



# GEMTEC

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**Environmental Impact Statement  
Proposed Commercial Development  
2 Bill Leathem Drive  
Ottawa, Ontario**

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Submitted to:

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Proposed Commercial Development  
2 Bill Leathem Drive  
Ottawa, Ontario**

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Project: 65062.03 – V03

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## 1.0 INTRODUCTION

GEMTEC Consulting Engineers and Scientists Limited (GEMTEC) was retained by McIntosh Perry to complete an Environmental Impact Statement (EIS) for the property located at 2 Bill Leatham Drive, Ottawa, Ontario (hereafter referred to as “the subject property”). The location of the subject property is illustrated on Figure A.1 in Appendix A.

### 1.1 Purpose

The property owner is seeking to develop the existing property for future commercial warehouse purposes. Based on *Section 4.7 – Environmental Protection* of the City of Ottawa Official Plan (Ottawa, 2012a) an EIS is required showing that the proposed development will not negatively impact any potential natural heritage features, which may be present within the study area. The study area is defined as the property boundary and the adjacent lands encompassing an area of 120 m beyond the property boundary. The subject project and the extents of the study area are illustrated on Figure A.2, Site Layout, 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: significant woodlands, significant valleylands, significant wildlife habitat and significant areas of natural and scientific interest 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 states that development and site alteration shall not be permitted in fish habitat or habitats of species at risk except in accordance with provincial and federal requirements.” Furthermore, the 2020 Provincial Policy Statement states, “development and site alteration shall not be permitted on adjacent lands to natural heritage features unless the ecological function of the adjacent lands has been evaluated and it has been demonstrated that there will be no negative impacts on the natural features or their ecological functions. “

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 development on any natural heritage features identified and to recommend appropriate and defensible mitigation measures to ensure the long-term protection of any natural heritage features identified.

To meet these objectives, the EIS presented herein has been completed in accordance with the following 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, 2012a); and
- City of Ottawa EIS Guidelines (Ottawa, 2012b)

### **1.3 Physical Setting**

The subject property is located on Lot 18, Concession 1 (Nepean) and is municipally addressed as 2 Bill Leathem Drive, Ottawa, Ontario. The subject property currently consists of a vacant lot comprised of meadow and deciduous forest habitat. The subject property is bound to the north and west by neighbouring properties of Lot 18, Concession 1 (Nepean). To the east the site is bound by Bill Leathem Drive and to the south the site is bound by neighbouring properties addressed as 96 Bill Leathem Drive, 129 Leikin Drive and 63 A Maple Stand Way.

#### **1.3.1 Land Use Context**

The subject property is situated within a larger peri-urban area consisting of light industrial, residential and rural-agricultural land uses. The existing land use designation from the City of Ottawa is urban employment area. The City of Ottawa zoning by-law is light industrial (IL9).

## **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 that may be present on the subject project or within 1 km of the subject property. An additional component of the desktop review was to assess the potential presence of SAR to occur on the subject property or within the study boundary based on a review of publicly accessible occurrence records and a review of SAR habitat requirements and range maps.

Following changes to the MNRF natural heritage information request process, as of 2019, the MNRF is no longer providing responses to these requests. As such, an information request was not submitted for this project. In lieu of a request response, the Natural Heritage Information Request Guide (OMNRF, 2018) was consulted and the data resources listed below were reviewed for relevant natural heritage feature and SAR data relating to the site.

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

- Make a Map: Natural Heritage Areas (OMNRF, 2014a)
- Land Information Ontario (OMNRF, 2011);
- City of Ottawa Official Plan (City of Ottawa, 2012a)
- Ontario Geological Survey (OGS, 2019);

- Fisheries and Oceans Canada SAR Maps (DFO, 2019);
- Rideau Valley Conservation Authority GeoPortal (RVCA, 2019).
- Breeding Bird Atlas of Ontario (Cadman et al., 2007)
- Atlas of Mammals of Ontario (Dobbyn, 1994); 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
May 27, 2020	06:45-08:05	19°C, clear skies (1/10), no precipitation, Beaufort wind 2	Breeding Bird Survey, Ecological Land Classification, Snag Survey
June 12, 2020	09:30-10:30	17°C, partly cloudy, no precipitation, Beaufort wind 4	Breeding Bird Survey
June 24, 2020	08:45-09:45	19°C, cloudy (9/10), no precipitation, Beaufort 3	Breeding Bird 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 May 27, 2020, 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 Breeding Bird Survey

Breeding bird surveys were conducted on three occasions at two-point count locations; breeding bird survey locations are provided on Figure A.2. Breeding bird surveys followed protocols from the Canadian Breeding Bird Surveys (Downes and Collins, 2003) and the Ontario Breeding Bird Atlas (Cadman, et al. 2007).

Point count locations were established in representative habitats on-site and were generally spaced approximately 250m apart in effort to minimize double counting. Surveys were conducted no earlier than 30 minutes before sunrise and were completed within 5 hours of sunrise, to

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

#### **2.2.2.1 Bat Maternity Roost Survey**

Potential bat maternity roosting sites were surveyed for in each forested ecosite on-site on May 27, 2020, following the protocol for identifying candidate maternity roosts outlined in the MNRF (2011a) Bats and Bat Habitats: Guidelines for Wind Power Projects.

### **2.3 Data Analysis**

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

- Natural Heritage Reference Manual (OMNR, 2010);
- Significant Wildlife Habitat Technical Guide (OMNR, 2000);
- Significant Wildlife Habitat Ecoregion Criterion Schedules (OMNRF, 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 Sea along the St. Lawrence Valley. This Ecoregion falls with Rowe's (1972) Great Lakes-St. Lawrence Forest Region, including its Huron-Ontario and Upper St. Lawrence sections, and a small part of the Middle Ottawa Forest section (Crins et al., 2009).

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

The topography of the site is relatively flat with a gentle downward slope from the northwest to the southeast, from a topographical high of 93 mASL to a topographical low of 90 mASL. A small valleyland is present within the forest on-site and is associated with the watercourse discussed in Section 3.3 below.



A single topographical landform, as mapped by Chapman and Putman (1984) is described on the subject property, the clay plains of the Ottawa Valley Clay Plains physiographic region.

The Ontario Geological Survey (OGS, 2019) identifies a single surficial soil unit on the subject property, fine-textured glaciomarine deposits. The fine-textured glaciomarine deposits are comprised of silt and clay, with minor sand and gravel that is massive to well laminated.

Bedrock at the site is composed of the Beekmantown Group comprise of dolostone and limestone.

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

Surface water features on-site consist of a single un-named watercourse that flows through the southern portion of the site. The watercourse originates on Lot 17, Concession 1 (Nepean) northwest of the subject property, and flows in a southeast direction across Lot 17, Longfields Drive and Lot 18 before entering the southwest side of the subject property, flowing for 115 m and exiting the site on the southeast side of the property. Off-site the watercourse flows for 60 m before entering a series of waterbodies which eventually discharge into the Rideau River approximately 1.2 km east of the subject property. The watercourse forms part of the Barhaven Creek subwatershed and is part of the Lower Rideau Catchment under the jurisdiction of the Rideau Valley Conservation Authority (RVCA).

A fisheries assessment was not conducted as part of this EIS, however based on observations made during the site investigation, the pond on-site provides fish habitat for cyprinids and other small-bodied fish species.

Groundwater investigations were not completed in support of this EIS.

### **3.4 Vegetation Communities**

Vegetation communities on-site were characterized by GEMTEC in 2020 following protocols utilized in the Southern Ontario Ecological Land Classification System (Lee et al., 2008). Vegetation communities on-site are summarized in Table 3.1 below. All vegetation communities are illustrated on Figure A.3 in Appendix A.

**Table 3.1 Vegetation Communities**

ELC Type	Description	Size (ha)
Cultural Meadow (CUM)	This community was dominated by herbaceous vegetation and included cow's vetch ( <i>Vicia cracca</i> ), grasses, wild carrot ( <i>Daucus carota</i> ), dandelion ( <i>Taraxacum officinale</i> ) rhubarb ( <i>Rheum rhabarbarum</i> ), red raspberry ( <i>Rubus idaeus</i> ), Manitoba maple ( <i>Acer negundo</i> ) saplings, eastern cottonwood ( <i>Populus deltoides</i> ) saplings.	1.2
Dry - Fresh Sugar Maple – Hardwood Deciduous Forest (FOD5-9)	<p>This community was dominated by sugar maple (<i>Acer saccharum</i>) and other hardwood species including: bur oak, (<i>Quercus macrocarpa</i>), Manitoba maple, green ash (<i>Fraxinus pensylvanica</i>), white willow (<i>Salix alba</i>), basswood (<i>Tilia americana</i>), American elm (<i>Ulmus americana</i>), red maple (<i>Acer rubrum</i>) and trembling aspen (<i>Populus tremuloides</i>). Shrub species included saplings of major constituents as well as common buckthorn (<i>Rhamnus cathartica</i>), and alternate-leaved dogwood (<i>Cornus salternifolia</i>). Along the extreme southern property boundary staghorn sumac (<i>Rhus typhina</i>) and hawthorn (<i>Crataegus</i> spp.) were present.</p> <p>Herbaceous vegetation included false solomon's seal (<i>Maianthemum racemosum</i>), poison ivy (<i>Toxicodendron radicans</i>), Doll's eyes (<i>Actaea pachypoda</i>), violet (<i>Viola</i> sp.) and trout lily (<i>Erythronium americana</i>).</p> <p>Along the unnamed watercourse, herbaceous vegetation included trout lily, and spotted jewelweed (<i>Impatiens capensis</i>).</p>	0.93

### 3.5 Wildlife

Wildlife observed on-site and within the study area during field investigations completed in 2020 are summarized in Table C.1 in Appendix C.

## 4.0 NATURAL HERITAGE FEATURES

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

### 4.1 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.”

No provincially significant wetlands were identified during the desktop review, nor were any local wetlands identified on-site during the site investigations. A single local wetland was identified adjacent to site during the desktop review. The NHIC identifies a local wetland just west of the subject property, on the neighbouring portion of Lot 18. Local wetlands have not been identified on the subject property. As no PSW's have been identified on-site or within 120 m for the site, PSW are not present within the study area and are not discussed or evaluated further in this EIS. Potential impacts to local wetlands are discussed in Section 6.

## 4.2 Significant Woodlands

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

At the local scale, significant woodlands are defined and designated by the local planning authority. Generally, most planning authorities have defined significant woodlands as any woodland that contains any of the four criteria listed in Section 7.2 of the natural heritage reference manual (OMNR, 2010), including: woodland size, ecological functions, uncommon characteristics and economic and social functional values. In addition to guidelines outlined in the natural heritage reference manual, the City of Ottawa provides a supplementary document *Significant Woodland: Guidelines for Identification, Evaluation, and Impact Assessment* (Ottawa, undated) to evaluate woodlands and ensure compliance with the city's policies.

As outlined in *Significant Woodlands: Guidelines for Identification, Evaluation and Impact Assessment* (Ottawa, undated), urban area woodlands are to be identified and evaluated based on the age and size of the woodlands. Ottawa's Official Plan defines all urban woodlands meeting minimum size and age thresholds as significant under NHRM Criterion 4 – Economic and Social Functional Values. However, the policy does not preclude the possibility that urban woodlands may also qualify as significant under other NHRM criteria.

The City of Ottawa established a minimum age threshold of 60 years for significant woodlands, in order to exempt young, regenerating woodlands from the significant woodland designation. Furthermore, the City of Ottawa Official Plan policies established a minimum size threshold of 0.8 ha for significant woodlands in the urban area. In application, only the areas of an urban woodlands that are greater than 60 years old are counted towards the 0.8 ha size threshold.

Based on review of 1965 and 1976 aerial imagery available on GeoOttawa, contiguous woodlands older than 60 years were only 0.5 ha in size. As the woodlands older than 60 years do not meet

the minimum size threshold of 0.8 ha established in the official plan policies, urban significant woodlands as defined by the City of Ottawa are not present on-site. However, functionally, the woodlands provide elements of surface water protection, proximity and linkages to other habitats as outlined in Table C.2 in Appendix C, which presents the screening rationale for significant woodlands provided in the Natural Heritage Reference Manual.

Potential impacts to woodlands from the proposed development are discussed in Section 6.

#### **4.3 Significant Valleylands**

Valleylands are defined in the natural heritage reference manual (OMNR, 2010) as ‘a natural area that occurs in a valley or other landform depression that has water flowing through or standing for some period of time’. The identification and evaluation of significant 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). Within the City of Ottawa, the City has identified significant valleylands as part of their Natural Heritage System; based on a review of Schedule L1 of the City Official Plan, the adjacent valleylands have been identified by the City of Ottawa as significant.

Table C.3 in Appendix C presents the screening rationale for significant valleylands provided in the Natural Heritage Reference Manual. Separately from Schedule L1 of the City Official Plan, review of Table C.3 indicates that the valleyland is considered significant due to its surface water functions, degree of naturalness and habitat value. The extent of the valleyland is confined within the woodlands on-site.

Potential impacts to significant valleylands from the proposed project are discussed in Section 6.

#### **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 evaluate 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.4, C.5, C.6 and C.7 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, 2015) identify 12 types of seasonal concentration habitats that may be considered significant wildlife habitat. These 12 types of seasonal habitat are presented in Table C.4 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.4 in Appendix C, no habitats of seasonal concentrations of animals were identified on-site, as such they are not discussed or evaluated further in this EIS.

### **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.5 in Appendix C.

Following review of Table C.5 in Appendix C, no specialized habitats for wildlife have been identified on-site or within the study area; as such they are not discussed or evaluated further in this EIS.

#### 4.5.4 Habitats of Species of Conservation Concern

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

Based on the guidance provided in the Significant Wildlife Habitat Ecoregion Criterion Schedules (OMNRF, 2015a), 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, 2015a), 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-11 are provided in Table C.6 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.6 in Appendix C, no habitats of species of conservation concern occur on-site. As such they are not discussed or evaluated further in this EIS.

#### 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 OMNRF, 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 OMNRF district office or by the regional planning authority.

Following review of Table C.7 in Appendix C, no animal movement corridors have been identified on-site. As such they are not discussed or evaluated further in this EIS.

As no significant wildlife habitat has been identified on-site it is 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 a harmful alteration, disturbance or destruction of fish habitat, or the death of fish 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, however, the watercourse on-site is likely to provide fish habitat for small bodied fish species as well as contribute to downstream fish habitat. A review of the DFO SAR mapping (DFO, 2019) indicates that no aquatic SAR or critical habitat have been identified for the watercourse.

Fish habitat is illustrated on Figure A.4 in Appendix A, in relation to other site features.

#### **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.8 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 6.3.

### **5.0 PROPOSED PROJECT**

The proposed project assessed for potential impacts on the natural heritage features determined to be present within the broader study area includes the development of a 20,000 ft<sup>2</sup> (0.18 ha) single-storey warehouse on an existing 2.13 ha property. The warehouse development will also include parking areas and loading docks comprising an area of 0.58 ha. The total area of impervious surfaces proposed for the site is 0.76 ha. The limit of disturbance as part of the site development design is illustrated on Figure A.2.

Additional components of the development will include: tree clearing and vegetation grubbing, fill placement and elevation grading, and general landscaping activities. The site will be on municipal services.

All stormwater and seasonal snow storage for the site will be located within the cultural meadow to the east side of the site. Stormwater management at the site includes restricting flows up to and including the 100 year storm event. Additionally, all emergency land flow will be directed towards Bill Leathem Road and away from the watercourse at the rear of the property.



## **6.0 IMPACT ASSESSMENT**

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

Potential effects to the environment of the site from the proposed development outlined in Section 5 include: an increase in impervious surface, increase in stormwater generation, short-term increases in sedimentation and/or erosion and increased noise generation.

### **6.1 Local Wetlands**

Local wetlands are mapped off-site, along the northeast property boundary. No in-water work is proposed as part of the development, furthermore, given the topography and flow of the watercourse, off-site local wetlands occur upstream of the proposed development, as such impacts to adjacent local wetlands are not anticipated as a result of the proposed development. As such, local wetlands are not discussed further in this report and no mitigation measures are provided for their protection.

### **6.2 Woodlands**

Woodlands on-site do not meet the criteria (size and age) outlined by the City of Ottawa Urban Significant Woodland policy to be considered significant, however as discussed in Section 4.2, the woodlands do provide some ecological functions as outlined in the natural heritage reference manual, due to the presence of the watercourse and fish habitat. Based on the limit of disturbance of the current development concept for the site, as illustrated on Figure A.2, no encroachment to the woodlands is anticipated, effectively maintaining the ecological functions the woodlands provide.

Mitigation measures to protect woodlands on-site are discussed in Section 7 below.

### **6.3 Significant Valleylands**

Significant valleylands were identified as being present on-site in Section 4.3 above due to their surface water functions, degree of naturalness and habitat value. The valleyland itself is contained within the woodlands identified on-site. As discussed above, no development is proposed to occur within the woodlands on-site. Furthermore, no changes are anticipated to occur to the on-site watercourse, as no in-water work is proposed and stormwater management will direct flows towards Bill Leathem Drive and away from the watercourse. As such, no impacts are anticipated to occur to the ecological functions of the significant valleylands on-site, surface water functions, the degree of naturalness and the habitat value they provide will be maintained.

Mitigation measures to protect significant valleylands on-site are discussed in Section 7 below.



## 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.”

Section 35 (1) of the Fisheries Act (Canada, 1985) states that “no person shall carry on any work, undertaking or activity that results in harmful alteration, disturbance or destruction (HADD) of fish habitat, or the death of fish” from typical project impacts such as temperature change, sedimentation, infilling, reduction of nutrient and food supply, etc. When development is unable to avoid or mitigate serious harm to fish from typical project impacts such as temperature regime alteration, sedimentation, infilling, reduction of nutrients or food supply, an authorization under Subsection 35 (2) of the Fisheries Act is required for the project to proceed.

As no in-water work is anticipated as part of the proposed project, potential impacts to fish habitat are anticipated to be indirect in nature. Potential indirect impacts to water quality and fish habitat from the proposed commercial development may include short-term increases in overland flow and concomitant sediment transport during construction, increased nutrient and/or contaminant loading through both overland and subsurface pathways resulting from landscaping practices.

Mitigation measures, intended to protect fish habitat on-site are presented in Section 7.

## 6.5 Species at Risk

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

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

### 6.5.1 Bobolink

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

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

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

Potentially suitable bobolink habitat occurs in surrounding agricultural fields and part of the cultural meadow on-site. A series of three breeding bird surveys were conducted at two point count locations on-site. Bobolink were not heard or observed nesting or foraging on-site or adjacent to site during any of the site investigations. As such no negative impacts are anticipated to occur to bobolink as a result of the proposed development and no mitigation measures are provided in Section 7 for the protection of bobolink and they are not discussed or evaluated further in this EIS.

#### **6.5.2 Eastern Meadowlark**

Eastern meadowlark (*Sturnella magna*) is a chunky, medium-sized grassland songbird, with a short tail, and a long spear-shaped bill. The colour pattern of the species is pale brown marked with black, the underside is bright yellow and a bold black 'V' pattern across the chest.

The eastern meadowlark was once well established in southern Ontario, however, due to the natural succession of abandoned agricultural fields transitioning back to forested habitat on the Canadian shield and through the northern portion of the Lake Simcoe-Rideau region, along with intensive farming practices and expanding of urbanization in southwestern and eastern Ontario, the eastern meadowlark has suffered significant habitat loss (Cadman et al., 2007). Between the first and second breeding bird atlas, the probability of observation declined by 13% province wide (Cadman et al., 2007). The current distribution of eastern meadowlark is concentrated through the Lake Simcoe-Rideau region, primarily from Kingston to Lake Simcoe.

The eastern meadowlark prefers native grassland, pasture and savannah habitat, however it is known to use a variety of anthropogenic grassland habitats including hayfields, weedy meadows, young orchards, grain fields and herbaceous fence rows (COSEWIC, 2011). Preferred grassland habitat typically contains moderately tall (25 to 50 cm) grass species with abundant litter cover,

with a high proportion of grass, moderate to high forb density a low percent of shrub cover (typically <5%) and low percent cover of bar ground (COSEWIC, 2011).

Potentially suitable eastern meadowlark habitat occurs in surrounding agricultural fields and part of the cultural meadow on-site. A series of three breeding bird surveys were conducted at two point count locations on-site. Eastern meadowlark were not heard or observed nesting or foraging on-site or adjacent to site during any of the site investigations. As such no negative impacts are anticipated to occur to eastern meadowlark as a result of the proposed development and no mitigation measures are provided in Section 7 for the protection of eastern meadowlark and they are not discussed or evaluated further in this EIS.

### **6.5.3 Eastern Small-footed Myotis**

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

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

Eastern small-footed Myotis overwinter primarily in caves and abandoned mines with low humidity and temperatures and stable microclimates (Humphrey, 2017). In comparison to other Ontario bat species, they are able to tolerate much colder temperatures, drier conditions and draftier locations for hibernating (Humphrey, 2017). During the spring and summer months, they utilize a variety of habitats for roosting, including under rocks or rock outcrops, in buildings, under bridges, or in caves, mines or hollow trees (Ontario, 2019a).

Although the forest habitat on-site does not meet the requirements to support bat maternity colonies, given the availability of habitat and buildings on-site and within the study area, there is a potential for eastern small-footed myotis to occur on the property, primarily for foraging or non-maternal roosting. As no development is proposed to occur in the woodland, impacts to eastern small-footed myotis are primarily associated with encroachment and increased wildlife-human interaction. Mitigation measures intended to protect eastern small-footed Myotis from impacts of the proposed development are discussed in Section 7.

### **6.5.4 Little Brown Myotis**

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

In Canada, Little Brown Myotis' occur throughout all of the provinces and territories (except Nunavut), with its range extending south through the majority of the United States as well. In Ontario, the Little Brown Myotis is widespread in southern Ontario and has been found as far north as Moose Factory and Favourable Lake (Ontario, 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 on-site does not meet the requirements to support bat maternity colonies, given the availability of habitat and buildings on-site and within the study area, there is a potential for little brown myotis to occur on the property, primarily for foraging or non-maternal roosting. As no development is proposed to occur in the woodland, impacts to little brown myotis are primarily associated with encroachment and increased wildlife-human interaction. Mitigation measures intended to protect little brown myotis from impacts of the proposed development are discussed in Section 7.

#### 6.5.5 Tri-colored Bat

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

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

Tri-colored bat overwinter 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 woodlands on-site do not meet minimum snag density requirements to support bat maternity colony habitat, 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. As no development is proposed to occur in the woodland, impacts to tri-colored bat are primarily associated with

encroachment and increased wildlife-human interaction. Mitigation measures intended to protect tri-colored bat from impacts of the proposed development are discussed in Section 7.

#### **6.5.6 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 rich, 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.

### **6.6 Cumulative Impacts**

Potential cumulative impacts associated with the proposed project include an increase in storm water generation, increases in nutrient loading to adjacent aquatic features and the loss of marginal roadside meadow habitat, primarily for common avian species.

Cumulative impacts to the natural environment at the site due to increased human presence are expected to be negligible given the nature of the development; commercial warehouse building, on an industrial lot within a larger light industrial, residential and agricultural land use area.

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

## **7.0 RECOMMENDED AVOIDANCE AND MITIGATION MEASURES**

The following avoidance and mitigation measures have been recommended by GEMTEC in order to minimize or eliminate potential environmental impacts identified in Section 6. As such, the following avoidance and mitigation measures should be enforced throughout the development through application of Site Plan Controls.

## 7.1 Setbacks and Buffers

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).

Woodlands on-site do not meet the urban significant woodland policies, however they do meet two ecological criteria from the NHRM: *proximity to adjacent natural heritage features* and *linkages to adjacent natural features*. Considering the woodlands are not significant and the proposed development will not impact the *proximity* of the woodland to adjacent natural heritage features or negatively impact the woodlands function as a linkage to other natural features, GEMTECs opinion is that setback should be established as per OP Section 4.7.3, Policy 2.

In accordance with the City of Ottawa Official Plan, Section 4.7.3 Policy 2, a minimum setback distance for the prevention of erosion and protection of surface water is to be defined by the greater of the following:

- a) development limits of regulatory flood line;
- b) development limits established by geotechnical limit of hazard lands;
- c) 30 metres from the normal high water mark; or
- d) 15 meters from the existing top of bank.

With respect to the above, a regulatory flood line has not been established for the watercourse and the Paterson (2020) geotechnical investigation completed in support of this project did not establish a limit of hazard land. Accordingly, the recommended setback was determined based on the greater of the setbacks from the 30m offset from normal high water mark and a 15 m from the existing top of bank, both of which are located beyond the drip line of the woodland edge and provide protection to the woodlands and their ecological functions.

Figure A.5 in Appendix A, illustrates the setback distances in accordance with Section 4.7.3 Policy 2 of the City's Official Plan. While Figure A.6 provides an illustration of the greater of the two setback distances which were combined to derive the final construction setback. It is worthy

to note that the actual limit of disturbance for the proposed development, as illustrated on Figure A.5 and Figure A.6, lies an additional 10 m beyond the proposed construction setback.

## **7.2 Woodlands**

The recommended setback is sufficient to protect on-site woodlands from encroachment and maintain the ecological functions (surface water protection, proximity and linkages) that the woodland provides. No construction, disturbance or vegetation removal is permitted beyond the setback, the buffer between the setback and the woodlands should remain permanently vegetated with the existing vegetation.

## **7.3 Significant Valleylands**

The setback recommended is sufficient to protect on-site significant valleylands from encroachment and maintain the ecological functions that the valleyland provides to the watercourse and fish habitat. No construction, disturbance or vegetation removal is permitted beyond the setback, the buffer between the setback and the top of the slope of the valleyland should remain permanently vegetated with the existing vegetation.

## **7.4 Fish Habitat**

The setback recommended is sufficient to protect the on-site watercourse and downstream fish habitat. No construction, disturbance or vegetation removal is permitted beyond the setback, the buffer between the setback and the watercourse should remain permanently vegetated with the existing vegetation. The following general mitigation measures are recommended for the protection of water quality and fish habitat:

- 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.
- All in-water habitat features, including aquatic vegetation, natural woody debris and boulders should be left in their current locations.
- Silt fencing should be installed along all setbacks to provide visual demarcation of the setbacks to prevent machinery encroachment and sediment transport.
- 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 envelopes adjacent to fish habitat.
- Maintain erosion and sediment control measures until all disturbed ground has been permanently stabilized, suspended sediment has resettled and runoff water is clear.



- If required, ensure that the water being pumped from any future excavations on-site is filtered prior to release.
- In order to protect fish habitat from contamination during construction, 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 top of bank.
- Maintain as much permeable surface area as possible in future development plans to limit the generation of stormwater runoff.
- Stormwater and snow melt water generated from the development is to be managed on-site such that discharge is equal to pre-development. Site stormwater and snow melt water will be directed towards Bill Leathem Road and not the watercourse.

## **7.5 Species at Risk**

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

To protect roosting and foraging bats, tree removal where required should take place outside of the spring and summer active season (typically May 1 to September 1), when bats are more likely to be using forest habitat. If tree clearing must be conducted during the spring and summer timing window then a roost survey should be conducted by a qualified professional.

## **7.6 Wildlife**

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

- Vegetation removal should occur outside the key breeding bird period (typically April 15 to August 15) as identified by Environment Canada for the protection of migratory birds and to avoid contravention of the Migratory Bird Convention Act. If vegetation clearing activities must take place during the aforementioned timing window then a nest, survey shall be conducted by a qualified professional.
- Installation of silt fence barriers around the entire construction envelope to prohibit the emigration of wildlife into the construction area; silt fencing should be inspected daily and immediately after each precipitation event.
- 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 and construction activities cease 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 this EIS is the development of a single storey commercial warehouse, with a footprint of approximately 20,000 square feet.

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

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

- No significant negative impacts to natural heritage features identified on-site, including habitat of species at risk and fish habitat, from future commercial construction are anticipated.
- The proposed project complies with the natural heritage policies of the Provincial Policy Statement.
- The proposed development complies with the natural heritage policies of the 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 McIntosh Perry and is intended for the exclusive use of McIntosh Perry. This report may not be relied upon by any other person or entity without the express written consent of GEMTEC and McIntosh Perry. 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,



Taylor Warrington, B.Sc.  
Biologist



Drew Paulusse, B.Sc.  
Senior Biologist

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## **APPENDIX A**

### Report Figures

Figure A.1 – Site Location

Figure A.2 – Site Layout

Figure A.3 – Vegetation Community

Figure A.4 – Natural Heritage Features

Figure A.5 – Setback Derivation

Figure A.6 – Mitigation Measures





**Legend**

Property Boundary


Study Area

**Inset Map**

**Scale**

1:50,000

0 0.5 1 2 3 Kilometers



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Client:	McIntosh Perry	Project:	65062.03
Location			
2 Bill Leathem Drive Ottawa, Ontario			
Drwn By: TW	Chkd By: DP	Site Location	
Date: September 2020		Rev.	Figure: A.1
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**Legend**

- Property Boundary
- Study Area
- Proposed Warehouse Footprint
- Proposed Parking and Loading Docks
- SWM Management Swale and Snow Storage
- Limit of Disturbance
- Local Wetland
- Watercourse
- Breeding Bird Survey (100 m radius)

Scale			
1:2,700			
0 20 40 80 120 160 Meters			
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2 Bill Leatham Drive Ottawa, Ontario			
Drwn By:	Chkd By:	Site Layout	
TW	DP		
Date: September 2020		Rev.	Figure: A.2
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**Legend**

- Property Boundary
  - Study Area
  - Proposed Warehouse Footprint
  - Proposed Parking and Loading Docks
  - Watercourse
  - Vegetation Community
- CUM = Cultural Meadow  
FOD5-9 = Sugar Maple - Hardwood Deciduous Forest

Scale

1:2,700

Meters

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2 Bill Leatham Drive Ottawa, Ontario							
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TW		DP					
Date: September 2020				Rev.		Figure: A.3	
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**Legend**

- Property Boundary
- Study Area
- Proposed Warehouse Footprint
- Proposed Parking and Loading Docks
- SWM Management Swale and Snow Storage
- Limit of Disturbance
- Local Wetland
- Fish Habitat
- Significant Valleyland

Scale

1:2,700

0 20 40 80 120 160 Meters



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Location							
2 Bill Leatham Drive Ottawa, Ontario							
Drwn By:		Chkd By:		Natural Heritage Features			
TW		DP					
Date: September 2020				Rev.		Figure: A.4	
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**Legend**

- Property Boundary
- Study Area
- Proposed Warehouse Footprint
- Proposed Parking and Loading Docks
- SWM Management Swale and Snow Storage
- Local Wetland
- Fish Habitat
- Limit of Disturbance
- Top of Slope
- 30 m Setback (from watercourse)
- 15 m Setback (from top of slope)

Scale

1:2,700

0

20


40

80

120

160

Meters



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Client:

McIntosh Perry

Project:

65062.03

Location

2 Bill Leathem Drive  
Ottawa, Ontario

Drwn By:

TW

Chkd By:

DP

Setback Derivation

Date: October 2020

Rev.

0

Figure: A.5

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**Legend**

Property Boundary

Study Area

Proposed Warehouse Footprint

Proposed Parking and Loading Docks

SWM Management Swale and Snow Storage

Local Wetland

Fish Habitat

Construction Setback

Scale

1:2,700

0

20

40

80

120

160

Meters

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Mitigation Measures

Date: October 2020

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0

Figure: A.6





## **APPENDIX B**

### Site Photographs



Site Photograph 1 – Cultural Meadow



Site Photograph 2 – Cultural Meadow

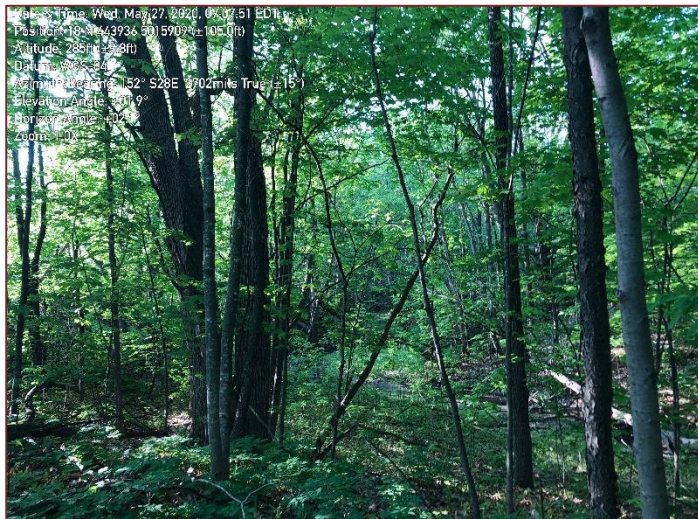


Site Photograph 3 – Cultural Meadow



Site Photograph 4 – Transition from Cultural Meadow to Sugar Maple – Hardwood Forest





Site Photograph 5 – Sugar Maple – Hardwood Deciduous Forest



Site Photograph 6 – Sugar Maple – Hardwood Deciduous Forest



Site Photograph 7 – On-site Watercourse within Sugar Maple – Hardwood Deciduous Forest



Site Photograph 8 – On-site Watercourse within Sugar Maple – Hardwood Deciduous Forest





## **APPENDIX C**

### Report Summary Tables

**TABLE C.1**  
**SUMMARY OF WILDLIFE OBSERVED ON-SITE AND WITHIN THE STUDY AREA**

Common Name	Scientific Name	S-Rank	Evidence
<b>Avian Species</b>			
American crow	<i>Corvus brachyrhynchos</i>	S5B	Heard calling
American goldfinch	<i>Spinus tristis</i>	S5B	Heard calling
American robin	<i>Turdus migratorius</i>	S5B	Heard calling
Black-capped chickadee	<i>Poecile atricapillus</i>	S5	Heard calling
Common grackle	<i>Quiscalus quiscula</i>	S5B	Heard calling
Common yellowthroat	<i>Geothlypis trichas</i>	S5B	Heard calling
Eastern phoebe	<i>Sayornis phoebe</i>	S5B	Heard calling
European starling	<i>Sturnus vulgaris</i>	SNA	Heard calling
Field sparrow	<i>Spizella pusilla</i>	S4B	Heard calling
Great crested flycatcher	<i>Myiarchus crinitus</i>	S4B	Heard calling
Mallard	<i>Anas platyrhynchos</i>	S5	Heard calling
Mourning dove	<i>Zenaida macroura</i>	S4B	Heard calling
Northern cardinal	<i>Cardinalis cardinalis</i>	S5	Heard calling
Northern flicker	<i>Colaptes auratus</i>	S4B	Heard calling
Red-eyed vireo	<i>Vireo olivaceus</i>	S5B	Heard calling
Red-winged blackbird	<i>Agelaius phoeniceus</i>	S4B	Heard calling
Song sparrow	<i>Melospiza melodia</i>	S5B	Heard calling
Veery	<i>Catharus fuscescens</i>	S4B	Heard calling
Yellow warbler	<i>Setophaga petechia</i>	S5B	Heard calling
<b>Mammalian Species</b>			
Eastern cottontail	<i>Sylvilagus floridanus</i>	S5	Observed foraging on-site
Eastern grey squirrel	<i>Sciurus carolinensis</i>	S5	Observed foraging on-site
<b>Amphibian Species</b>			
American toad	<i>Anaxyrus americanus</i>	S4	Observed on-site

Notes:

Subnational Conservation Status Ranks:

S1 - Critically Imperiled, 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 fairly 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 RATIONALE FOR SIGNIFICANT WOODLANDS**

Woodland Criteria	Further Considered in EIS	Rationale
Woodland Size	No	Woodland's on-site do not meet minimum size criteria.
Ecological Functions		
a) Woodland Interior	No	Woodland's on-site do not contain any interior habitat.
b) Proximity	Yes	Woodland's on-site are adjacent to a watercourse that provides and contributes to fish habitat
c) Linkages	Yes	Woodland's on-site do not provide a connecting link between natural heritage features.
d) Water Protection	Yes	Woodland's on-site are located adjacent to a watercourse and associated fish habitat.
e) Diversity	No	Species 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 SIGNIFICANT VALLEYLANDS**

Woodland Criteria	Further Considered in EIS	Rationale
Landform-Related Functions and Attributes		
a) Surface Water Functions	Yes	Ontario Flow Assessment Tool indicates that the upstream catchment area is approximately 90 ha in size.
b) Groundwater Functions	No	No areas of groundwater infiltration or release were identified on-site.
c) Landform Prominence	No	While the valleyland was well defined, it did not meet the average width of 25 m established in the natural heritage reference manual.
d) Distinctive Geomorphic Landforms	No	No distinctive landforms (oxbows, bottomlands, terraces, deltas, exposed soil strata or eroding slopes) were identified on-site.
Ecological Functions		
a) Degree of Naturalness	Yes	Vegetation within the valleyland is predominantly natural.
b) Community and Species Diversity	No	Community and species diversity on-site is low and well represented in the greater landscape.
c) Unique Communities and Species	No	No seasonally important habitats have been identified.
d) Habitat Value	Yes	On-site habitat may provide important habitat for native aquatic species.
e) Linkage Function	No	The valleyland and surrounding land have not been identified to provide an important linkage function to other natural areas within the watershed.
Restored Ecological Functions		
a) Restoration Potential and Value	No	Area has not been significantly altered.

**TABLE C.4**  
**SCREENING RATIONALE FOR HABITATS OF SEASONAL CONCENTRATION OF ANIMALS**

Wildlife Habitat	Further Considered in EIS	Rationale
Winter Deer Yard	No	No significant stands of mast producing trees, no large coniferous forest stands on-site to provide protection and cover from winter elements.
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.).
Waterfowl Stopover and Staging Areas	No	No suitable habitat located on-site or within the study area to meet the defining use criteria for waterfowl use (i.e. no fields with sheet water).
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	The site does not contain a suitable mix of forest and upland habitat to meet the defining use criteria for raptor wintering.
Bat Hibernacula	No	Cave and crevice habitat is not present on-site or within the study area.
Bat Maternity Colonies	No	Woodlands on-site do not provide the required density of snag trees (10/hectare) to provide bat maternity colony SWH.
Turtle Wintering Area	No	No suitable waterbody on-site of adequate depth to protect from winter elements or provide turtle wintering area SWH.
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.
Migratory Butterfly Stopover Area	No	The site is not located within 5 km of Lake Ontario and therefore does not meet the defining criteria.
Landbird Migratory Stopover Area	No	The site is not located within 5 km of Lake Ontario and therefore does not meet the defining criteria.

**TABLE C.5**  
**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	The site lacks suitable forest community adjacent to a riparian area to support nesting, foraging and perching habitat for Bald Eagle and Osprey.
Woodland Nesting Raptor Habitat	No	No suitable forested habitat has been identified on-site.
Turtle Nesting Habitat	No	No suitable soft gravel or sand substrate available on-site to provide turtle nesting SWH.
Seeps and Springs	No	No seeps or spring were identified on-site during the preliminary site investigation.
Woodland Amphibian Breeding Habitat	No	Based off observations from the site investigations, the on-site watercourse is not of suitable width or depth to meet minimum size criteria (500 m <sup>2</sup> ) to provide woodland amphibian breeding SWH.
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.6**  
**SCREENING RATIONALE FOR HABITAT FOR SPECIES OF CONSERVATION CONCERN**

General Habitats of Species of Conservation Concern	Further Considered in EIS	Rationale
Marsh Breeding Bird Habitat	No	No suitable wetlands have been identified on-site or adjacent to site to support marsh breeding bird habitat.
Open Country Breeding Bird Habitat	No	No suitable meadow habitat on-site to support open country bird breeding due to recent (< 5 years) agricultural disturbances.
Shrub/Early Successional Breeding Bird Habitat	No	Candidate early successional breeding bird habitat typically includes fallow fields transitioning to early successional forest habitats that are > 10 ha but have not been actively used for farming. Habitat on-site does not meet the defining use criteria to support shrub/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	Observation data from the NHIC indicates no special concern or rare wildlife species have been observed on-site. However, one species of special concern was observed during site investigation, eastern wood-pewee.



**TABLE C.7**  
**SCREENING RATIONALE FOR ANIMAL MOVEMENT CORRIDORS**

Animal Movement Corridor	Further Considered in EIS	Rationale
Amphibian Movement Corridor	No	No wetland or woodland amphibian breeding habitat has been identified on-site or within the study area.
Deer Movement Corridor	No	While the natural landscape linkage is likely to provide a corridor for deer and other small mammals, a deer-specific movement corridor has not been identified on-site, furthermore, no Stratum I or Stratum II deer yards have been identified in the area.

TABLE C.8  
SCREENING RATIONALE FOR POTENTIAL SPEICES AT RISK ON-SITE OR WITHIN STUDY AREA

Species	ESA Status	Regional Distribution	Habitat Use	Probability of Occurrence On-Site or Within Study Area	Rationale
<b>Avian</b>					
Bald Eagle	Special Concern	Confirmed nest at Shirley's bay since 2012.	Nest in mature forests near open water.	Low	Site lacks suitable forest habitat adjacent to suitable open water and foraging area to support Bald Eagle activity.
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	No suitable sand banks, pit walls or cliff walls to support bank swallow nesting.
Barn Swallow	Threatened	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	No suitable nesting structures on-site or adjacent to site. Potentially suitable foraging habitat located on-site and in broader study area. Species was not observed on-site during any of the site investigations.
Bobolink	Threatened	Widespread in the Ottawa region, confirmed and probable nests found in 39 or 40 local atlas squares during recent OBBA.	Nests in dense tall grass fields and meadows, low tolerance for woody vegetation.	Moderate	Potentially suitable grassland habitat on-site and adjacent to site in agricultural fields to support Bobolink.
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	Preferred wet forest habitat is not present on-site.
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.	Nests in traditional-style open brick chimneys.	Low	Suitable nesting structures are not present on-site or within the broader study area.
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 grave rooftops.	Low	No suitable nesting habitat present on-site.
Eastern Meadowlark	Threatened	Sporadic occurrences in Ottawa region, more common in rural areas with pasture or fallow fields.	Nests and forages in dense tall grass fields and meadows, higher tolerance to woody vegetation.	Moderate	Potentially suitable grassland habitat on-site and adjacent to site in agricultural fields to support Eastern Meadowlark.
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	Woodland habitat on adjacent properties may provide suitable habitat for eastern wood-pewee.
Golden Eagle	Endangered	Migrant only in Ottawa area.	Nests on remote, bedrock cliffs, overlooking large burns, lakes or tundra's	Low	Suitable nesting habitat is not present on-site.
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.	Low	Preferred scrub habitat is not present on-site or within the study area.
Evening Grosbeak	Special Concern	5 confirmed, 6 probable, 8 possible nests in recent OBBA.	Nests in trees or large shrubs, preference to large coniferous forests, will use deciduous. Overwinters in Ottawa.	Low	Suitable habitat does not occur on-site.
Henslow's Sparrow	Endangered	No nests in recent OBBA.	Prefers open, moist, tallgrass fields.	Low	Preferred grassland habitat is not present on-site or within the study area.
Loggerhead shrike	Endangered	1 possible nest in recent OBBA. Critical habitat in Montague Township, however no confirmed nests from MNRF since 2002.	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 Knot	Endangered	Migrant only in region, found along Ottawa River shorelines, and area lagoons,	Nests in the far north, migrant along the shorelines and lagoons of the Ottawa River.	Low	Site does not provide suitable habitat for migrant red knot.
Red-headed Woodpecker	Special Concern	1 confirmed, 1 probable and 1 possible during recent OBBA. Nesting pair reported from village of Constance Bay in recent years.	Prefers open deciduous woodlands.	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	Special Concern	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.	Low	The site lacks suitable deciduous or mixed woodland habitat to support Wood Thrush.
<b>Mammalian</b>					
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. No critical habitat (hibernacula) identified in Ottawa to date.	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). No critical habitat (hibernacula) identified in Ottawa to date. 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.

Species	ESA Status	Regional Distribution	Habitat Use	Probability of Occurrence On-Site or Within Study Area	Rationale
Tri-colored Bat	Endangered	Provincially Uncommon, only 26 documented occurrences in Ontario from pre-1980 to present (MNRF, 2016). Unknown distribution in Ottawa; historical records from sites in urban Ottawa and Lanark County.	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.
<b>Reptilian</b>					
Blanding's Turtle	Threatened	Provincial range extends from Manitoulin Island south and east. Scattered occurrence records in central Ontario. Scattered throughout Ottawa and National Capital Region, with numerous sites in western half of region. Critical habitat present in Ottawa.	Inhabits quiet lakes, streams and wetlands with abundant emergent vegetation. Frequently occurs in adjacent upland forests.	Low	No historic occurrence data for species on NHIC or HerpAtlas database for the site. The site lacks suitable wetland and aquatic habitat to provide adequate habitat for Blanding's turtle.
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.	Low	The site lacks suitable wetland and aquatic habitat to provide adequate habitat for Snapping Turtle.
<b>Plants</b>					
American Ginseng	Endangered	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.
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	Majority of the site is open and in a regenerative state.
<b>Lichens</b>					
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.
<b>Insects</b>					
Bogbean Buckmoth	Endangered	Richmond Fen	Preferred food plant is bog bean, present in a variety of wetlands including bogs, swamps and fens.	Low	Preferred wetland habitat is not present on-site.
Gypsy Cuckoo Bumble Bee	Endangered	Historic occurrences only. Range in Ontario uncertain.	Inhabits a wide range of habitats: open meadows, agricultural and urban areas, boreal forests and woodlands.	Low	Currently the only known population is in Pinery Provincial Park
Monarch Butterfly	Special Concern	Widespread in the region	Caterpillars require milkweed plants confined to meadow and open areas. Adult butterflies use more diverse habitat with a variety of wildflowers	Moderate	Potentially suitable foraging habitat for monarch butterflies occurs on-site.
Mottled Duskywing	Endangered	Constance Bay area, Burnt Lands Alvar	Larval food plant (New Jersey Tea) found in sandy areas and alvars.	Low	Sandy areas and alvars not present in the study area.
Nine-spotted Lady Beetle	Endangered	Historically present but no reports in Ontario since mid-1990s	Habitat generalist	Low	No recent occurrence reports in the area, thought to be locally extirpated.
Rusty-patched Bumble Bee	Endangered	Historic records in Ottawa and Gatineau	Habitat generalist	Low	Currently the only known population occurs in Pinery Provincial Park.
Traverse Lady Beetle	Endangered	Unknown in Ottawa region. No southern Ontario records since 1985	Habitat generalist	Low	No new records of traverse lady beetle in Ontario, species thought to be absent in former habitats.
West Virginia White Butterfly	Special Concern	Unknown. No NESS or NHIC records. SARO range map includes Ottawa.	Requires mature moist deciduous woods with larval host plant toothwort.	Low	Necessary vegetation and toothwort plant not present on-site or within study area.
Yellow-banded Bumble Bee	Special Concern	Unknown. Historic occurrences and a few recent occurrences in Eastern Ontario/Western Quebec region.	Habitat generalist; mixed woodlands, variety of open habitat	Moderate	Potentially suitable foraging habitat for yellow-banded bumble bee occurs on-site.



## **APPENDIX D**

CVs for Key Personnel

## **Drew Paulusse, B.Sc.**

Senior Biologist / Manager of Environmental Services

Mr. Paulusse has over 12 years of experience in the environmental consulting industry, providing private industry and municipal and federal government clients with cost effective solutions to manage environmental constraints associated with land development proposals and infrastructure projects. Mr. Paulusse's expertise, as it relates to land development proposals and infrastructure projects is field assessment and regulatory permitting associated with species at risk, fish habitat and wetlands.

### **Education**

- B.Sc., Biology, Trent University, 2007
- Environmental Technician, Fleming College, 2004

### **Professional Experience**

<b>2018-date</b>	<b>GEMTEC Consulting Engineers and Scientists Limited</b> <i>Manager of Environmental Services</i>	<b>Ottawa, Ontario</b>
<b>2011-2018</b>	<b>Geofirma Engineering Limited</b> <i>Senior Biologist</i>	<b>Ottawa, Ontario</b>
<b>2007-2011</b>	<b>INTERA Engineering Limited</b> <i>Biologist</i>	<b>Ottawa, Ontario</b>
<b>2007</b>	<b>Canadian Wildlife Service, Environment Canada</b> <i>Wetland Conservation Officer</i>	<b>Burlington, Ontario</b>
<b>2005</b>	<b>Centre for Inland Waters, Environment Canada</b> <i>Junior Marine Technologist</i>	<b>Burlington, Ontario</b>

### **Professional Affiliations and Technical Training**

- Canadian Society of Environmental Biologists
- Ontario Association for Impact Assessment
- MTO/DFO/MNRF Protocol for Protecting Fish and Fish Habitat on Provincial Transportation Undertakings. Ministry of Transportation. 2018
- Ontario Wetland Evaluation System Certification Course. Ministry of Natural Resources and Forestry. 2017
- Headwater Drainage Feature Assessment Training Course. Rideau Valley Conservation Authority. 2017





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- Ecological Land Classification System Certification Course. Ministry of Natural Resources and Forestry. 2015
- Ontario Benthic Biomonitoring Network Certification Course. Ministry of Environment, Conservation and Parks. 2011

## Project Highlights

- ***DFO Self-Assessment and Preparation of Tender Special Provisions, Osceola Culvert Replacement, County of Renfrew, Ontario (2019):*** Project manager and technical lead responsible for the evaluation of the significance of fish habitat and species at risk, and completion of a DFO self-assessment. Work included aquatic habitat assessments, pathway of effects evaluation, culvert design recommendations and reporting.
- ***Biological Inventory, Ontario Power Generation Incorporated, Bath, Ontario (2018):*** Project manager and technical lead responsible for conducting a three-season inventory of avian and amphibian species at the Lennox Provincially Significant Wetland. Work included conducting presence and abundance surveys following the Canadian Wildlife Service marsh monitoring protocol and Bird Studies Canada breeding bird surveys, statistical analysis of species data trends and reporting.
- ***Wetland Management Plan, Ontario Power Generation Incorporated, Bath, Ontario (2018):*** Project manager and technical lead responsible for the development of an adaptive wetland management plan for the Lennox Provincially Significant Wetland. Work included a synthesis of historical data, statistical analysis of data trends, vegetation assessment, air photo interpretation, development of short-term and long-term management objectives and development of a standardized monitoring program.
- ***Environmental Compliance Monitoring, Petrie Island Causeway Rehabilitation Project, Ottawa, Ontario (2018):*** Project manager and technical lead responsible for monitoring constructor compliance with various Department of Fisheries and Oceans, Ministry of Natural Resources and Conservation Authority permit conditions during the Petrie Island Causeway Rehabilitation Project within the Ottawa River. Work included species at risk surveys, fish salvage, exclusion fence inspection, monitoring of sediment and erosion control measures, turbidity monitoring, regulatory agency consultation and weekly reporting.
- ***Wetland Delineation and Wetland Function Assessment, National Capital Commission, Ottawa, Ontario (2018):*** Project manager and technical lead responsible for the delineation of wetland pockets within the LeBreton Flats Redevelopment Area and the assessment of wetland function for the purpose of evaluating compensation requirements. Work was completed following both the federal and provincial wetland evaluation frameworks.







- ***Environmental Impact Statement, Code Drive Development, Smiths Falls, Ontario (2018):*** Project manager and technical lead responsible for the completion of an Environmental Impact Statement in support of a severance application for the creation of eight residential lots within a significant woodland and adjacent to a large local wetland. Work included targeted surveys for species at risk, breeding amphibians and marsh birds, impact assessment, development of lot-specific mitigation measures and agency consultations.
- ***Tree Conservation Report, Royal LePage Team Realty, Ottawa, Ontario (2018):*** Mr. Paulusse completed an inventory of all trees located on an urban commercial lot for the purpose of identify significant retainable trees and trees in conflict with the proposed site redevelopment. Work included, site inventory, tree removal permit preparation and reporting.
- ***Environmental Compliance Monitoring, Airport Parkway Culvert Rehabilitation Project, Ottawa, Ontario (2018):*** Project manager and technical lead responsible for monitoring constructor compliance with Ministry of Natural Resources and Conservation Authority permit conditions. Work included species at risk surveys, exclusion fence inspection, monitoring of sediment and erosion control measures and weekly reporting.
- ***Tier I and II Natural Environment Report, Crain's Construction, Ottawa, Ontario (2018):*** Project manager and technical lead responsible for completing an inventory of site flora and fauna, completion of species at risk surveys, regulatory agency consultation, impact assessment and reporting.
- ***Species at Risk Assessment, National Capital Commission, Gatineau, Quebec (2018):*** Project manager responsible for the completion of avian species at risk surveys to determine the presence or absence of chimney swift and barn swallows at a contaminated site. Work was undertaken to support an Ecological Risk Assessment.
- ***Fish Habitat Assessment, Various Culvert Replacements, Ottawa, Ontario (2018):*** Project manager and technical lead responsible for the evaluation of the significance of fish habitat at three culvert crossings in rural Ottawa. Work included aquatic habitat assessments, pathway of effects evaluation, culvert design recommendations and reporting.
- ***Environment Effects Evaluation Assessment, Britannia Wall Rehabilitation Project, Ottawa, Ontario (2018):*** Project manager and technical lead responsible for completing a comprehensive tree inventory, wetland boundary delineation, significant wildlife habitat assessment and evaluation of effects associated with the rehabilitation of the Britannia Wall, a 600-metre-long community flood protection structure.
- ***Environmental Compliance Monitoring, Petrie Island Beach Head Rehabilitation Project, Ottawa, Ontario (2018):*** Project manager and technical lead responsible for monitoring constructor compliance with various Department of Fisheries and Oceans, Ministry of Natural Resources and Conservation Authority permit conditions during the Petrie Island







Beach Head Rehabilitation Project within the Ottawa River. Work included species at risk surveys, exclusion fence inspection, monitoring of sediment and erosion control measures, and reporting.

- ***Provincially Significant Wetland Boundary Evaluation and Mitigation Plan, Town and County Chrysler, Smiths Falls, Ontario (2018):*** Project manager and technical lead responsible for revising the wetland boundary associated with a provincially significant wetland and development of a mitigation plan to enable the redevelopment of an adjacent commercial lot. Work included wetland vegetation delineation, regulatory technical document submissions, agency consultations, mitigation measure development and reporting.
- ***Environmental Impact Statement and Headwater Drainage Feature Assessment, Swank Construction Limited, Morrisburg, Ontario (2017-2018):*** Project manager and technical lead responsible for the completion of an Environmental Impact Statement with Headwater Drainage Feature Assessment for a 100-lot residential subdivision. Work included ecological land classification, breeding bird surveys, impact assessment and a three season assessment of hydrological conditions and their contributions to downstream fish habitat.
- ***Natural Heritage Inventory and Environmental Impact Assessment, Combermere Lodge Limited, Barry's Bay, Ontario (2017-2018):*** Project manager and technical lead responsible for the completion of a Natural Heritage Inventory and Environmental Impact Assessment completed in support of a 54-lot condominium development located in an environmentally sensitive area. Work included wetland boundary delineation, identification of significant wildlife habitat, application of the significant wildlife habitat mitigation support tool, completion of a two-year survey of site flora and fauna, impact assessment and town hall presentations.
- ***Lake Capacity Assessment, Combermere Lodge Limited, Barry's Bay, Ontario (2017-2018):*** Project manager and technical lead responsible for the predictive assessment of septic effluent impacts relating to the operation of a 54-lot condominium development on three adjacent waterbodies. Work included limnological investigations over two seasons, application of the provincial lakeshore capacity model, hydrogeological investigations, mass flux analysis, mitigation measure development and reporting.
- ***Detailed Quantitative Ecological Risk Assessment, National Capital Commission, Gatineau, Quebec (2016 to 2018):*** Project manager and technical lead for the completion of a Detailed Quantitative Ecological Risk Assessment completed for a former landfill property located adjacent to the Ottawa River. Work included aquatic habitat assessment, benthic community characterization, species at risk surveys, terrestrial wildlife surveys and analysis of site-specific aquatic toxicity data.
- ***Environmental Compliance Monitoring, Carp Snow Dump, Ottawa, Ontario (2017):*** Project manager and technical lead responsible for monitoring constructor compliance with a Ministry of Natural Resources overall benefit permit for blanding's turtle associated with the





construction of the Carp Snow Dump. Work included weekly exclusion fence inspection and weekly reporting to the contract administrator.

- ***Fish Habitat Assessment, Little Bark Bay Properties, Barry's Bay, Ontario (2017):*** Project manager and technical lead responsible for the identification and evaluation of significance of fish habitat within and adjacent to a proposed plan of subdivision. Work included aquatic habitat assessments, pathway of effects evaluation, application of the Department of Fisheries and Oceans self-assessment process and reporting.
- ***Species at Risk and Migratory Bird Screening Assessment, City of Ottawa, New Edinburg Park Redevelopment Project, Ottawa, Ontario (2017):*** Project manager and technical lead responsible for the completion of a species at risk and migratory bird screening assessment to assist in bid tender package preparation for the re-development of New Edinburg Park. Work included a general habitat assessment, a probability of occurrence assessment, follow-up pre-construction surveys and reporting.
- ***Fish Habitat Assessment, Highway 417 Culvert Replacement Project, Ottawa, Ontario (2017):*** Project manager and technical lead responsible for the evaluation of the significance of fish habitat at two culvert crossings Ottawa. Work included aquatic habitat assessments, pathway of effects evaluation, application of the Department of Fisheries and Oceans self-assessment process and reporting.
- ***Fish Habitat and Headwater Drainage Feature Assessment, Private Landowner, Ottawa, Ontario (2017):*** Project manager and technical lead responsible for the completion of a two-season hydrological assessment of on-site water courses and assessment of fish habitat. Work completed in support of a permit required to develop an unopened road allowance.
- ***Environmental Impact Statement and Wetland Boundary Assessment, Town and Country RV, Perth, Ontario (2016-2017):*** Project manager and technical lead responsible for delineation of a provincially significant wetland and impact assessment associated with the expansion of an existing commercial enterprise. Work included ecological land classification, identification of significant wildlife habitat, species at risk surveys, wetland vegetation assessment, impact assessment and development of site-specific mitigation measures.
- ***Environmental Impact Statement, Blueberry Creek Veterinary Clinic, Perth, Ontario (2016):*** Project manager and technical lead responsible for delineation of a provincially significant wetland and impact assessment associated with the development of a commercial lot. Work included ecological land classification, identification of significant wildlife habitat, species at risk surveys, wetland vegetation assessment, impact assessment and development of site-specific mitigation measures.





# GEMTEC

## Taylor Warrington, B.Sc.

### Biologist

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Ms. Warrington has 4 years of experience in the environmental consulting industry, providing private industry and municipal and federal government clients with cost effective solutions to manage environmental constraints associated with land development proposals and infrastructure projects.

### Education

- B.Sc., Life Sciences, McMaster University, 2015
- Graduate Certificate, Ecosystem Restoration, Niagara College, 2016

### Professional Experience

2020-date	<b>GEMTEC Consulting Engineers and Scientists Limited</b> <i>Biologist</i>	<b>Ottawa, Ontario</b>
2019-2020	<b>GEMTEC Consulting Engineers and Scientists Limited</b> <i>Junior Biologist</i>	<b>Ottawa, Ontario</b>
2017-2019	<b>Geofirma Engineering Limited</b> <i>Junior Biologist/Scientist</i>	<b>Ottawa, Ontario</b>
2016	<b>Dillon Consulting</b> <i>Junior Field Biologist</i>	<b>Little Current, Ontario</b>
2014	<b>McMaster University</b> <i>Laboratory-Research Assistant; URBAN Project Coordinator</i>	<b>Hamilton, Ontario</b>

### Professional Affiliations and Technical Training

- Ottawa Conservation Partners Workshop: How to Prepare and Environmental Impact Statement. 2020.
- Class 2 Backpack Electrofishing Crew Leader Certification Course. June, 2019.
- Ontario Reptile and Amphibian Survey Course. Blazing Star Environmental, Natural Resource Solutions Inc., and Ontario Nature. 2018
- Ontario Benthic Biomonitoring Network Certification Course. Ministry of Environment, Conservation and Parks. 2016

### Project Highlights

- **Tier I and II Natural Environment Report, Crain's Construction, Lanark County, Ontario.** Biologist responsible for completing on-going surveys in support of a proposed





quarry application. Surveys include winter mammal and ungulate use surveys, bat maternity roost surveys, ecological land classification, breeding bird surveys, turtle basking surveys, amphibian breeding surveys and targeted species at risk surveys for American ginseng and eastern whip-poor-will.

- ***Botanical Surveys, Ontario Power Generation Incorporated, Hydroelectric Generating Stations throughout Central and Eastern Ontario.*** Biologist responsible for completing on-going botanical surveys at 12 hydroelectric generating stations to update existing records. Botanical surveys will include a combination of field survey protocols including random meander, transects and quadrant sampling methods to identify vascular plant species present at each site.
- ***Foresters Falls Dam Removal, Renfrew County, Ontario.*** Biologist responsible for conducting a species at risk screening assessment to identify the presence of species at risk within the project area and evaluate the potential impacts on SAR and their habitat if the dam is removed. On-going surveys including targeted turtle basking surveys, and terrestrial wildlife and vegetation surveys.
- ***Environmental Impact Statement, Subdivision Development, Lanark County, Ontario.*** Biologist responsible for the completion of an Environmental Impact Statement for a proposed 25-lot subdivision application. Work included ecological land classification surveys, targeted surveys for species at risk, breeding amphibians and birds, basking turtle surveys, bat maternity roost surveys, headwater drainage feature assessment, butternut health assessment, impact assessment, development of lot-specific mitigation measures and agency consultation.
- ***Wetland Evaluation and Significant Wildlife Habitat Surveys, Ontario Power Generation Incorporated, Bath, Ontario (2019).*** Biologist responsible for conducting a wetland evaluation and significant wildlife habitat surveys at the Lennox Provincially Significant Wetland. Work included conducting turtle basking surveys, reptile hibernacula surveys, targeting species at risk surveys for Least Bittern and a wetland evaluation following the MNRF's Ontario Wetland Evaluation System.
- ***Environmental Impact Statement, Proposed Subdivision Development, Hawksbury, Ontario (2019).*** Biologist responsible for the completion of an Environmental Impact Statement in support of a proposed 272-lot subdivision application. Work included ecological land classification surveys, targeted surveys for breeding birds, bat maternity roost surveys, headwater drainage feature assessment, impact assessment and development of lot-specific mitigation measures.
- ***Surface Water Impact Assessment, Green Lake Development, Barry's Bay, Ontario (2019):*** Biologist responsible for the completion of a surface water impact assessment supporting two residential lot severances. Work included a review of existing data on Green





Lake, application of the provincial lakeshore capacity model, mitigation measure development and reporting.

- ***Biological Inventory, Ontario Power Generation Incorporated, Bath, Ontario (2018):*** Field Biologist responsible for conducting a three-season inventory of avian and amphibian species at the Lennox Provincially Significant Wetland. Work included conducting presence and abundance surveys following the Canadian Wildlife Service marsh monitoring protocol and Bird Studies Canada breeding bird surveys, statistical analysis of species data trends and reporting.
- ***Environmental Compliance Monitoring, Petrie Island Causeway Rehabilitation Project, Ottawa, Ontario (2018):*** Field biologist responsible for monitoring constructor compliance with various Department of Fisheries and Oceans, Ministry of Natural Resources and Conservation Authority permit conditions during the Petrie Island Causeway Rehabilitation Project within the Ottawa River. Work included species at risk surveys, fish salvage, exclusion fence inspection, monitoring of sediment and erosion control measures, turbidity monitoring, regulatory agency consultation and weekly reporting.
- ***Environmental Impact Statement, Code Drive Development, Smiths Falls, Ontario (2018):*** Field Biologist responsible for the completion of an Environmental Impact Statement in support of a severance application for the creation of eight residential lots within a significant woodland and adjacent to a large local wetland. Work included targeted surveys for species at risk, breeding amphibians and marsh birds, impact assessment, development of lot-specific mitigation measures and agency consultations.
- ***Tier I and II Natural Environment Report, Crain's Construction, Ottawa, Ontario (2018):*** Field biologist responsible for completing an inventory of site flora and fauna, completion of species at risk surveys, bat exit surveys, regulatory agency consultation, impact assessment and reporting.
- ***Species at Risk Assessment, National Capital Commission, Gatineau, Quebec (2018):*** Field biologist responsible for the completion of avian species at risk surveys to determine the presence or absence of chimney swift and barn swallows at a contaminated site. Work was undertaken to support an Ecological Risk Assessment.
- ***Environment Effects Evaluation Assessment, Britannia Wall Rehabilitation Project, Ottawa, Ontario (2018):*** Field Biologist responsible for completing a comprehensive tree inventory, wetland boundary delineation, significant wildlife habitat assessment and evaluation of effects associated with the rehabilitation of the Britannia Wall, a 600-metre-long community flood protection structure.
- ***Environmental Compliance Monitoring, Petrie Island Beach Head Rehabilitation Project, Ottawa, Ontario (2018):*** Field biologist responsible for monitoring constructor



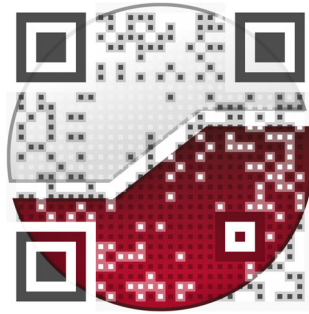


compliance with various Department of Fisheries and Oceans, Ministry of Natural Resources and Conservation Authority permit conditions during the Petrie Island Beach Head Rehabilitation Project within the Ottawa River. Work included species at risk surveys, exclusion fence inspection, monitoring of sediment and erosion control measures, and reporting.

- ***Natural Heritage Inventory and Environmental Impact Assessment, Combermere Lodge Limited, Barry's Bay, Ontario (2017-2018):*** Field biologist responsible for the completion of a Natural Heritage Inventory and Environmental Impact Assessment completed in support of a 54-lot condominium development located in an environmentally sensitive area. Work included wetland boundary delineation, identification of significant wildlife habitat, application of the significant wildlife habitat mitigation support tool, completion of a two-year survey of site flora and fauna, and impact assessments.
- ***Species at Risk and Migratory Bird Screening Assessment, City of Ottawa, New Edinburg Park Redevelopment Project, Ottawa, Ontario (2017):*** Field biologist responsible for the completion of a species at risk and migratory bird screening assessment to assist in bid tender package preparation for the re-development of New Edinburg Park. Work included a general habitat assessment, a probability of occurrence assessment, follow-up pre-construction surveys and reporting.
- ***Post-Construction Windfarm Monitoring for Wildlife Impacts, Little Current, Ontario (2016):*** Field biologist responsible for the completion of post-construction monitoring of a windfarm for avian and mammalian fatalities. Work included fatality surveys, vegetation surveys, and wildlife scavenger surveys.
- ***Long-term Changes in Ecosystem Health, Frenchman's Bay, Pickering, Ontario (2015):*** Field biologist responsible for evaluating the long-term changes in ecosystem health of Frenchman's Bay. Work included: data review, analysis of data trends, watershed and land-use mapping, digitization of wetland vegetation cover and analysis of changes over time, reporting and symposium presentation.



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