAUTION -- EXTERNAL E-MAIL - Do not click links or open attachments unless you recognize the sender.**

Thanks Scott.

---

**From:** Smithers, Scott (MNRF) [mailto:scott.smithers@ontario.ca]
**Sent:** January 16, 2020 1:37 PM
**To:** Drew Paulusse <drew.paulusse@gemtec.ca>
**Subject:** RE: Richmond Fen

Got it Drew
I am reviewing this afternoon

S

**Scott Smithers**
**Management Biologist**
**Kemptville District Office**
**Ministry of Natural Resources and Forestry**
**(T) 613-258-8614**
**(F) 613-258-3920**
**Scott.smithers@ontario.ca**

---

**From:** Drew Paulusse <drew.paulusse@gemtec.ca>
**Sent:** January-08-20 3:36 PM
**To:** Smithers, Scott (MNRF) <scott.smithers@ontario.ca>
**Subject:** RE: Richmond Fen

**CAUTION -- EXTERNAL E-MAIL - Do not click links or open attachments unless you recognize the sender.**

Hi Scott,

Attached is the GEMTEC boundary revision memo 6707 Franktown Road, Richmond. I had initially sent it out in early December but it appears that it never went through. Can you please confirm receipt once received?

If you have any questions or comments, please let me know.

Thanks,

Drew

GEMTEC
CONSULTING ENGINEERS AND SCIENTISTS

**Drew Paulusse**, B.Sc.
Manager of Environmental Services
Ottawa, ON
tel: 613.836.1422 x260 / toll-free: 1.877.243.6832
mobile: 613.222.2592 / fax: 613.836.9731

---

**From:** Smithers, Scott (MNRF) [mailto:scott.smithers@ontario.ca]
**Sent:** October 22, 2019 12:13 PM
**To:** Drew Paulusse <drew.paulusse@gemtec.ca>
**Subject:** RE: Richmond Fen

Hi Drew,

Sorry for not responding earlier; I was away moose hunting in Nipigon for 10 days.
Unfortunately a decision was recently made that MNRF staff can no longer participate in on-the-ground wetland boundary reviews. Sorry
This client will need to get you to complete a proper OWES boundary evaluation for the property and forward the results and accompanying photos and shapefiles to me for review and hopefully validation.
I wish I could be of more assistance. Strange times

Off to Pelee Island this afternoon for 3 days of pheasant hunting with Kerry Coleman 😊

S

**Scott Smithers**
**Management Biologist**
**Kemptville District Office**
**Ministry of Natural Resources and Forestry**
**(T) 613-258-8614**
**(F) 613-258-3920**
**Scott.smithers@ontario.ca**

---

**From:** Drew Paulusse <drew.paulusse@gemtec.ca>
**Sent:** October-22-19 10:29 AM
**To:** Smithers, Scott (MNRF) <scott.smithers@ontario.ca>
**Subject:** RE: Richmond Fen

Hey Scott,

Any thoughts on the email below?

Cheers,

Drew

---

**From:** Drew Paulusse
**Sent:** October 16, 2019 12:50 PM
**To:** Smithers, Scott (MNRF) <scott.smithers@ontario.ca>
**Subject:** Richmond Fen

Thanks Scott.

I have another wetland boundary project that I am working on at 6707 Franktown Road, Richmond. The client would like some relief from the mapped PSW boundary which cuts across his property. According to the landowners, Shaun Thompson evaluated it in the mid-90s and mapped the boundary based on an old hydro line corridor.

Would you have time/interest in meeting me at the site to discuss the feasibility of a boundary revision? They property has a history of disturbance and the vegetation communities are not as black and white as I would like them to be and given the significance of this PSW I would appreciate your input earlier on in the process.

Thoughts?

Drew

experience • knowledge • integrity

| | |
|---|---|
| civil | civil |
| geotechnical | géotechnique |
| environmental | environnementale |
| field services | surveillance de chantier |
| materials testing | service de laboratoire des matériaux |

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