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Environmental Impact Statement
Proposed Severance for Lot Addition
5417 Loggers Way
Geographic of Township of Fitzroy

City of Ottawa, Ontario

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Submitted to:

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February 28, 2024
Project: 100227.100

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EXECUTIVE SUMMARY

GEMTEC Consulting Engineers and Scientists Limited (GEMTEC) was retained by 1823023 Ontario Inc. to complete an Environmental Impact Statement (EIS) for the property located on Part of Lot 26, Concession 5, in the Geographic Township of Fitzroy, in the City of Ottawa, Ontario, municipally addressed as 5417 Loggers Way. This EIS has been completed in support of a proposed severance application for lot addiction to an existing 0.22-hectare (ha) property and was completed in accordance with all federal, provincial, and municipal policies and guidelines, as applicable.

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

Following completion of the desktop review and field investigation the following natural heritage features were identified on-site or within the study area: local unevaluated wetlands, provincially significant wetlands (PSW), significant woodlands, floodplains, City of Ottawa Natural Heritage System areas, and significant wildlife habitat for turtle wintering area (*candidate*), colonial bird nesting (*candidate),* deer yarding area (*confirmed*), waterfowl nesting area (*candidate*), woodland amphibian breeding (*candidate*), marsh breeding bird habitat (*candidate),* bald eagle and osprey nesting, foraging and perching habitat (*candidate*), deer movement corridors (*candidate*), special concern and rare wildlife habitat for Canada warbler, eastern wood-pewee, wood thrush, eastern musk turtle, eastern ribbonsnake, northern map turtle, snapping turtle, and river redhorse, and fish habitat.

The following SAR and their habitat were identified as having a potential to occur on-site: least bittern, eastern small-footed myotis, little brown myotis, tri-colored bat, Blanding's turtle, American eel, lake sturgeon, hickory nut and restricted species. Regulated Category 2 and 3 habitat was identified on-site for Blanding's turtle. No regulated habitat was identified on-site for least bittern. No other SAR species were identified during the field investigation.

Given the existing residential dwelling on the proposed expansion parcel, the proposed severance and addition application is not anticipated to negatively impact any natural heritage features on-site. Any potential impacts would be associated with future developments on the retained lands.

As no in-water work is proposed, potential impacts to natural heritage features on the retained lands are primarily associated with the loss of woodland and forest habitat, and indirect impacts to significant wildlife habitat and fish habitat.

Potential impacts to natural heritage features on-site are likely to be mitigated through the implementation of a development envelope and setbacks from natural heritage features. Impacts to local wetlands and fish habitats can be mitigated with the proposed 30 m setback in conjunction with the proposed 0.2 ha development envelope. Impacts to provincially significant wetlands, significant wildlife habitat, and SAR habitat can be mitigated with a 50 m setback from the provincially significant wetland feature. Impacts to significant woodlands and associated habitats can be mitigated through the implementation of the 0.2 ha development envelopes.

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

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

The proposed severance application and additions complies with the natural heritage policies of the Provincial Policy Statement and the City of Ottawa Official Plan. No negative impacts to identified natural heritage features or their ecological functions are anticipated due to the proposed land severances for lot addition if all mitigation measures in Section 7 are enacted, and best management practices followed.

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1.0 INTRODUCTION

GEMTEC Consulting Engineers and Scientists Limited (GEMTEC) was retained by 1823023 Ontario Inc. c/o ZanderPlan Inc., to carry out an Environmental Impact Statement (EIS) for the property municipally addressed as 5417 Loggers Way, located on Part of Lot 26, Concession 5, in the Geographic Township of Fitzroy, in the City of Ottawa, Ontario (hereafter referred to as "the subject property"). The general location of the subject property is illustrated on Figure A.1 in Appendix A.

1.1 Purpose

The proponent is seeking a land severance and subsequent lot addition to an undersized lot of approximately 0.22-hectare (ha), located at 5417 Loggers Way. The subject property is landlocked with legal access over the abutting lands. The proponent is seeking a proposed severance for lot addition of a 0.11 ha parcel adjacent to the east of the site, as well as a proposed severance for lot addition of a 0.07 ha parcel to the west of the site.

Based on Section 4 of the City-Wide Policies of the City of Ottawa Official Plan (Ottawa, 2022), an EIS is required showing that the proposed project will not negatively impact any potential natural heritage features, which may be present within the study area. The study area is defined as the property boundary and the adjacent lands encompassing an area of 120 m beyond the property boundary. The subject project and the extents of the study area are illustrated on Figure A.2 in Appendix A.

1.2 Objective

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

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

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

- Provincial Policy Statement (MMAH, 2020);

- Endangered Species Act (Ontario, 2007);
- Migratory Birds Convention Act (Canada,1994);
- Fisheries Act (Canada, 1984);
- Conservation Authorities Act (Ontario, 1990);
- Natural Heritage Reference Manual (OMNR, 2010);
- City of Ottawa EIS Guidelines (Ottawa, 2023); and
- City of Ottawa Official Plan (Ottawa, 2022).

1.3 Physical Setting

The subject property is located on a landlocked parcel municipally addressed as 5417 Loggers Way. The subject site as well as the surrounding properties are located on Part of Lots 25, 26, and 27, Concession 5 and 6, in the Geographic Township of Fitzroy, in the City of Ottawa, Ontario. A single residential dwelling is present within 5417 Loggers Way, fronting to Pickerel Bay of the Ottawa River. The property is comprised of deciduous forests, mixed swamps and meadow marshes.

The subject property is bound to the north and east by the property municipally addressed as 171 Dewolfe Street. To the south, the site is bound by vacant land on Parts of Lots 25 and 26, Concession 5. To the west the property is bound by the Ottawa River.

1.4 Land Use Context

Land use for the site from the City of Ottawa Official Plan Schedule B9 is Rural. Schedule C11 (West) shows the site within the Natural Heritage Features Overlay. The southern portions of the property as well as the westerly adjacent property along the Ottawa River are zoned as Environmental Protection Zone (EP3) and floodplain overlay.

2.0 METHODOLOGY

2.1 Desktop Review

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

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

- Make a Map: Natural Heritage Areas (OMNRF, 2023a);
- Land Information Ontario (OMNRF, 2011);
- City of Ottawa Official Plan (Ottawa, 2022);
- Ontario Geological Survey (OGS, 2019);
- Natural Heritage Information Centre Biodiversity Explorer (OMNRF, 2013);
- Fisheries and Oceans Canada SAR Maps (DFO, 2023);
- Fish ON-Line (MNRF, 2023);
- Fish Activity Area (MNRF, 2023);
- Cornell Lab of Ornithology: eBird (2023);
- Breeding Bird Atlas of Ontario (Cadman et al., 2007);
- Ontario Herpetofaunal Atlas (Oldham and Weller, 2000);
- Wildlife Values Area (OMNRF, 2023a);
- Wildlife Values Site (OMNRF, 2023b);
- Ontario Reptile and Amphibian Atlas (Ontario Nature, 2019);
- Mississippi Valley Conservation Authority Geoportal (MVCA, undated); and
- Geo Ottawa (Ottawa, 2023).

2.2 Field Investigations

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

The field investigation was completed on June 27, 2023, from 12:45 to 15:15. Conditions during the site investigation were as follows: 24°C, cloudy (100% cloud cover), no precipitation and light wind (Beaufort 1). Photographs of site features taken during field investigations are provided in Appendix B.

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 June 27, 2023, following the Ecological Land Classification System for Southern Ontario (Lee et al., 2008). Vegetation communities were confirmed in the field by employing the random meander methodology while documenting dominant vegetation species within the various vegetation community forms.

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 land severance for lot addition 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);
- Significant Wildlife Habitat Mitigation Support Tool (OMNRF, 2014b); and
- City of Ottawa Official Plan (City of Ottawa, 2022).

3.0 EXISTING ENVIRONMENT

3.1 Ecoregion

The site is situated in Ecoregion 6E-16 (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 northern portion of the Ecoregion, which the subject property is located, is underlain by glaciolacustrine deposits due to the post-glacial incursion of salt water from the Champlain Sea. This Ecoregion falls within Rowe's (1972) Great Lakes-St. Lawrence Forest Region, including the Upper St. Lawrence section, with approximately half of the ecodistrict having been converted to cropland and pasture (Crins et al., 2009).

3.2 Study Area Land Use

A review of aerial photographs indicates that the subject property and surrounding area have undergone little development since 1976 (Figure1). The 1976 photo shows Dewolfe Street intersecting with Loggers way, with a single residential dwelling between this intersection and fronting to the Ottawa river. The remainder of the study area is naturalized with dense vegetation, undisturbed.

Between 1976 and 1999, additional properties were constructed east of the study area, situated between Loggers Way and the Mississippi River.

Apart from some minor additions to the existing dwellings, the subject site and study area have remained as they are since approximately 1999.

Figure 1 – Temporal Changes in Land Use within Study Area

3.3 Landforms, Soils and Bedrock Geology

The topography of the site is relatively flat throughout. Elevations rise and fall from a topographical low of 74 metres above sea level (mASL) to a topographical high of 82 mASL throughout the study area. Elevations are highest in the eastern portions of the study area.

A single topographical landform, as mapped by Chapman and Putnam (1984) is described on-site; shallow till and rock ridges of the Ottawa Vally Clay Plains physiographic region.

The Ontario Geological Survey (OGS, 2019) identifies two surficial soil units on-site: organic deposits, and Precambrian bedrock. The organic deposits, comprised of peat, muck, and marl, are present only towards the northerly limits of the site. The remainder of the site is occupied by Precambrian bedrock.

Bedrock at the site, as described by OGS (2019) consists of the Grenville Supergroup Group and Flinton Group, comprised of carbonate metasedimentary rocks, marble, calc-silicate, skarn, and tectonic breccias and a fault line which bisects the property in the north from west to east.

3.4 Sub Watershed Study

The study area is located within the Chaudière Falls - Ottawa River sub watershed. Presently, there is no sub watershed study available for this area.

3.5 Surface Water, Groundwater, and Fish Habitat

Surface water features on-site consisted of the Ottawa River, an unnamed watercourse, local wetlands, and the Morris Island Wetland Complex Provincially Significant Wetland (PSW).

As identified by GeoOttawa mapping and the MVCA geoportal, portions of the 1: 100 year floodplain for the Ottawa and Mississippi Rivers extend on-site. The Ottawa River occurs towards the western and southern limits of the study area, whereas the Mississippi River occurs only towards the southeastern limits of the study area. The floodplain extends on to the site from the western and southern aspects of the site.

A single unnamed watercourse was identified within the study area. Based on field observations and aerial imagery, primary inputs for the watercourse are from draining wetlands originating from adjacent properties, north of the site. The watercourse flows south passing within 20 m of the western property line, before discharging into the Ottawa River at Pickerel Bay.

No historical records for fish species were identified for the watercourse on-site. However, the Mississippi River and Ottawa River are known to provide habitat for a wide range of fish species including but not limited to brown bullhead, channel catfish, largemouth bass, northern pike, white sucker, yellow perch and a variety of small-bodied species (MNRF, 2023).

Wetlands within the study area consist of many local unevaluated wetlands and a PSW complex identified as the Morris Island Wetland Complex. The wetlands were observed throughout the entire site. The Morris Island Wetland Complex continues off-site to the northeast and northwest, extending approximately 1.3 km outside of the study area.

A fisheries assessment was not conducted as part of this EIS. However, based on field observations, and proximity and connectivity to the Mississippi and Ottawa Rivers, the unnamed watercourse and all wetlands are likely to provide fish habitat for small-bodied, warm-water fish species.

Groundwater investigations were not completed in support of this EIS.

The Morris Island Wetland Complex PSW, local unevaluated wetlands, and the unnamed watercourses are illustrated in Appendix A Figure A.2.

3.6 Vegetation Communities

Vegetation communities on-site were confirmed by GEMTEC on June 27, 2023, following protocols utilized in the Southern Ontario Ecological Land Classification (ELC) System (Lee et al., 2008). Vegetation in the study area consists of hardwood deciduous forest types, mixed swamps, mixed upland forests, and meadow marshes.

Table 3.1 below provides a summary of the various vegetation communities identified on-site and Figure A.3 in Appendix A provides an illustration of the various vegetation communities.

Table 3.1 – Vegetation Communities

ELC Community Type	Description	Size (ha)
Graminoid Mineral Meadow Marsh (MAMM1)	Restricted to the southern limits of the proposed western addition, this community is an extension of the PSW west of the subject site. Vegetation within this community was dominated by herbaceous and graminoid groundcover including a variety of grasses (*Poacea spp*.), horsetails (*Equisetum spp*.), sensitive fern (*Onoclea sensibilis*), and cinnamon fern (*Osmundastrum cinnamomeum*). Sub-dominant groundcover species include swamp milkweed (*Asclepias incarnata*), goldenrod (*Solidago spp.),* sweet clover (*Melilotus spp*.), vetches (*Vicia spp.),* and forget-me-nots (*Myosotis spp*.). Shrub vegetation was sparse, limited to willow (*Salix spp*.) and honeysuckle (*Lonicera spp*.).	0.015
White Cedar – Hardwood Mineral Mixed Swamp (SWMM1-1)	This community is limited to the southern property line, adjacent to the Ottawa River. Tree cover was dominated by eastern white cedar (*Thuja occidentalis*), with lesser occurring constituents including basswood (*Tilia americana*), and sugar maple (*Acer saccharum*). Groundcover include European frog bit *(Hydrocharis morsus-ranae*), trout lily (*Erthronium Americanum*), cinnamon fern, sedges (*Cyperaceae spp.),* mosses (*Class: Bryophyta*), green algae (*Chlorophyta spp*.), and creeping Jenny (*Lysimachia nummularia*).	0.052
Dry – Fresh Sugar Maple – Ironwood Deciduous Forest (FODM5-4)	Found throughout the site, including the area of the existing dwelling, as well as portions of the proposed additions are comprised of this deciduous community. Canopy vegetation was dominated by sugar maple, ironwood (*Ostrya virginiana*), red oak, and hornbeam. Ground cover was limited to grasses, great white trillium (*Trillium grandiflorum*), and mosses. In the north of the property is a rural residential inclusion with a single-family dwelling.	0.368

3.7 Wildlife

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

4.0 NATURAL HERITAGE FEATURES

Natural Heritage Features (NHFs) in Ecoregion 6E are defined in the PPS as “features and area, 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, *habitats of endangered species and threatened species, significant wildlife habitat* and *significant areas of natural and scientific interest*, which are important for their environmental an social values as a legacy of the natural landscape of an area”.

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

4.1 City of Ottawa Natural Heritage System

The City of Ottawa has two Natural Heritage Overlays which appear on the C11 series of Schedules of the Official Plan (2022): a Natural Heritage System Overlay and a Natural Heritage Features Overlay. The city of Ottawa aims to protect the City’s natural environment through identification of a Natural Heritage System, Natural Heritage Features and related policies.

The Natural Heritage System consists of core natural areas and natural linkage areas. Natural Heritage Features occur both inside and outside the Natural Heritage System. The Natural Heritage System and the features within it are subject to a higher standard of protection than features outside the Natural Heritage System (Ottawa, 2022).

The City recognizes the following natural heritage features, as defined in Ottawa’s Environmental Impact Study Guidelines: significant wetlands, habitat for endangered and threatened species, significant woodlands, significant valleylands, significant wildlife habitat, Areas of Natural and Scientific Interest, urban natural features, natural environment areas, natural linkage features and corridors, groundwater features, surface water features, including fish habitat, and landform features.

Based on Schedule C11 – A – Natural Heritage System (West), the following features are mapped on-site and within the study area: Natural Heritage System Core Area, Natural Heritage Features Overlay, and Significant Wetlands. Schedule C15 – Environmental Constraints illustrates the presence of floodplains on the site.

Impacts to the identified Natural Heritage System from the proposed development are discussed in Section 6.

4.2 Provincially Significant Wetlands

As described in the Natural Heritage Reference Manual (OMNR, 2010), wetlands “mean lands that are seasonally or permanently covered by shallow water, as well as lands where the water table is close to or at the surface.” While *significant* regarding 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.”

Based on information provided by the NHIC (OMNRF, 2014a), City of Ottawa Official Plan (2022), and MVCA GeoPortal (undated), the Morris Island Wetland Complex Provincially Significant Wetland (PSW) has been confirmed to occur on-site and within the study area.

Within the confines of the site, the Morris Island Complex PSW is limited to the southern corner of the subject property as well as the proposed western addition. On-site the PSW is associated with the Graminoid Mineral Meadow Marsh (MAMM1) as previously described in Section 3.6. The PSW complex extends outside of the study area approximately 2 km north, east and southeast.

Based on online databases as well as field observations, local unevaluated wetlands were also present, also limited to the proposed western addition as well as a small section in the northern corner of the site. The local unevaluated wetlands lay adjacent to the PSW.

Impacts to Provincially Significant Wetlands as well as local unevaluated wetlands, from the proposed development are discussed in Section 6.

4.3 Significant Woodlands

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

The subject site is located within the rural policy area of the City of Ottawa. As established in the City of Ottawa Significant Woodlands: Guidelines for Identification, Evaluation, and Impact Assessment (Ottawa, 2022), rural policy area woodlands are to be assessed based on the criteria established in the NHRM. The subject site falls into the rural planning area of the Ottawa West Catchment, and as established in the City of Ottawa Significant Woodland Guidelines, the percent forest cover for this area is 38.4%. Therefore, the minimum size criteria for significant woodlands in the Ottawa West Catchment planning jurisdiction is 50 ha. Furthermore, the minimum size criteria for interior woodland habitat is 8 ha.

Table C.2 in Appendix C, presents the screening rationale for significant woodlands applied in this EIS. Based on the results of the significant woodland screening presented in Table C.2,

significant woodlands are present on-site based on attributes including contiguous woodland size (greater than 50 ha), proximity and linkages to other natural heritage features, and source water protection. Significant woodlands are illustrated on Figure A.4 in relation to other site features.

Section 10.1.5 Natural Hazards: Wildland Fire Hazard, of The City of Ottawa EIS Guidelines (Ottawa, 2023), states that development shall generally be directed to areas outside of lands that are unsafe for development due to the presence of hazardous forest types for wildland fire. Based on the City of Ottawa GeoPortal (Undated), the woodlands on-site are classified as having a 'low' and 'moderate' potential hazardous forest types for woodland fire. All of 5417 Loggers Way and most of 171 Dewolfe Street are classified as 'moderate' risk with some areas of 171 Dewolfe Street being considered 'low' risk. No areas of 'high' risk were identified on-site based on a review of City of Ottawa GeoPortal. The closest 'high' risk area is located approximately 160 m southeast of the site, outside of the study area. As such, hazardous forest types are not anticipated to pose a risk to the proposed project and are not further discussed or evaluated within the EIS.

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

4.4 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).

No valleylands were identified on-site during the desktop review or during the site investigation. However, as discussed in Section 1.4 and 3.5 above, portions of the 1:100 year and 1:350 year flood plains for the Ottawa River have been identified on-site and within the proposed western addition, as identified by GeoOttawa and MVCA mapping.

Schedules C11 – A (Natural Heritage System - West) and C15 (Environmental Constraints) of the City of Ottawa Official Plan (2022), GeoOttawa (Undated), as well as the MVCA GeoPortal (undated), show the mapped floodplains overlapping with the PSW complex as well as the local wetlands in many locations. Mapped floodplains on-site are illustrated on Figure A.4.

In accordance with City of Ottawa and MVCA policies, no development is permitted within the 1:100 year flood plain. Development may be permitted within the 1:350 year flood plain providing appropriate mitigation measures are utilized.

Impacts to significant valleylands associated with the 1:100 and 1:350 year flood plains are discussed in Section 6 below.

4.5 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). ANSIs are a critical component to conservation reserves and provincial parks, representing important natural features that are not found in protected areas. (OMNR, 2010).

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

4.6 Significant Wildlife Habitat

The natural heritage reference manual (OMNR, 2010), in combination with the significant wildlife habitat technical guide (OMNR, 2000), and the significant wildlife habitat ecoregion criterion schedules (OMNRF, 2015) were used to identify and evaluated potential significant wildlife habitat on-site. The Significant Wildlife Habitat (SWH) is broadly categorized as habitats of seasonal concentration of animals, rare vegetation communities, specialized habitats for wildlife, habitats of species of conservation concern and animal movement corridors. Table C.3, C.4, C.5, C.6, and C.7 in Appendix C, provide the screening rationale for each category of significant wildlife habitat, respectively.

4.6.1 Habitats of Seasonal Concentration Areas of Animals

Seasonal concentration areas are habitats where large numbers of species congregate at one time of the year. The significant wildlife habitat technical guides (OMNR, 2000) and significant wildlife habitat ecoregion criterion schedules (OMNRF, 2015) identify 16 types of seasonal concentration habitats that may be considered significant wildlife habitat. These 16 types of seasonal habitat are presented in Table C.3 in Appendix C, including a brief description of the rationale as to why or why they are not assessed further in this EIS.

Following review of Table C.3 in Appendix C, three habitats of seasonal concentration of animals are present on-site: *candidate* turtle wintering, *candidate* colonial bird nesting habitat, and *confirmed* deer yarding areas and winter congregation areas. Each SWH is discussed in detail in the subsections below.

4.6.1.1 Turtle Wintering Areas

Candidate turtle wintering areas SWH were identified adjacent to the site, corresponding with the graminoid mineral meadow marsh (ELC code MAMM1) ecosites associated with the Morris Island Complex PSW. *Candidate* SWH in the study area was identified within the open waters of the Ottawa River.

Turtle wintering area SWH may be identified as permanent water bodies, large wetlands and bogs or fens with adequate dissolved oxygen, water deep enough to avoid freezing and have soft mud substrates (OMNRF, 2015).

While targeted turtle basking surveys were outside of the scope of this EIS, three indicator species, midland painted turtle, northern map turtle, and snapping turtle are known to be present within the Ottawa River. Additionally, online occurrence records from the NHIC indicate the presence of all three species either on-site or within 1 km of site. As such, it is likely that surface water features on-site and within the study area provides adequate turtle overwintering habitat.

Potential impacts to *candidate* turtle wintering areas from the proposed development are discussed in Section 6.

4.6.1.2 Colonial Nesting Bird Breeding Habitat

Candidate colonial nesting bird breeding SWH was identified adjacent to the site, corresponding with the graminoid mineral meadow marsh (ELC code MAMM1) associated with the Morris Island Complex PSW and along the shores of the Ottawa River.

Colonies are important to local bird population, typically sites are only known colony in area and are used annually. Nesting colonies of gulls and terns are on islands or peninsulas associated with open water or in marshy areas.

The NHIC identifies the presence of Colonial Waterbird Nesting Area within the 1 km^2 grid encompassing site, as well as within 1 km in all directions. Based on the guidelines provided in the Significant Wildlife Habitat Criteria Schedules (OMNRF, 2015a), Colonial Waterbird Nesting Areas as indicated by the NHIC corresponds with Colonially - Nesting Bird Breeding Habitat (Ground) in the criteria schedules (OMNRF, 2015a). Suitable ground nesting habitats are more likely associated with the rocky islands and peninsulas within the Ottawa and Mississippi Rivers, as opposed to the vegetation communities on-site.

While targeted surveys were outside of the scope of this EIS, four indicator species, Herring Gull, Ring-billed Gull, Common Tern, and Caspian Tern, are known to be present in the general area as indicated through eBird (2023).

Potential impacts to *candidate* colonial bird nesting SWH from the proposed project are discussed in Section 6.

4.6.1.3 Deer Yarding Areas and Winter Congregation Areas

White-tailed Deer Yard (Stratum 1) was *confirmed* by Land Information Ontario (2011b) during the desktop review. Based on the mapping provided, Stratum 1 deer yard covers the entire site, and extends approximately 5 km east of the site. Per the LIO (2011), *confirmed* deer yarding area has been identified in association with the dry to fresh sugar maple ironwood deciduous forest (ELC codes FODM5-4), on-site, as well as within the contiguous forests in the study area.

Impacts to deer yarding areas from the proposed project are discussed in Section 6 below.

4.6.2 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.

4.6.3 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 SWH, these eight types of specialized wild habitat are evaluated in Table C.4 in Appendix C.

Following a review of Table C.4 in Appendix C, three specialized habitats for wildlife have been identified on-site or within the study area: *candidate* waterfowl nesting area, *candidate* bald eagle and osprey nesting, foraging and perching habitat, and *candidate* woodland amphibian breeding habitat.

4.6.3.1 Waterfowl Nesting Area

Candidate waterfowl nesting area SWH was identified adjacent to the site within the mineral meadow marsh (ELC code MAMM1), and is associated with all upland habitats within 120 m of the meadow marsh communities.

Waterfowl nesting surveys were outside of the scope of work for this EIS, as such the presence or absence of waterfowl nesting area was not confirmed.

Potential impacts to *candidate* waterfowl nesting area are discussed in Section 6.

4.6.3.2 Bald Eagle and Osprey Nesting, Foraging and Perching Habitat

Candidate bald eagle and osprey nesting, foraging, and perching SWH was identified on-site. The sugar maple ironwood deciduous forest (FODM5-4) and white cedar hardwood mineral mixed swamp (SWMM1) provide the terrestrial component of the SWH, and are located adjacent to the open waters of the Ottawa River.

Formal bald eagle and osprey nesting, foraging, and perching surveys were out of the scope of this EIS. Neither species were observed during the field investigation.

Potential impacts to *candidate* bald eagle and osprey nesting, foraging, and perching habitat from the proposed project are discussed in Section 6 below.

4.6.3.3 Amphibian Breeding Habitat (Woodland)

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

Candidate woodland amphibian breeding habitat was identified on-site. The sugar maple ironwood deciduous forest (FODM5-4) provides the terrestrial component of the SWH, and is located adjacent to the wetlands, white cedar hardwood mineral mixed swamp (SWMM1) and graminoid mineral meadow marsh ecosite (MAMM1), which provide the aquatic portion of the SWH.

Formal amphibian breeding surveys were out of the scope of this EIS.

Potential impacts to *candidate* woodland amphibian breeding habitat from the proposed project are discussed in Section 6 below.

4.6.4 Habitats of Species of Conservation Concern

Provincial rankings are used by the Natural Heritage Information Centre to set protection priorities for rare species, like those described in Section 3.4 above for vegetation communities. Provincial rankings (S-ranks) are not legal designations such as those used to define the various protection statuses of species at risk, they are only intended to consider factors within the political boundaries of Ontario that might influence a particular species abundance, distribution, or population trend.

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

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

Following review of Table C.5 in Appendix C, two habitats of species of conservation concern have been identified on-site: *candidate* marsh breeding bird habitat, and habitat for special concern and rare wildlife species for eastern wood-pewee, Canada warbler, wood thrush, eastern ribbonsnake, eastern musk turtle, northern map turtle, snapping turtle, and river redhorse.

4.6.4.1 Marsh Breeding Bird Habitat

Candidate marsh breeding bird habitat was identified adjacent to the site within the mineral meadow marsh ecosite (ELC codes MAMM1).

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

Formal marsh breeding bird call surveys were out of the scope of this EIS. As such, the presence of marsh breeding bird SWH was not confirmed.

Potential impacts to *candidate* marsh breeding bird habitat from the proposed development area are discussed in Section 6.

4.6.4.2 Special Concern and Rare Wildlife Species SWH

Based on NHIC observation data, eight species of special concern have been identified on-site or within the broader study area: Canada warbler, eastern wood-pewee, wood thrush, eastern musk turtle, eastern ribbonsnake, northern map turtle, snapping turtle, and river redhorse. No other species of special concern or rare wildlife species were identified on-site or within the broader study area. Impacts to all special concern and rare wildlife species from the proposed project are discussed in Section 6 below.

Canada Warbler

Canada warbler is a small, colourful songbird with an S-rank of S4 (uncommon but not rare) and is listed as a species of special concern in Ontario. Data occurrence from the NHIC indicates the species occurring within the 1 km^2 grid that encompasses the site. Canada warbler was not observed during the field investigation. The Canada warbler prefers wet, mixed forests with well-developed shrub layers for breeding. Given the suitable woodlands on-site and within the study area, there is a moderate chance of the Canada warbler or suitable habitat to occur on-site.

Eastern Wood-Pewee

The eastern wood-pewee is a small flycatcher bird with an S-rank of S4 (uncommon but not rare) and is listed as a species of special concern in Ontario. Data occurrence from the NHIC indicates the species occurring within the 1 km^2 grid that encompasses the site as well as in the general area around the site. Eastern wood-pewee was observed during the field investigation. Eastern wood-pewee is a woodland species that is often found near clearings and edges. Given the suitable woodlands on-site and within the study area, as well as the on-site occurrence, there is a high chance of the eastern wood-pewee or suitable habitat to occur on-site.

Wood Thrush

The Wood thrush is a medium-sized songbird with an S-rank of S4 (uncommon but not rare) and is listed as a species of special concern in Ontario. Data occurrence from the NHIC indicates the species occurring within 1 km of the site. Wood thrush was not observed during the field investigation. This species prefers second growth, and mature deciduous and mixed forests, with saplings and well-developed understory layers, but may also nest in small forest fragments. Given the suitable woodlands on-site and within the study area, there is a moderate chance of the wood thrush or suitable habitat to occur on-site.

Eastern Musk Turtle

The eastern musk turtle is a secretive wetland turtle species with an S-rank of S3 (rare to uncommon) and is listed as a species of special concern in Ontario. Data occurrence from the NHIC indicates the species occurring within 1 km of the site. Eastern musk turtle was not observed during the field investigation. Eastern musk turtles are found in slow-moving ponds, lakes, marshes, and rivers, with abundant emergent vegetation and muddy bottoms that they burrow into for winter hibernation. Given the availability of potentially suitable aquatic habitat on-site and within the broader study area, there is a moderate potential for eastern musk turtle and its habitat to occur on-site.

Eastern Ribbonsnake

The eastern ribbonsnake is a slender, black snake with three yellow stripes running down its back, with an S-rank of S4 (uncommon but not rare) and is listed as a species of special concern in Ontario. Data occurrence from the NHIC indicates the species occurring within 1 km of the site. Eastern ribbonsnake was not observed during the field investigation. Eastern ribbonsnakes are found close to water, typically marshes, where its prey of frogs and small fish. This species overwinters in underground burrows or rock crevices. Given the availability of suitable aquatic habitat on-site, there is a moderate chance of eastern ribbonsnake occurring on-site.

Northern Map Turtle

The northern map turtle is a highly aquatic turtle species with an S-rank of S3 (rare to uncommon) and is listed as a species of special concern in Ontario. Data occurrence from the NHIC indicates the species occurring within the 1 km^2 grid that encompasses the site as well as 1 km around the

site. Northern map turtle was not observed during the field investigation. Northern map turtles inhabit rivers and lakes where it basks on rocks, logs, and banks. Given the availability of suitable aquatic habitat on-site and within the broader study area, there is a moderate potential for northern map turtle and its habitat to occur on-site.

Snapping Turtle

The snapping turtle is a highly aquatic turtle species with an S-rank of S3 (rare to uncommon) and is listed as a species of special concern in Ontario. Data occurrence from the NHIC indicates the species occurring within the 1 km^2 grid that encompasses the site as well as 1 km around the site. Snapping turtle was not observed during the field investigation. Snapping turtles are aquatic generalists, found in a variety of wetlands, water bodies and watercourses. Given the availability of suitable aquatic habitat on-site, there is a moderate potential for snapping turtle and its habitat to occur on-site.

River Redhorse

The river redhorse is a large, thick-bodied sucker fish species with an S-rank of S2 (very rare in Ontario) and is listed as a species of special concern in Ontario. Data occurrence from the NHIC does not indicate the presence of river redhorse within the study area. However, DFO SAR Map database identified river redhorse as present in the study area, limited to the Ottawa River and Mississippi River. River redhorse was not detected during the field investigation. River redhorse inhabits medium to large-size rivers that have substantial flows. Given the availability of suitable aquatic habitat within the Ottawa River and Mississippi River, there is a high potential for river redhorse to occur in the study area.

4.6.5 Animal Movement Corridors

Animal movement corridors are elongated areas used by wildlife to move from one habitat to another and allow for the seasonal migration of animals (OMNRF, 2015). The Significant Wildlife Habitat Ecoregion Criterion Schedules for Ecoregion 6E-11 (OMNRF, 2015) identifies two types of animal movement corridors: amphibian movement corridors and deer movement corridors. As per guidance presented by the MNRF (2015), animal movement corridors should only be identified as significant wildlife habitat when a *confirmed or candidate* significant wildlife habitat has been identified by the MNRF district office or by the regional planning authority.

Following review of Table C.6 in Appendix C, one animal movement corridor has been identified on-site, deer movement corridors.

4.6.5.1 Deer Movement Corridors

Deer movement corridors connect wintering habitat and are used during fall migration and spring dispersion and typically follows riparian areas, woodlots and areas of physical geography (OMNRF, 2015). Deer movement corridors must be determined when deer wintering habitat is confirmed.

Animals move between areas to satisfy their life history requirements. White-tail deer migrate seasonally between summer and winter ranges to access foraging habitats of agricultural lands and deciduous forests, and to winter habitats for the cover of coniferous forest stands. Cervid movement corridors require significant and continuous forest cover as deer must travel through unfamiliar territory with increased exposure to predation (MNRF, 2014b).

For an area to function as a movement corridor for migrating deer it requires specific habitat features; deer establish migration trails in forest habitat, often using terrain features such as ridges, valleys, and riparian areas. The species composition of tree cover in movement corridors varies but conifer species appear to be important. However, the structure of the forest is more significant to deer than its composition, with forest understory characteristics contributing the most to the function of migration corridors (MNRF, 2014b).

Targeted surveys to identify cervid movement corridors were not conducted as they were outside of the scope of this EIS. However, as discussed in Section 4.6.1.3, habitats on-site and within the study area likely serve as a cervid movement corridor due to the association with the Stratum I deer yard on-site and study area, as mapped by the OMNRF (LIO, 2011).

In accordance with the SWH Ecoregion Criterion Schedules for Ecoregion 6E, deer movement corridors are limited to all forested ecosites on-site (ELC codes FODM5-4).

Impacts to *candidate* deer movement corridors are discussed in Section 6.

4.7 Fish Habitat

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

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

As discussed in Section 3.5, surface water features on-site consist of the Morris Island Wetland Complex PSW, local unevaluated wetlands and an unnamed watercourse. Within the study area, surface water features consist of the Ottawa River.

A fisheries assessment was not conducted as part of this EIS. However, the Ottawa River is known to provide habitat for a wide range of fish species including black crappie, bluegill, brown bullhead, channel catfish, freshwater drum, goldeye, lake whitefish, largemouth bass, mooneye,

muskellunge, northern pike, pumpkinseed, rainbow smelt, rock bass, sauger, smallmouth bass, walleye, white sucker, yellow bullhead, and yellow perch Fish ON-Line (2023).

No fish species were observed within the unnamed watercourse or wetlands located on-site. However, given their permanency and connectivity to both the Ottawa River, it is assumed that the watercourses and wetlands provide suitable habitat for small-bodied species of fish.

Potential impacts to fish and fish habitat from the proposed project are discussed in Section 6.

4.8 Species at Risk

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

Table C.7 in Appendix C, provides a summary of all species at risk which were determined to have the potential to occur on-site or within the broader study area, their protection status under the provincial Endangered Species Act (Ontario, 2007), their 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 Section 6.

5.0 PROPOSED PROJECT

The proposed project, assessed for potential impacts on the natural heritage features determined to be present within the broader study area, includes a land severance and subsequent lot addition to an undersized lot, for the property located on Part of Lot 26, Concession 5, in the Geographic Township of Fitzroy, in the City of Ottawa, Ontario, municipally addressed as 5417 Loggers Way.

The severance application and lot addition would be for the expansion of an undersized lot at 5417 Loggers Way which has an existing size of 0.22 ha. The subject property is landlocked with legal access over the abutting lands. There are two lot additions proposed, one on each side of the subject property. The first parcel will be approximately 0.1 ha severed from an existing 48.85 ha lot at 171 Dewolfe Street, and added to the east side of the site. The second parcel will be approximately 0.07 ha severed from an existing 8.85 ha lot on Part of Lots 25, 26 and 27, Concession 5 and 6, and added to the west side of the site. Collectively, the additions would expand the existing lot to 0.55 ha. As it stands, the existing dwelling encroaches on the property to the west. These additions would correct the encroachment issue. The proposed severances as additions are illustrated on Figure A.2.

The eastern addition is associated with the retained lands to the north of the site, addressed as 171 Dewolfe Street. It is intended for the retained parcel to remain undeveloped and maintain its natural features. While no current development is proposed for the retained parcel, a conceptual development envelope of 0.2 ha has been illustrated on the retained lands to demonstrate that there is a buildable area on the retained lands.

The western addition is associated with the retained lands to the south of the site, situated adjacent to the Ottawa and Mississippi Rivers. These retained lands are heavily constrained by the 1:100 year floodplains. As such, it is unlikely that these retained lands will be able to support any future developable areas.

The act of severing and adding parcels from the adjacent properties is not expected to result in any physical alteration to the subject property. Additionally, future development is not anticipated within the lot as a residential dwelling is already existing.

It should be noted that future development on the retained parcel is not anticipated and that if future development of the retained parcel is not consistent with the description provided above and illustrated on Figure A.5, an addendum to this EIS will be required to address potential impacts to natural heritage features.

However, should future development activities occur, activities may include tree clearing and vegetation grubbing and removal, fill placement and elevation grading, laneway construction, excavation and pouring of foundations, construction of a single-family dwelling, drilling of a drinking water well, installation of septic system, and general landscaping.

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

6.0 IMPACT ASSESSMENT

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

As discussed in Section 5, no proposed development is anticipated as part of the proposed project. As such, the lot severing and additions are not expected to result in any negative impacts on the natural heritage features. However in order to provide a meaningful impact assessment, it is assumed that potential future residential development will occur on the retained lands municipally addressed as 171 Dewolfe Street. No future development is anticipated to occur within the retained lands to the south as the lot is heavily constrained by floodplains and wetlands, and as such would not be able to support future development without contravening the City of Ottawa Official Plan. As such, impacts are assessed only for potential future development of the retained lands associated with 171 Dewolfe Street.

Potential effects to the natural environment from the proposed development outlined in Section 5 include: vegetation removal, disturbance of the natural soil mantle, increased noise generation, increased human disturbance, increase storm water generation and potentially increased nutrient loading to adjacent surface water features.

6.1 City of Ottawa Natural Heritage System

Natural Heritage System Core Area, Natural Heritage Features Overlay, and Significant Wetlands have been identified on-site and are mapped as part of the Natural Heritage System, identified by the City of Ottawa Official Plan – Schedule C11 – A (2022).

With respect to development in the Natural Heritage System, the City of Ottawa OP presents the following policies;

4.8.1 *Protect the City's natural environment through identification of a Natural Heritage System, Natural Heritage Features and related policies:*

- Subsection 5) The City shall take a no net loss approach with respect to evaluated wetlands deemed not provincially significant and forest cover outside the urban area and designated villages.

5.6.4.1 *Protect the Natural Heritage System and Natural Heritage Features:*

- Subsection 1) a) In Natural Heritage System Core Areas, development or site alteration shall maintain or enhance the integrity, biodiversity and ecosystem services of the area;

and not compromise the potential for long term enhancement and restoration of the ecological integrity, biodiversity and ecosystem services of the area; and

b) In Natural Heritage System Linkage Areas, development or site alteration shall maintain or improve the ecological and recreational connectivity of the area; and, not compromise the potential for long term enhancement and restoration of ecological and recreational connectivity of the area.

- Subsection 3) The City shall protect natural heritage features for their natural character and ecosystem services.
- Subsection 5) Development and site alteration shall have no negative impact on the Natural Heritage System and Natural Heritage Features. Development and site alteration shall be consistent with the conclusions and recommendations of an approved environmental impact study.

However, Section 3.4 of The City of Ottawa EIS guidelines (Ottawa, 2023), further states that "Where a severance that would otherwise meet the policies of the Official Plan is proposed within the City's Natural Heritage System, staff will work with the applicant to minimize any negative impacts to the extent possible through such means as identifying an appropriate development envelope and applying standard mitigation measures. It is not the City's intent to prevent otherwise legal severances from occurring in these areas."

Direct impacts to the Natural Heritage System are limited to the minor loss of roadside significant woodlands. Additionally, the potential use of fencing as part of the development may create additional barriers to animal movement.

While the proposed project will required the minor removal of on-site vegetation, it is worth considering that the vegetation removal is not anticipated to have any negative impacts on the ecological integrity, biodiversity, ecosystem services, natural character, or overall function of the Natural Heritage System. As the proposed property already has a residential dwelling, impacts are limited to the area of proposed retained land development. The potential full buildout of the proposed retained land development accounts for only 0.2 ha of the entire, approximately 450 ha (less than 0.1%) of contiguous significant woodlands associated with the Natural Heritage System. Additionally, this removal will be situated fronting to Dewolfe Street, where impacts are anticipated to be less impactful when compared to more interior and sensitive habitats elsewhere on-site.

Furthermore, it is anticipated that based on the numerous constraints and natural heritage features on-site, it is unlikely that the remaining approximately 8.8 ha on the property to the south will be able to abide by the City of Ottawa Official Plan for any additional developments. As such, the remaining natural heritage features on-site will be indirectly protected from future developments.

Mitigation measures to ensure the continued function of the Natural Heritage Systems are provided in Section 7.

6.2 Provincially Significant Wetlands and Local Unevaluated Wetlands

As outlined in Section 3.5 and Section 4.2, one local unevaluated wetland and the Morris Island Wetland Complex PSW are present on-site.

Given the nature of the proposed project, and the presence of a pre-existing single-family dwelling on the subject property, impacts to wetlands are associated only with the proposed development on the retained lands.

As no in-water work is anticipated as part of the proposed development, impacts to the Morris Island Wetland Complex PSW and local wetlands are anticipated to be indirect in nature.

Potential indirect impacts to wetlands on-site are primarily associated with changes to the surface water and groundwater water balance through increased storm water runoff resulting from an increase in the impervious surface area, encroachment resulting in compaction of soils and vegetation loss. Other potential impacts include short duration construction impacts, including heavy machinery encroachment, fill placement and long-term human disturbance such as noise generation, dumping or refuse and yard waste and trampling. However, given the distance between the wetlands and developable area, as well as the dense vegetative buffer between them, impacts are anticipated to be negligible.

Mitigation measures to protect local and significant wetlands from development impacts are provided in Section 7.

6.3 Significant Woodlands

As discussed in Section 4.3, woodlands on-site and within the study area are considered significant due to their contiguous size (greater than 50 ha) and ecological functions.

The proposed land severances and lot additions on-site are not anticipated to impact significant woodlands given the existing development located on the parcel. Future development on the retained lands has the potential to result in the direct loss of significant woodland cover on-site.

The potential full buildout of the proposed retained land development accounts for only 0.2 ha of the entire, approximately 450 ha (less than 0.1%) of contiguous significant woodlands. Additionally, this removal will be situated fronting to Dewolfe Street, where impacts are anticipated to be less impactful when compared to more interior and sensitive habitats elsewhere on-site.

Despite the removal of 0.2 ha of significant woodlands from the site, the contiguous significant woodlands on-site, study area, and beyond, will continue to meet the NHRM criteria for which

their significance is based: contiguous woodlands continue to be greater than 50 ha, are proximal and provide linkages to other natural features, and source water protection.

Through the use of development envelopes, the minor loss of woodlands is not anticipated to negatively impact the function and integrity of significant woodlands.

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

6.4 Significant Valleylands – Floodplains

As discussed in Section 4.4, significant valleylands are present on-site corresponding with MVCA and City of Ottawa mapping for the 1:100 year floodplain.

The City of Ottawa and MVCA have identified floodplains to be present within the proposed severance and addition areas, as well as the area occupied by the pre-existing residential development.

In accordance with City of Ottawa and MVCA policies, no development is permitted within the 1:100 year floodplain. Figure A.4 illustrates the 1:100 and 1:350 year floodplains, demonstrating all development will occur outside of the 1:100 year floodplain.

No development is proposed to occur within the 1:100 or 1:350 year floodplains. As such, no negative impacts to significant valleylands – floodplain are anticipated as a result of the proposed development.

However, given the presence of an existing dwelling within the 1:100 year floodplain, mitigation measures to reduce impacts to floodplains, and promote health and safety are outlined in Section 7.

6.5 Significant Wildlife Habitat

The potential presence of significant wildlife habitat (SWH) on-site and within the study area was evaluated in Section 4.6. As a result of this assessment, 9 types of significant wildlife habitat were determined to be present on-site or within the study area: *candidate* turtle wintering areas, *candidate* colonially nesting bird breeding habitat (ground), *confirmed* deer yarding areas, *candidate* waterfowl nesting area, *candidate* bald eagle and osprey nesting, foraging and perching habitat, *candidate* woodland amphibian breeding habitat, *candidate* marsh breeding bird habitat, habitats for special concern and rare wildlife species (Canada warbler, eastern wood-pewee, wood thrush, eastern musk turtle, eastern ribbonsnake, northern map turtle, snapping turtle, and river redhorse), and *candidate* deer movement corridors.

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

6.5.1 *Candidate* Turtle Wintering Areas

Candidate turtle wintering areas SWH were identified on-site, corresponding with the graminoid mineral meadow marsh (ELC code MAMM1) associated with the Morris Island Complex PSW. *Candidate* SWH in the study area was identified within the open waters of the Ottawa River.

As in-water work is not anticipated as part of the proposed development, impacts to *candidate* turtle wintering area SWH are anticipated to be indirect and negligible.

Potential indirect impacts to surface water features are primarily associated with increased storm water runoff resulting from an increase in the impervious surface area and encroachment resulting in compaction of soils and vegetation loss. However, this increase is anticipated to be negligible when considering the existing residential dwelling, the proposed small footprint of the project on the retained lands, the separation between the project area and surrounding waterbodies, as well as the natural dense vegetation between them.

Other potential impacts include short duration construction impacts, include: heavy machinery encroachment, fill placement and long term human disturbance such as noise generation, dumping or refuse and yard waste and trampling. However, given the nature of the proposed development, impacts from increased human presence and disturbance are anticipated to be minimal.

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

6.5.2 *Candidate* Colonially Nesting Bird Breeding Habitat (Ground)

Candidate colonial bird nesting SWH was identified on-site, corresponding with the graminoid mineral meadow marsh (ELC code MAMM1) ecosite associated with the Morris Island Complex PSW. *Candidate* SWH in the study area was identified along the shores of the Ottawa River.

As no in-water work is proposed within suitable marsh habitat as part of the development, potential impacts to *candidate* colonial bird nesting SWH are anticipated to be negligible and indirect in nature.

Potential indirect impacts to surface water features are primarily associated with increased storm water runoff resulting from an increase in the impervious surface area and encroachment resulting in compaction of soils and vegetation loss. However, this increase is anticipated to be negligible when considering the proposed small footprint of the project, the separation between the project area and surrounding waterbodies, as well as the natural dense vegetation between them.

Other potential impacts include short duration construction impacts, include: heavy machinery encroachment, fill placement and long term human disturbance such as noise generation, dumping or refuse and yard waste and trampling. However, given the nature of the proposed development, impacts from increased human presence and disturbance are anticipated to be minimal.

Mitigation measures to reduce impacts to *candidate* colonial bird nesting SWH are provided in Section 7.

6.5.3 Deer Yarding Areas

In northern deer yards, coniferous forest cover provides protection from winds, cover from predators and, by holding snow on their branches; conifers effectively reduce snow depth on the ground (MNRF, 2014). Northern deer yards draw individual deer from the surrounding landscape, an area that may be up to 10 times as large as the deeryard itself, as such, activities which affect wintering area functions have impacts on deer abundance beyond the site level (MNRF, 2014b).

The OMNRF has mapped a Stratum I white-tailed deer wintering area, covering the entirety of the site.

As outlined in the Significant Wildlife Habitat Mitigation Support Tool (SWHMST), single lot residential development is not expected to have the same degree of impact on wintering habitat function as subdivision development (OMNRF, 2014).

The act of physically severing the land parcel from the existing parcel is not anticipated to negatively impact the *confirmed* deer yarding area SWH however, future development on the retained land has the potential to result in loss of woodland cover on-site. As tree clearing is anticipated as part of the future development, impacts to the function and quality of deer yarding area are expected to be impacted, both directly and indirectly.

As the subject property already has an established residential dwelling on it, impacts are limited to the proposed development within the retained lands. Woodlands within the proposed retained land development area accounts for 0.2 ha of upland forest. Assuming full buildout of the proposed developable space on the retained land, the loss of 0.2 ha would represent an approximate loss of less than 0.1% of woodlands on-site. The removal of the woodlands will directly result in the loss of the loss of core wintering (Stratum I) habitat, and potentially lead to increased fragmentation, and habitat encroachment. However, the potential loss of less than 0.1% of woodlands is considered negligible, as the loss is not anticipated to impact the function, or significance of the significant woodlands or the associated deer yarding area.

The location of the habitat loss directly adjacent to Mississippi Drive is not anticipated to significantly impact over-wintering deer within the broader region. This statement is based on several factors include the overall size of the deer yard habitat (extending up to 5 km from site),

the location of the land severance within the deer yard (roadside, fringe of the SWH), and the nature of the woodlands on-site, as opposed to the more significant coniferous dominated woodlands relied upon for over-wintering protection for predators and winter conditions found in the study area. Additionally, the proposed retained land development is unlikely to fragment habitat as it will take place at the edge of the existing property boundary, along Dewolfe Street, which is an existing break in the landscape.

Other potential impacts include short duration construction impacts, including heavy machinery encroachment, and fill placement. Potential impacts post-construction activities may include increased human disturbance such as noise generation, dumping of refuse and yard waste and trampling, harassment (pets at large), and increased human-wildlife interactions.

Once new residential areas are completed, some residents may be inclined to deposit food for deer during the winter months to attract them for viewing purposes or with the intention of assisting their survival. This practice often affects an animal's normal migration to a deer winter area and congregates deer in location they would normally not inhabit (MNRF, 2014b). Supplementary feeding can contribute to localised traffic hazards, damage to crops and ornamentals, and an increased potential for disease transmission (MNRF, 2014b).

Given the nature of the proposed development, overall impacts to *confirmed* deer winter congregation areas on-site are anticipated to be minimal.

Mitigation measures to protect the deer yard areas within the confines of the site are provided in Section 7.

6.5.4 *Candidate* Waterfowl Nesting Area

Candidate waterfowl nesting area SWH has been identified on-site and in the study area and is associated with all upland habitats within 120 m of meadow marsh (ELC code MAMM1), corresponding to the Morris Island Wetland Complex PSW on-site.

Potential direct impacts from the proposed project on the terrestrial component of waterfowl nesting area SWH are associated with the direct loss of approximately 0.2 ha of woodlands within the proposed retained land development area. Potential indirect impacts to the terrestrial component of waterfowl nesting SWH may include encroachment and increased human-wildlife interaction. Other potential impacts include short-duration construction impacts, including heavy machinery encroachment, fill placement, and long-term human disturbances such as noise generation and trampling. However, given the location of the proposed buildout area, impacts are anticipated to be negligible.

As no in-water work is anticipated as part of the proposed development, impacts to the aquatic component of waterfowl nesting area SWH are anticipated to be indirect and negligible. Potential indirect impacts to surface water features are primarily associated with increased storm water

runoff resulting from an increase in the impervious surface area and encroachment resulting in compaction of soils and vegetation loss. However, this increase is anticipated to be negligible when considering the proposed small footprint of the project, and the natural dense vegetation between the project area and surrounding waterbodies.

Mitigation measures to protect *candidate* waterfowl nesting areas within the on-site PSW are provided in Section 7.

6.5.5 *Candidate* Bald Eagle and Osprey Nesting, Foraging and Perching Habitat

Candidate bald eagle and osprey nesting, foraging, and perching habitat can be found on-site and within the study area where the woodlands are adjacent to the Ottawa and Mississippi Rivers.

Given the existing development on the proposed expansion lot, the proposed project on-site is not anticipated to impact bald eagle and osprey nesting, foraging, and perching habitat on-site. Direct impacts to *candidate* bald eagle and osprey nesting, foraging, and perching habitat are primarily associated with loss of candidate roosting trees on the retained lands. Future development on the retained lands has the potential to result in the loss of woodlands and candidate nesting trees. Indirect potential impacts include increased human presence, increased human and wildlife interaction and disturbances, and increased noise levels.

Mitigation measures to protect *candidate* bald eagle and osprey nesting, foraging, and perching habitat are provided in Section 7.

6.5.6 *Candidate* Woodland Amphibian Breeding Habitat

Candidate woodland amphibian breeding habitat can be found within the upland forested communities (ELC codes FODM5-4) adjacent to wetlands, as well as the swamp community (SWMM1-1). Based on the description provided in the Significant Wildlife Habitat Criteria Schedules (OMNRF, 2015), woodland amphibian habitat is considered to be the wetland, plus a 230 m radius of surrounding woodland area. *Candidate* woodland amphibian breeding habitat is illustrated on Figure A.4 in Appendix A.

As no in-water work is proposed as part of the development, potential impacts to *candidate* woodland amphibian breeding SWH are anticipated to be associated with direct impacts to woodland habitat and indirect impacts to wetland habitat, limited to areas adjacent to the proposed development on the retained lands. Given the existing development on the proposed expansion lot, the proposed project on-site is not anticipated to impact *candidate* woodland amphibian breeding habitat on-site.

Direct impacts to woodland amphibian breeding SWH is primarily associated with the minor loss of approximately 0.2 ha of woodland cover and vegetation as a result of the proposed development. Indirect impacts to wetland habitat may include alterations to water quality due to nutrient and sediment loading as well as alterations to the hydrologic regime from increases in

impermeable surfaces and increases in storm water runoff. However, alterations to water quantity and quality are anticipated to be negligible when considering the proposed small footprint of the project, and the natural dense vegetation between the project area and surrounding waterbodies.

Other potential impacts include short-duration construction impacts, including: heavy machinery encroachment, fill placement, and long-term human disturbances such as noise generation, dumping of refuse and yard waste and trampling.

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

6.5.7 *Candidate* Marsh Breeding Bird Habitat

Candidate marsh breeding bird habitat was identified on-site and study area within the graminoid mineral meadow marsh ecosite (ELC code MAMM1), correlating to the on-site Morris Island Wetland Complex PSW.

As no in-water work is proposed within suitable marsh breeding bird habitat as part of the development, potential impacts to *candidate* marsh breeding bird habitat is anticipated to be indirect in nature, limited to areas adjacent to the proposed development on the retained lands. Given the existing development on the proposed expansion lot, the proposed project on-site is not anticipated to impact *candidate* marsh breeding bird habitat on-site.

Indirect impacts are primarily associated with changes to the surface water and groundwater water balance through increased stormwater runoff resulting from an increase in the impervious surface area and encroachment resulting in compaction of soils and vegetation loss. However, alterations to water quantity and quality are anticipated to be negligible when considering the proposed small footprint of the project, and the natural dense vegetation between the project area and surrounding waterbodies.

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

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

6.5.8 *Candidate* Special Concern and Rare Wildlife Species: Canada Warbler, Eastern Wood-Pewee, and Wood Thrush

A total of three woodland avian SAR and their habitats were identified as having a potential to occur on-site or within the study area; Canada warbler, eastern wood-pewee, and wood thrush. Canada Warbler (*Cardellina canadensis*) is a small, colourful songbird that prefers wet, mixed forests with well-developed shrub layers for breeding. Eastern wood-pewee (*Contupus virens*) is

a small, avian insectivore that lives in a variety of deciduous, mixed and to a lesser extent, coniferous woodland habitat (COSEWIC, 2012c). Wood thrush (*Hylocichla mustelina*) is a medium-sized songbird, that prefers second growth, and mature deciduous and mixed forests, with saplings and well-developed understory layers, but may also nest in small forest fragments.

All three avian SAR are listed as a species of special concern in Ontario. The NHIC database indicates all three species to be present within 1 km of site, however, only the eastern wood-pewee was identified during the site investigation.

Impacts to avian SAR and their habitat from the proposed development is limited to the wooded area on-site, which may provide nesting and foraging habitat. Impacts to avian SAR habitat may include a minor loss of woodland habitat, and increased human presence. These impacts are limited to areas adjacent to the proposed development on the retained lands. Given the existing development on the proposed expansion lot, the proposed project on-site is not anticipated to impact avian SAR habitat on-site.

The proposed development is anticipated to result in the loss of potentially suitable woodland habitat, however, suitable habitat is readily available within forests in the general area to support avian SAR species. The current development plan for the retained lands indicate the approximate removal of 0.2 ha of woodlands on-site (less than 0.1% of total woodlands on-site), most of which will consist of roadside vegetation. When considering the abundance of woodlands available within the immediate vicinity of the site (greater than 50 ha), this reduction in woodlands is not expected to negatively impact availability of function of avian SAR habitat. As such, impacts to avian SAR are anticipated to be minimal.

Impacts from increased human presence are anticipated to be negligible given the existing residential developments along Dewolfe road and availability of suitable habitat within the greater study area.

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

6.5.9 *Candidate* Special Concern and Rare Wildlife Species: Eastern Musk Turtle, Northern Map Turtle, and Snapping Turtle

A total of three turtle SAR and their habitats were identified as having a potential to occur on-site or within the study area; eastern musk turtle, northern map turtle, and snapping turtle. The eastern musk turtle (*Sternotherus odoratus*), also known as the Stinkpot, is a small freshwater turtle that are found in a variety of waterbodies that are generally slow-moving, with abundant emergent vegetation and muddy bottoms that they burrow into for winter hibernation. The Northern map turtle (*Graptemys geographica*) is a medium sized freshwater turtle that inhabits rivers and lakes where it basks on rocks, logs, and banks. Snapping turtle (*Chelydra serpentina*) is the largest freshwater turtle found in Canada, and are aquatic generalists, found in a variety of wetlands, water bodies and watercourses.

All three turtle SAR are listed as a species of special concern in Ontario. The NHIC database indicates all three species to be present within 1 km of site. None of these SAR turtles were observed during the field investigation.

As no in-water work is proposed as part of the future development, potential impacts to *candidate* turtle SAR and their habitats are anticipated to be indirect in nature. These impacts are limited to wetlands adjacent to the proposed development on the retained lands. Given the existing development on the proposed expansion lot, the proposed project on-site is not anticipated to impact turtle SAR habitat on-site.

Indirect impacts to turtle SAR may include alterations to water quality due to nutrient and sediment loading and alterations to the hydrologic regime due to slight increases in impermeable surfaces and stormwater runoff, as well as encroachment resulting in compaction of soils and vegetation loss. Additional indirect impacts may also include increased human-wildlife interaction associated with migrating turtles, particularly during nesting season, when turtles move between winter and summer habitats.

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

However, given the nature of the proposed development, a single-family dwelling in a rural area, dense vegetated buffers between the proposed development area and suitable habitats, as well as abundance of available habitat, impacts from the proposed development are anticipated to be negligible.

Mitigation measures to protect turtle SAR and their habitat from the proposed development are presented in Section 7.

6.5.10 *Candidate* Special Concern and Rare Wildlife Species: Eastern Ribbonsnake

Eastern ribbonsnake (*Thamnophis sauritus*) is a long and narrow snake. As a semi-aquatic species, eastern ribbonsnake are typically found in habitats close to water such as wetlands and shorelines of lakes and rivers (Ontario Nature, 2020). In Ontario, the eastern ribbonsnake is listed as species of special concern.

NHIC database indicates species within 1 km of site. Eastern ribbonsnake was not observed during the site investigation.

Given the existing development on the proposed expansion lot, the land severances and additions are not anticipated to impact eastern ribbonsnake habitat on-site. Any future development on the retained lands has the potential to result in direct impacts to eastern ribbonsnake and their habitat.

Impacts to eastern ribbonsnake and their habitat on-site from future development may include loss of potentially suitable upland forest habitat and rock structures which may provide potentially suitable overwintering habitat. As no in-water work is proposed as part of future development, indirect impacts to adjacent aquatic and semi-aquatic habitat may include alterations to water quality due to nutrient and sediment loading.

Potential impacts to *candidate* eastern ribbonsnake SWH are anticipated to be primarily associated with seasonal migration and dispersion from breeding hibernacula to wetland and forested foraging habitats. Impacts to migrating reptiles due to future development may include a loss of forest habitat, increased fragmentation, encroachment and increased human-wildlife interactions.

Indirect impacts to wetland foraging habitats may include alterations to water quality due to nutrient and sediment loading as well as alterations to the hydrologic regime due increases in impermeable surfaces and increases in storm water runoff.

Other potential impacts include short duration construction impacts, including: heavy machinery encroachment, fill placement, and long-term human disturbance such as noise generation, dumping of refuse and trampling.

However, given the nature of the proposed development, a single-family dwelling in a rural area, dense vegetated buffers between the proposed development area and suitable habitats, as well as abundance of available habitat, impacts from the proposed development are anticipated to be negligible.

Mitigation measures to protect eastern ribbonsnake and their habitat on-site are discussed in Section 7.

6.5.11 Special Concern and Rare Wildlife Species: River Redhorse

The river redhorse is a large, thick-bodied sucker that redhorse inhabits medium to large-size rivers that have substantial flows. In Ontario, river redhorse is listed as a species of special concern.

River redhorse was not observed on-site during the field investigation but occurrence data from DFO SAR Map indicates the species has occurred within 1 km of the property, limited to within the Ottawa River and Mississippi River. Watercourses and other aquatic features on-site are not anticipated to support suitable river redhorse habitat as the features lack sufficient depths, flows and substrates.

As no in-water work is anticipated, direct impacts to river redhorse and their habitat are not anticipated. However, considering the scope of the project, impacts are anticipated to be minimal, mostly indirect and temporary in nature.

Indirect impacts to redhorse may include alterations to water quality due to nutrient and sediment loading and alterations to the hydrologic regime due to slight increases in impermeable surfaces and stormwater runoff, as well as encroachment resulting in compaction of soils and vegetation loss.

However, given the nature of the proposed development, a single-family dwelling, in a rural area, as well as abundance of available habitat, impacts from the proposed development are anticipated to be minimal.

Mitigation measures intended to prevent negative impacts to river redhorse are presented in Section 7.

6.5.12 Deer Movement Corridors

As discussed in Section 4.6.5.1, *candidate* deer movement corridors were identified on-site within the mixed and deciduous forests on-site (ELC code FODM5-4). Movement corridors are determined when deer wintering areas are *confirmed*, and they typically follow riparian areas, woodlots, and ravines.

Potential impacts to *candidate* cervid movement corridor SWH are anticipated to be both direct and indirect, yet minimal in nature.

Potential direct impacts from the proposed development on deer movement corridor may include direct loss of suitable habitat resulting from vegetation clearing and physical barriers to passage presented by future development.

Future development on the retained land has the potential to result in loss of *candidate* SWH on-site. This potential loss is directly associated with loss of significant woodlands identified on-site. As previously mentioned in Section 6.3 for significant woodlands and Section 6.5.3 for deer yarding SWH, the proposed development has the potential to result in a maximal loss of 0.2 ha of fringe roadside woodlands.

However, this minor loss is not anticipated to negatively impact *candidate* cervid movement corridor when considering the low impact development of the project, the minimal amount of roadside vegetation loss, and that more suitable and undisturbed woodlands are located north of the site which may provide more suitable coverage and corridor passages.

Potential indirect impacts from the proposed development on deer movement corridor may include increased human presence, harassment (pets at large), encroachment, and increased human-wildlife interactions. Other potential impacts include short duration construction impacts, including heavy machinery encroachment, fill placement, and long-term human disturbance such as noise generation, dumping or refuse and yard waste and trampling.

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

Overall impacts are even further reduced when considering that the remainder of the site is heavily constrained with other natural heritage features, and is unlikely to support additional developments in the future.

Mitigation measures to protect cervid movement corridors are provided in Section 7.

6.6 Fish Habitat

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

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

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

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

Potential indirect impacts to surface water features resulting from construction activities and from increased runoff following construction may include alterations to water quality, increased storm water runoff, overland flow and concomitant sediment transport caused by an increase in impervious surface area and vegetation loss, as well as increased nutrient loading through both overland and subsurface pathways, and landscaping practices. However, impacts are anticipated to be negligible when considering the scope of the project and abundance of habitat available.

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

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

6.7 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 4.8, are discussed on a species-by-species basis in subsections below.

6.7.1 Least Bittern

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

Formal Marsh Breeding Bird Surveys were out of the scope of this EIS. However, through the desktop review, eBird (2023) has identified observation records for least bittern within 1 km of the site. The Morris Island Wetland Complex PSW located on-site may provide suitable habitat for least bittern. This species was not observed during the field investigation.

Given the availability of suitable habitat on-site and within the surrounding study area, there is a potential for least bittern to occur on the property. However, based on the proposed project plan, no development is to occur within the area of suitable least bittern habitat, identified within the mineral meadow marsh (ELC code MAMM1).

As such, negative impacts to least bittern are anticipated to be indirect in nature and primarily involves impacts to water quality from run-off and sediment transport. Direct impacts may include encroachment and increased human-wildlife interactions. However, given the nature of the project and separation of at least 200 m between the proposed severance and nearest point of the marsh habitat, impacts are anticipated to be negligible.

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

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

6.7.2 Eastern Small-footed Myotis

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

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

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

Although the forest habitat was not confirmed to support bat maternity colonies, given the availability of habitat and buildings on-site and within the study area, there is a potential for eastern small-footed Myotis to occur on the property, primarily for foraging or roosting. Impacts to eastern small-footed Myotis are anticipated to be minimal and could be associated with habitat loss, encroachment and increased wildlife-human interaction.

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

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

6.7.3 Little Brown Myotis

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

In Canada, little brown Myotis' occur throughout all the provinces and territories (except Nunavut), with its range extending south through most 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, 2013).

Although the forest habitat was not confirmed to support bat maternity colonies, given the availability of habitat and buildings on-site and within the study area, there is a potential for little brown myotis to occur on the property, primarily for foraging or roosting. Impacts to eastern small-footed Myotis are anticipated to be minimal and could be associated with habitat loss, encroachment and increased wildlife-human interaction.

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

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

6.7.4 Tri-Colored Bat

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

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

Tri-colored bats 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 bats utilize trees, rock crevices and buildings for maternity colonies. Foraging is mainly done over watercourses and riparian vegetation (COSEWIC, 2013).

Although the forest habitat was not confirmed to support bat maternity colonies, given the availability of habitat and buildings on-site and within the study area, there is a potential for tri-colored bat to occur on the property, primarily for foraging or roosting. Impacts to tri-colored bat are anticipated to be minimal and could be associated with habitat loss, encroachment and increased wildlife-human interaction.

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

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

6.7.5 Blanding's Turtle

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

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

While targeted basking turtle surveys were not completed in support of this EIS, the site is located within a greater area of known Blanding's turtle occurrences. During the field investigation, Blanding's turtles were not detected on-site.

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

As regulated Blanding's turtle habitat extends up to 2 km from on observation, based conservatively on the NHIC observation data, all wetlands and watercourses on-site are assumed to provide Category 2 and 3 habitat. As discussed in Section 4.6.1.1, the mineral marsh and associated watercourses within the PSW on-site, as well as the Ottawa River and Mississippi River in the study area, have the potential to provide suitable conditions for overwintering habitat, however no Category 1 habitat has been confirmed for the site.

No in-water work is anticipated as part of the proposed development, therefore impacts to Blanding's turtle are anticipated to be associated with indirect wetland impacts and impacts to Category 2 and Category 3 habitat. Additionally, any potential impacts are limited to areas proximal to the proposed development on the retained lands. Given the existing development on the proposed expansion lot, the proposed project on-site is not anticipated to impact Blanding's turtle habitat on-site.

As no in-water work will occur within the watercourses, PSW, or local wetlands on-site, potential indirect impacts to wetlands on-site are primarily associated with changes to the surface water

and groundwater water balance through increased storm water runoff resulting from an increase in the impervious surface area and encroachment resulting in compaction of soils and vegetation loss. However, this increase is anticipated to be negligible when considering the proposed small footprint of the project, the separation between the project area and surrounding waterbodies, as well as the natural dense vegetation between them.

Indirect impacts to water quality may include increased overland flow and concomitant sediment transport caused by an increase in impervious surface area, as well as increased nutrient loading through both overland and subsurface pathways resulting from landscaping practices. Other potential impacts include short duration construction impacts, including: heavy machinery encroachment, fill placement and long term human disturbance such as noise generation, dumping or refuse and yard waste and trampling and increased road mortality, particularly during nesting season, when turtles are more transient.

Potential direct impacts to Blanding's turtles are anticipated to be associated with a loss of Category 2 and Category 3 habitat and increased interactions with transient Blanding's turtles, limited to the area within the retained lands. The proposed development on the retained lands has the potential to impact 0.2 ha of Category 2 habitat and 0.2 ha of Category 3 habitat. Development within Category 3 habitat will include a direct loss of vegetation cover within these areas.

In consideration of the proposed project, and considering that the majority of Category 3 habitat on-site will be maintained, the proposed development is not anticipated to impede overland movements of Blanding's turtle or the function of the remaining Category 3 habitat on-site and offsite. As such, negative impacts to regulated Blanding's turtle habitat are not anticipated. Potential impacts to individual Blanding's turtle are anticipated to be minimal and are limited to increased interactions with transient Blanding's turtles, particularly during migratory periods. Migration and dispersal take place after the start of the active season, following ice-off, and in September when turtles return to their overwintering habitat. Nesting typically takes place between late May to early July.

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

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

6.7.6 American Eel

American eel (*Anguilla rostrata*) is an elongated, cylindrical fish and is the only freshwater eel in North America (COSEWIC, 2012a). The mouth is filled with little teeth, the lower jaw extends past the upper jaw, and a single gill opening is located just before the pectoral fin. The American eel

grows to a maximum size of 1 m and lacks any pelvic fins. The long dorsal and anal fins are continuous with the tail fin. Immature eels range in colour from yellow to green to olive brown. Eels reaching maturity are silvery and sexually mature eels have a metallic brown of black back (COSEWIC, 2012a).

The American eel uses both freshwater and marine habitats throughout its life. Sexually mature eels migrate from freshwater habitats to marine habitats, spawning occurs in the Sargasso Sea, south of Bermuda. Young larval stages remain in salt water until they undergo metamorphosis, after which juveniles begin migrations to freshwater habitats where they remain until reaching sexual maturity (COSEWIC, 2012a). American eels are widespread in Eastern Canada, and preferred habitat in the freshwaters of Canada includes lakes, rivers, and all waters extending from the high-water mark down to at least 10 m depth. Growing eels frequently use a variety of substrate (rock, sand, mud), woody debris, and submerged vegetation to provide protection and cover, particularly during daylight hours. In freshwater environments, the generation time for American Eels can be as high as 22 years (COSEWIC, 2012a).

A targeted fisheries assessment was not completed as part of this EIS. However, occurrence data from the NHIC indicates that American eel have been observed within 1 km of the site, limited to the Ottawa River and parts of the Mississippi River. American eel habitat within the study area is limited to the Mississippi River, which flows into the Ottawa River south of Pickerel Bay, and not the watercourse on-site.

Given the existing development on the proposed expansion lot, the proposed land severances and additions are not anticipated to impact American eel or their habitat on-site. Any potential impacts on American eel and their habitat would be associated with the future development on the retained lands.

As no in-water work is proposed as part of the development plan, impacts to American eel are anticipated to be indirect in nature, and may include increased nutrient and sediment loading and alterations to the hydrologic regime due to increases in stormwater runoff resulting from an increase in the impervious surface area. However, given the nature of the development, the distance between suitable habitats and the retained land, and the dense vegetative buffer between them, overall impacts to American eel and their habitat are not anticipated as a result of the proposed project.

As such, mitigation measures to protect American eel and its habitat are not required and are no longer discussed in this report.

6.7.7 Lake Sturgeon

The Lake Sturgeon (*Acipenser fulvescens*) is one of five sturgeon species found in Canada, and it is one of Canada's largest freshwater fishes. It has a pointed snout, ventral protrusible mouth, four barbels in front of the mouth, five rows of bony scutes, and a heterocercal tail (COSEWIC,

2017). The Canadian range stretches from the North and South Saskatchewan rivers in Alberta in the west, to the St. Lawrence River estuary in the east, and from various rivers that empty into Hudson Bay in the north to several boundary waters in the south (COSEWIC, 2017).

Lake Sturgeon requires a variety of habitats to complete its lifecycle, and the species has evolved to use typical upstream to downstream hydraulic and substrate gradients. Spawning habitat is typically characterized by fast-moving water found at the base of falls, rapids, or dams (COSEWIC, 2017). Hatching is contingent on aeration by flowing water, after which larvae require gravel substrate to bury and remain in while development continues. Aside from the requirement of adequate benthic prey items, the habitat requirements for juveniles and adults are not particularly restricted (COSEWIC, 2017).

A fisheries assessment was not completed as part of this EIS. Occurrence data from the NHIC indicates that lake sturgeon have been observed within 1 km of the site. Lake sturgeon habitat within the study area is limited to the Ottawa River and Mississippi River, and not the watercourses on-site.

Given the existing development on the proposed expansion lot, the proposed land severances and additions are not anticipated to impact lake sturgeon or their habitat on-site. Any potential impacts on lake sturgeon and their habitat would be associated with the future development on the retained lands.

As no in-water work is proposed as part of the development plan, impacts to lake sturgeon are anticipated to be indirect in nature, and may include increased nutrient and sediment loading and alterations to the hydrologic regime due to increases in stormwater runoff resulting from an increase in the impervious surface area. However, given the nature of the development, the distance between suitable habitats and the retained land, and the dense vegetative buffer between them, overall impacts to lake sturgeon and their habitat are not anticipated as a result of the proposed project.

As such, mitigation measures to protect lake sturgeon and its habitat are not required and are no longer discussed in this report.

6.7.8 Hickorynut

Hickorynut (*Obovaria olivaria*) is a medium-sized freshwater mussel that is typically less than 7.5 cm long (COSEWIC, 2011). It is primarily distinguished from other mussels due to its small, nearly oval shell, and unique hinge features on the shell (COSEWIC, 2011). It has a small, nearly oval hinged shell, ranging from green to yellowish brown, and becoming dark brown in old individuals. Thin greenish rays are often present in young mussels (Ontario, 2021).

The Hickorynut is found within the Great Lakes – St. Lawrence basin and the Mississippi River basin. In Canada, the hickorynut is found in sporadic locations within the Great Lakes and St.

Lawrence basin, from Lake Huron to Quebec City. In Ontario, it is found in the Mississagi River and the Ottawa River (Ontario, 2021a).

Hickorynut lives in medium to large sized rivers with sandy substrates in relatively deep water (generally depths exceeding 2-3 m), with a moderate to strong current (COSEWIC, 2011). Mussels filter water to find food, such as bacteria and algae. Mussel larvae must attach to a fish, called a host, where they consume nutrients from the fish body until they transform into juvenile mussels and then drop off. In Canada, the fish host of the hickorynut is the lake sturgeon. Presence of the fish host is one of the key features determining whether a body of water can support a healthy hickorynut population (Ontario, 2021a).

Many of the large-river habitats of the Hickorynut have been damaged by Zebra Mussel infestations, dams, or pollution caused by some industrial and agricultural activities (Ontario, 2021a).

A fisheries assessment was not completed as part of this EIS. Occurrence data from the DFO SAR Map indicates that hickorynut have been observed within 1 km of site, limited to within the Ottawa River. Hickorynut habitat within the study area is limited to the Ottawa River, and not the watercourses on-site.

Given the existing development on the proposed expansion lot, the proposed land severances and additions are not anticipated to impact hickorynut or their habitat on-site. Any potential impacts on hickorynut and their habitat would be associated with the future development on the retained lands.

As no in-water work is proposed as part of the development plan, impacts to hickorynut are anticipated to be indirect in nature, and may include increased nutrient and sediment loading and alterations to the hydrologic regime due to increases in stormwater runoff resulting from an increase in the impervious surface area. However, given the nature of the development, the distance between suitable habitats and the retained land, and the dense vegetative buffer between them, overall impacts to hickorynut and their habitat are not anticipated as a result of the proposed project.

As such, mitigation measures to protect hickorynut and its habitat are not required and are no longer discussed in this report.

6.7.9 Restricted Species

The NHIC database indicates presence of 'Restricted Species' encompassing the site and surrounding area. 'Restricted' represents an endangered species, but does not confirm which species. Based on observations of available habitats on-site, as well as general understanding of species requirements, the following Restricted Species have potential to occur on-site: spotted turtle and wood turtle (both reptilian SAR), and American ginseng (plant SAR).

Spotted turtles are generally secretive wetland species, is semi-aquatic and prefers wetlands with slow-moving water. Wood turtles are associated with clear, gravelly streams, but are primarily terrestrial forest species. American ginseng prefers rich, moist, relatively mature deciduous forests.

None of the Restricted Species were observed during field investigation.

Avoidance and mitigation measures intended to prevent harm to potential Restricted Species which have the potential to occur within the study area are presented in Section 7.

6.8 Cumulative Impacts

Given the existing development, the proposed land severance application is not anticipated to result in any cumulate impacts to the surrounding natural environment.

Potential cumulative impacts associated with the potential development on the retained lands include encroachment, increased disturbance, and increased human-wildlife interactions. Cumulative impacts of the future development of a single-family dwelling on the severed lot may include a minor increase in storm water generation, potential increase in nutrient loading to aquatic features, and the minor loss of roadside forest habitat.

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

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

7.0 RECOMMENDED AVOIDANCE AND MITIGATION MEASURES

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

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

Vegetated buffers, particularly buffers that are vegetated with a mix of grassy herbaceous vegetation and shrubby or woody vegetation are most effective in mitigating impacts associated with anthropogenic activities in adjacent lands (Beacon, 2012). Buffers recommended in the following subsections and illustrated on Figure A.5, are done so within the context of the existing environmental disturbances but also to promote reasonable natural rehabilitation.

7.1 City of Ottawa Natural Heritage System

The mitigation measures as prescribed below for the protection of the significant woodlands is sufficient to protect the integrity, form and function of the Natural Heritage System on-site and within the study area.

As previously mentioned in Section 6.1, Section 3.4 of The City of Ottawa EIS guidelines (Ottawa, 2023), further states that “Where a severance that would otherwise meet the policies of the Official Plan is proposed within the City’s Natural Heritage System, staff will work with the applicant to minimize any negative impacts to the extent possible through such means as identifying an appropriate development envelope and applying standard mitigation measures. It is not the City’s intent to prevent otherwise legal severances from occurring in these areas.”

7.2 Provincially Significant Wetlands and Local Unevaluated Wetlands

No negative impacts on the integrity of the significant and local wetlands are anticipated due to the proposed land severance if all mitigation measures recommended below are enacted, and best management practices are followed. The Morris Island Wetland Complex on-site can be protected against potential impacts of the proposed severance through the implementation of a construction setback.

Beacon Environmental Review of Ecological Buffers (2012) provides a range for buffer widths to protect various natural heritage features based on the current science. The buffers are presented in a way that determines the risk of not achieving the desired buffer function (i.e., high, moderate, and low). The functions analysed include water quantity, water quality, screening or human

disturbance/changes in land use, hazard mitigation zone, and core habitat protection. Wetland buffer widths have a moderate risk of not providing adequate mitigation for water quality impacts at widths between 11 m and 50 m. Wetland buffer widths have a moderate risk of not providing adequate mitigation for human disturbance/land use change impacts at widths between 11 m and 30 m and low risk at widths of 31 m to 50 m. Wetland buffer widths have a moderate risk of not providing adequate mitigation for core habitat protection at widths between 21 m and 60 m.

Impacts to the local wetlands and PSW on and off-site were identified to include potential impacts to water quality, human disturbance, and core habitat protection (*candidate* turtle overwintering areas, *candidate* colonial bird nesting SWH, *candidate* waterfowl nesting SWH, *candidate* amphibian breeding habitat, *candidate* marsh breeding bird habitat, and for species at risk including eastern musk turtle, northern map turtle, snapping turtle, Blanding's turtle, and least bittern).

In consideration of the Morris Island Wetland Complex PSW, a minimum 50 m setback from the evaluated wetland edge is recommended. The recommended 50 m setback falls into the low risk of not achieving the desired buffer function for mitigating water quality impacts and human disturbance. As such, a 50 m setback is sufficient to protect core habitat within the PSW. Setbacks are illustrated on Figure A.5 in Appendix A.

In consideration of local unevaluated wetlands on-site, a minimum 30 m setback from the unevaluated wetland edge is recommended. The recommended 30 m setback falls into the moderate risk of not achieving the desired buffer function for mitigating water quality impacts and human disturbance. As such, a 30 m setback is sufficient to protect core habitat within the unevaluated local wetlands on-site. Setbacks are illustrated on Figure A.5 in Appendix A.

Where the 50 m and 30 m setbacks overlap, the greater of the two should be used.

No negative impacts on the ecological function of the local wetlands and PSW are anticipated because of this project if the proposed setbacks, mitigation measures, and best management practices recommended below are adhered to.

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

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

- Silt fencing should be installed along all setbacks to provide visual demarcation of the setbacks to prevent machinery encroachment and sediment transport.
- When native soil is exposed, sediment and erosion control work in the form of heavy-duty sediment fencing shall be positioned along the down gradient edge of any construction envelopes adjacent to waterbodies.
- To protect fish habitat from contamination, it is recommended that all machinery be maintained in good working condition and that all machinery be fueled a minimum of 30 m from the high-water mark.
- Any temporary storage of aggregate material shall be set back from the water's edge by no less than 30 m and be contained by heavy-duty silt fencing.
- Septic systems shall be installed no closer than 30 m from the high-water mark of any surface water feature and not located in areas of exposed bedrock.

7.3 Significant Woodlands

Future development on the retained lands has the potential to result in the loss of 0.2 ha of significant woodlands present on-site. To avoid development within significant woodlands where possible, and ensure that only the area required to accommodate a single-family dwelling, septic field, drinking water well and garage is cleared, site control, by way of prescribed development envelopes is recommended.

Figure A.5 in Appendix A illustrates the proposed development envelope and the extents of the significant woodlands. The development envelope has been positioned such that it minimizes tree clearing to the maximum extent possible and that it is preferentially located near the front of the lot to reduce impacts on the integrity of the significant woodlands by developing as close to Mississippi Drive as possible.

Through the use of the proposed development envelope, the maximum loss of woodland habitat on-site is 0.2 ha. Furthermore, siting of the development envelope abutting to Mississippi Drive ensures that the size and ecological functions of the woodlands are not negatively impacted; the on-site woodlands in conjunction with contiguous off-site woodlands continue to meet the NHIC criteria for significance (size, proximity, water protection). The potential minor loss of roadside habitat is not anticipated to negatively impact the function of the remaining contiguous woodlands.

No negative impacts on the integrity, form or function of the significant woodlands are anticipated as a result of this project if the development envelope proposed above is implemented and all mitigation measures and best management practices recommended in Section 7 below are adhered to.

7.4 Significant Valleylands – Floodplains

All development is proposed to occur outside of the 1:100 year as well as the 1:350 year flood plains. Figure A.5 illustrates that all development, including the proposed development envelope within the retained lands, occurs outside of the flood plain.

General mitigation measures recommended for the protection of health and safety against potential flood events include:

- Install a sump pump with a battery backup, and a backwater valve as recommended by local authorities.
- Test sump pumps regularly and install a back-up power system (for example, battery back-up or generator).
- Put weather protection sealant around basement windows and ground-level doors.
- Use water-resistant building materials below ground level.
- Install check valves in sewer traps to prevent floodwater from backing up into the drains of the dwelling.
- Extend downspouts at least 2 m from the dwelling to move water away from the building.
- Ensure proper lot grading. If possible, build up the ground around the dwelling so that water will drain away from basement walls.
- Landscape with plants that resist soil erosion.
- Clean and maintain downspouts and eavestroughs at least once a year.
- Remove debris that could present danger during flood events.
- Regularly maintain water drainage systems, such as weeping tile, culverts and ditches.
- It is recommended that the client consult with the City of Ottawa and Mississippi Valley Conservation Authority for further information.

7.5 Significant Wildlife Habitat

7.5.1 *Candidate* Turtle Wintering Area, Colonial Bird Nesting Habitat, Waterfowl Nesting Area, and Marsh Breeding Bird Habitat

The 30 m and 50 m setbacks as prescribed for the local unevaluated wetlands and the Morris Island Wetland Complex PSW, respectively, are sufficient to protect *candidate* turtle wintering area, *candidate* colonial bird nesting habitat, *candidate* waterfowl nesting area, and *candidate* marsh breeding bird habitat on-site from negative impacts.

7.5.2 *Candidate* Woodland Amphibian Breeding Habitat

The 30 m and 50 m setbacks for the on-site local unevaluated wetlands and the PSW, as well as the proposed development envelope are sufficient to protect *candidate* woodland amphibian breeding habitat on-site from negative impacts associated with the proposed severance.

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

7.5.3 Deer Yarding Areas and Deer movement corridors

The development envelope provided for the protection of significant woodlands is sufficient to protect deer yarding and deer movement corridor habitats on-site and within the study area.

To minimize potential impacts to deer yarding areas, it is recommended that the single-family dwelling be located as close to the road front as possible to minimize the woodlands lost, and to maintain connectivity between habitats.

Further, it is recommended that a prohibition be placed on fencing as to not limit deer movement within the area. Animals trapped within fenced lots increase the chances of vehicle accidents as they resort to human-use corridors. Future residents should be educated on the importance of maintaining woodland cover, as well as the importance of not feeding local deer populations.

7.5.4 *Candidate* Bald Eagle and Osprey Nesting, Foraging and Perching Habitat, Canada Warbler, Eastern Wood-Pewee, and Wood Thrush

Impacts c*andidate* bald eagle and osprey nesting, foraging and perching habitat, Canada warbler, eastern wood-pewee, and wood thrush primarily concern habitat loss and increased fragmentation. The development envelope as prescribed above to protect significant woodlands on-site is sufficient to protect special concern and rare wildlife habitat from large amounts of habitat loss and fragmentation.

To further minimize the impact of the proposed development on c*andidate* bald eagle and osprey nesting, foraging and perching habitat, Canada warbler, eastern wood-pewee, and wood thrush habitat, vegetation removal should occur outside the key breeding bird period (typically March 31 to August 31) as identified by Environment Canada for the protection of nesting and foraging Canada warbler, eastern wood-pewee and wood thrush and to avoid contravention of the Migratory Bird Convention Act.

If vegetation clearing activities must take place during the aforementioned timing window than a nest survey shall be conducted by a qualified professional. Trees with active nests are not permitted to be removed until the nest is empty.

7.5.5 Eastern Musk Turtle, Eastern Ribbonsnake, Northern Map Turtle, and Snapping Turtle

The 30 m and 50 m setbacks for the on-site watercourse, local wetlands and PSW respectively, is sufficient to protect special concern and rare wildlife habitat (eastern musk turtle, eastern ribbonsnake, northern map turtle and snapping turtle). Furthermore, the development envelope

ensures that forest cover and surrounding summer habitat is maintained, which is important for wetland amphibians and reptiles moving between habitats throughout the year.

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

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

7.5.6 River Redhorse

A 30 m setback from the Ottawa River is sufficient to protect special concern and rare wildlife habitat (river redhorse). Additionally, general mitigation measures for the protection of fish habitat, as prescribed below, provides additional habitat protections.

7.6 Fish Habitat

The 30 m and 50 m setbacks as prescribed for the local unevaluated wetlands and the PSW, respectively, as well as a 30 m setback from the Ottawa River and on-site watercourse, are sufficient to protect fish habitat on and off-site.

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

- Buffers should be comprised of a mixture of native, self-sustaining trees, shrubs, and tall grasses.
- All future development and construction activities within the study area, including ditching, culvert installation, erosion and sediment control and storm water management should be completed in accordance with Ontario Provincial Standard Specification 182 and OPSS 805.
- Silt fencing should be installed along all setbacks to provide visual demarcation of the setbacks to prevent machinery encroachment and sediment transport.
- Install and maintain effective sediment and erosion control measures before starting work.
- Schedule work to avoid wet, windy, and rainy periods.
- When native soil is exposed, sediment and erosion control work in the form of heavy-duty sediment fencing shall be positioned along the down gradient edge of any construction areas adjacent to waterbodies.

- The development plan should include lot-side swales and/or roadside ditches designed to promote infiltration.
- Downspouts should be directed towards lot-side swales that are in turn directed to roadside ditches and not adjacent surface water features. Rain gardens, soak-away pits or infiltration trenches should be utilized in areas of difficult topography.
- To protect fish habitat from contamination, it is recommended that all machinery be maintained in good working condition and that all machinery be fueled a minimum of 30 m from the high-water mark.
- Any temporary storage of aggregate material shall be set back from the water's edge by no less than 30 m and be contained by heavy-duty silt fencing.
- Maintain as much permeable surface area as possible in future development plans to limit the generation of stormwater runoff.
- Best practices for siting of septic systems should be adhered to and be installed by a licences septic system contractor ensuring all applicable regulations are met and required permits obtained.

7.7 Species at Risk

7.7.1 Least Bittern

The 30 m and 50 m setbacks for the local unevaluated wetlands and the Morris Island Wetland Complex PSW, as well as the proposed development envelope are sufficient to protect *candidate* least bittern nesting habitat on-site from negative impacts.

To further minimize the impact of the proposed development on eastern wood-pewee and wood thrush habitat, vegetation removal should occur outside the key breeding bird period (typically March 31 to August 31) as identified by Environment Canada for the protection of nesting and foraging eastern wood-pewee and wood thrush and to avoid contravention of the Migratory Bird Convention Act.

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

7.7.2 Eastern Small-footed Myotis, Little Brown Myotis, and Tri-Colored Bat

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

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

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

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

7.7.3 Blanding's Turtle

As discussed in Section 6.7.5, it is GEMTEC's opinion that the proposed project will not negatively impact the function of regulated habitat on-site. As such it is GEMTEC's opinion that standard avoidance and mitigation measures will be sufficient to mitigate impacts of the proposed project and no ministry consultation is required.

The 50 m PSW setback and 30 m local wetland setback is sufficient to protect wetland habitat from encroachment and habitat loss. Furthermore, the 30 m wetland setback will protect Category 2 habitat associated with surface water features. Blanding's turtle and associated habitat will be further protected by the proposed development envelope. The development envelope will minimize destruction, disturbance and vegetation removal within Category 3 habitat. During construction Blanding's turtles will be excluded from the work area, but following construction completion the remining habitat (outside of new dwellings) will still be available for use by Blanding's turtles.

Through the use of the proposed wetland setbacks and the establishment of the development envelopes, total impacted Category 2 habitat is reduced from 0.2 ha to 0 ha. Impacts to Category 3 habitat remains unchanged at 0.2 ha. Implementation of the setback and development envelope ensures Category 2 habitat is protected and that the migratory function of the Category 3 habitat associated with the wetlands and watercourses will not be negatively impacted, post-construction Blanding's turtle will still be able to utilize the area for overland movement.

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

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

- Prior to any site work, reptile and amphibian exclusion fencing should be installed around the entire perimeter of the construction area to prevent the migration of Blanding's Turtles and other wildlife into the construction zone. The temporary exclusion fencing will also provide a visual demarcation of the development area for workers during construction. Exclusion fencing should follow the protocols outlined in the Species at Risk Branch: Best Practices Technical Note: Reptile and Amphibian Exclusion Fencing Version 1.1 (MNRF, July 2013).
- Temporary exclusion fencing should be inspected by a designated staff member once per week between April 15 and October 15 of any year. The designated staff member should be trained by a Qualified Professional. Any damage to temporary fencing should be repaired by the end of the business day when the damage is observed.
- Each day of construction a daily pre-work sweep of the construction area should occur to ensure no SAR are present and to remove any wildlife from inside the construction area.
- All staff working on-site should be provided Species at Risk training to identify species at risk which a potential to occur on-site including: Blanding's turtle. Training will also outline the stop work procedures and MECP reporting/consultation prior to resuming work.
- During construction if any SAR is identified on-site all work should stop and a qualified professional and the MECP should be contacted for next steps. SAR sightings should be reported to the MECP and the NHIC.
- Heavy-duty silt fencing should be installed and maintained during construction and whenever soil is exposed; the incorporation of lot-side swales and gravel laneways are intended to promote infiltration and direct stormwater runoff to road side ditches instead of towards adjacent waterbodies.
- Tree clearing and vegetation removal will be undertaken outside of the active season (April 1 – October 31) for Blanding's turtles. Prior to vegetation removal a sweep will be completed to ensure Blanding's turtles are absent from the area.
- Cover all stockpiled material with a geotextile to prevent turtles from nesting in the material between May 1 and August 1 of any year.
- To protect aquatic habitat for Blanding's turtles, machinery should be maintained in good working condition and all machinery should be fueled a minimum of 30 m from the high water mark.
- Following construction completion, residents should be provided with information and awareness packages for SAR that have the potential to occur on their property. Information and awareness packages will include information on species identification, life-history, and habitat use for all species at risk with a potential to occur on-site, including Blanding's turtle. Information packages will also include contact/reporting options to the MECP and NHIC is species are encountered.

7.8 Wildlife

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

- Vegetation removal should occur outside of March 15 to November 30 to avoid the key breeding bird period, active turtle season, and bat summer active season. The timing windows provides protection of migratory birds, SAR turtles, roosting bats and avoids contravention of the Migratory Bird Convention Act and Endangered Species Act. If vegetation clearing activities must take place during the aforementioned timing window than a nest survey and site sweep shall be conducted by a qualified professional to ensure no impacts to birds or turtles. If vegetation removal has the potential to impact SAR bats (i.e. vegetation removal within contiguous forested tracts) consultation with the MECP is required to determine whether the project will required an authorization.
- Installation of silt fence barriers around the entire construction envelope of each future residential dwelling to prohibit the emigration of wildlife into the construction area.
- 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 Ministry of Environment, Conservation and Parks (MECP) district should be contacted immediately and operations modified to avoid any negative impacts to species at risk or their habitat until further direction is provided by the MECP.

7.9 Best Practice Measures for Mitigation of Cumulative Impacts

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

- To protect wildlife during construction, construction should be completed in accordance with the best practices outlined in Protocols for Wildlife During Construction, from the City of Ottawa (Ottawa, 2022b), and Bird-Safe Design Guidelines from the City of Ottawa (Ottawa, 2022a).
- 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 a plan of severance application for lot addition for the properties municipally addressed as 171 Dewolfe Street and 5417 Loggers Way and the property located on Part of Lots 25, 26 and 27, Concession 5 and 6, in the Geographic Township of Fitzroy, in the City of Ottawa, Ontario. The severance application and lot addition would be for the expansion of 5417 Loggers Way, which has an existing size 0.22 ha, with no plan of future development.

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 impacts are anticipated from the proposed severance.

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

- No significant impacts to natural heritage features identified on-site, including, fish habitat, significant woodlands, significant and local wetlands, significant wildlife habitat or habitats of species at risk are anticipated due to the proposed land severance.
- The proposed project complies with the natural heritage policies of the Provincial Policy Statement.
- The proposed project complies with the natural resource 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 1823023 Ontario Inc. and is intended for the exclusive use of 1823023 Ontario Inc.. This report may not be relied upon by any other person or entity without the express written consent of GEMTEC and 1823023 Ontario Inc. Nothing in this report is intended to provide a legal opinion.

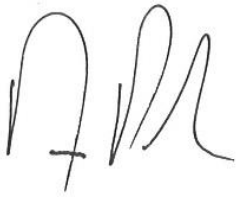
The investigation undertaken by GEMTEC with respect to this report and any conclusions or recommendations made in this report reflect the best judgements of GEMTEC based on the site conditions observed during the investigations undertaken at the date(s) identified in the report and on the information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



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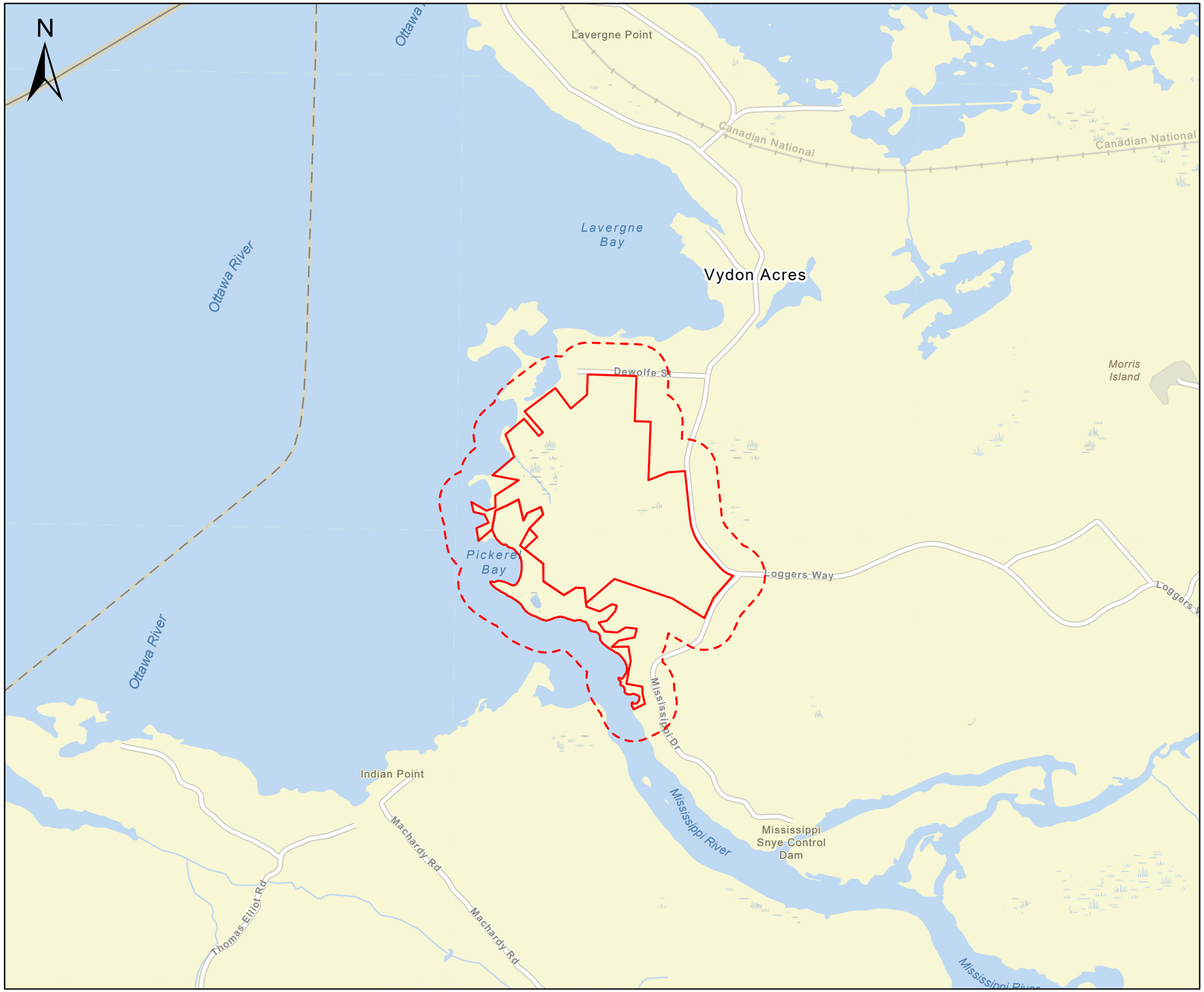
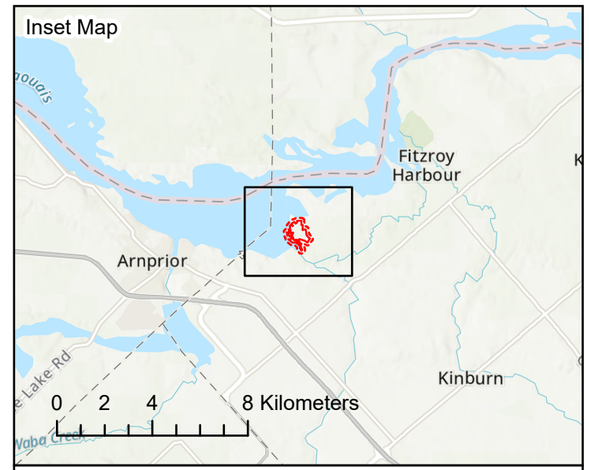
APPENDIX A

Report Figures



Legend

- Property Boundary
- Study Area



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Client:	Project:
1823023 Ontario Inc.	100227.100

Location
5417 Loggers Way
Geographic Township of Fitzroy
City of Ottawa, Ontario

Drwn By:	Chkd By:	
E.P.	A.A.	Site Location

Date: February 2024	Rev.	
	1	Figure: A.1

Coordinate System: NAD 1983 UTM Zone 18N
Service Layer Credits: World Topographic Map: City of Ottawa, Province of Ontario, Esri Canada, Esri, TomTom, Garmin, SafeGraph, METI/NASA, USGS, EPA, NPS, USDA, NRCan, Parks Canada
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Legend

- Property Boundary
- Study Area
- Existing Dwelling
- Proposed Severance
- Lot to be Enlarged
- Local Wetland
- Provincially Significant Wetland
- Watercourse
- 1:100 Year Floodplain

Scale
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Client: 1823023 Ontario Inc.

Project: 100227.100

Location: 171 Dewolfe Street and 5417 Loggers Way
Geographic Township of Fitzroy
City of Ottawa, Ontario

Drwn By: E.P.
Chkd By: A.A.

Site Layout

Date: February 2024

Rev. 1

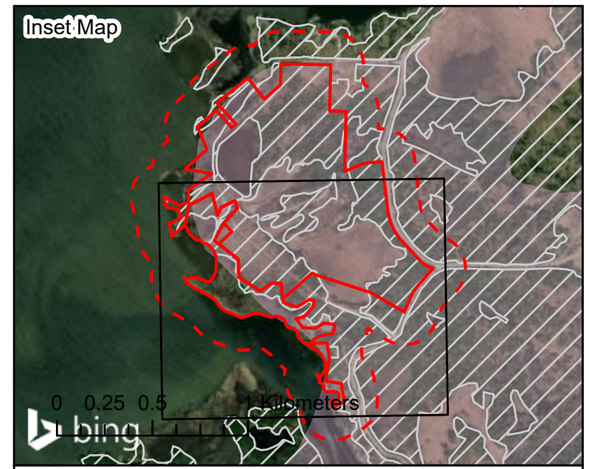
Figure: A.2

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

Legend

- Property Boundary
- Study Area
- Proposed Severance
- Lot to be Enlarged
- Local Wetland
- Provincially Significant Wetland
- Watercourse
- Vegetation Community

FODM5-4: Dry to Fresh Sugar Maple-Ironwood Deciduous Forest
FOMM4-3: Dry to Fresh White Cedar-Hardwood Mixed Forest
MAMM1: Graminoid Mineral Meadow Marsh
SWMM1-1: White Cedar-Hardwood Mineral Mixed Swamp



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Location
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City of Ottawa, Ontario

Drwn By:	Chkd By:	
E.P.	A.A.	Vegetation Communities

Date: February 2024	Rev.	
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Coordinate System: NAD 1983 UTM Zone 18N
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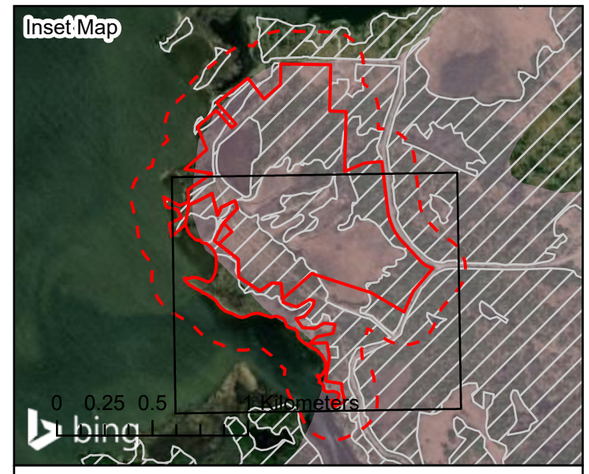
Legend

- Property Boundary
- Study Area
- Proposed Severance
- Lot to be Enlarged
- Existing Dwelling
- Local Wetland
- Provincially Significant Wetland
- Watercourse
- 1:100 Year Floodplain
- Stratum I Deer Yard Wintering Area
- Significant Woodland
- Blanding's Turtle Habitat - Category 2



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Drwn By:	Chkd By:	
E.P.	A.A.	Natural Heritage Features

Date: February 2024	Rev.	
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Coordinate System: NAD 1983 UTM Zone 18N
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N

Pickerel Bay

OTTAWA RIVER

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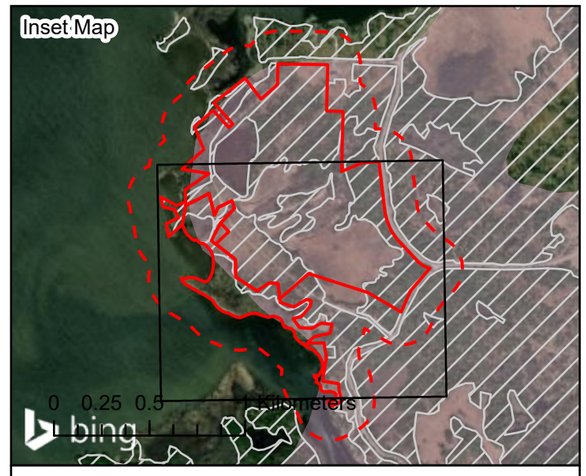
Mississip

Mississip

Legend

- Property Boundary
- Study Area
- Proposed Severance
- Lot to be Enlarged
- Existing Dwelling
- Local Wetland
- Provincially Significant Wetland
- Watercourse
- 1:100 Year Floodplain
- Development Envelope
- Blanding's Turtle Habitat - Category 2
- 30 m Setback
- 50 m Setback



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Location
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Geographic Township of Fitzroy
City of Ottawa, Ontario

Drwn By:	Chkd By:	Mitigation Measures
E.P.	A.A.	

Date: February 2024	Rev.	Figure: A.5
	1	

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

APPENDIX B

Site Photographs

Site Photograph 1 – FODM5-4 Dry-Fresh Sugar Maple – Ironwood Deciduous Forest

Site Photograph 2 – MAMM1 Graminoid Mineral Meadow Marsh

Site Photograph 3 – SWMM1-1 White Cedar-Hardwood Mineral Mixed Swamp

Site Photograph 4 – Unnamed Watercourse flowing from MAMM1-1

APPENDIX C

Report Summary Tables

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

Common Name	Scientific Name	S-Rank	Evidence
Avian Species			
American Robin	*Turdus migratorius*	S5B	Heard calling
Black-capped Chickadee	*Poecile atricapillus*	S5	Heard calling
Chipping Sparrow	*Spizella passerina*	S5B	Heard calling
Common Grackle	*Quiscalus quiscula*	S5B	Heard calling
Common Yellowthroat	*Geothlypis trichas*	S5B	Heard calling
* Eastern Wood-pewee	*Contopus virens*	S4B	Heard calling
Pileated Woodpecker	*Dryocopus pileatus*	S5	Heard calling
Red-eyed Vireo	*Vireo olivaceus*	S5B	Heard calling
Red-winged Blackbird	*Agelaius phoeniceus*	S5	Heard calling
Yellow-bellied Sapsucker	*Sphyrapicus varius*	S5B	Heard calling
Amphibian Species			
Green Frog	*Lithobates clamitans*	S5	Heard calling; directly observed
Northern Leopard Frog	*Lithobates pipiens*	S5	Directly observed
Wood Frog	*Lithobates sylvaticus*	S5	Directly observed
Reptilian Species			
Red-bellied Snake	*Storeria occipitomaculata*	S5	Directly observed
Mammalian Species			
Coyote	*Canis latrans*	S5	Scat observed
Red Squirrel	*Tamiasciurus hudsonicus*	S5	Heard calling

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

TABLE C.2
SCREENING RATIONAL FOR SIGNIFICANT WOODLANDS

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

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

Wildlife Habitat	Further Considered in EIS	Rationale
Waterfowl Stopover and Staging Areas	No	No suitable terrestrial habitat located on-site or study area to support waterfowl stopover and staging areas. No indicator species observed during field investigations.
Shorebird Migratory Stopover Area	No	Shorebird stopover sites are typically well-known and have a long history of use. The site does not contain suitable shoreline habitat for shorebird foraging.
Raptor Wintering Area	No	Suitable forest habitat available with the study area. However, suitable upland habitat is not present on-site or in study area.
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 meet minimum snag density (>10 snags/hectare) requirement to be considered SWH for bat maternity colonies.
Turtle Wintering Area	Yes	Suitable aquatic habitat with adequate water depth are present on-site within the wetlands associated with the following ELC Codes (MAMM1 and SWMM1-1). In the study area the Ottawa River is likely to support turtle wintering areas.
Reptile Hibernaculum	No	Structures such as large rock piles, bedrock outcrops, cervices or other karstic features have not been identified on-site.
Colonial Bird Nesting Habitat	Yes	The NHIC identifies the presence of Colonial Waterbird Nesting Area was within the 1km2 grid encompassing site, as well as 1 km in all directions. Habitat likely associated with the Ottawa River. Suitable habitat to support colonial bird nesting habitat on-site is limited to the marshes (MAMM1).
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 Stopver Area	No	The site is not located within 5 km of Lake Ontario and therefore does not meet the defining criteria.
Deer Yarding Areas and Winter Congregation Areas	Yes	As outlined in the the Signficant Wildlife Habitat Criteria Schedules (OMNRF, 2015) winter deer yards and deer managment are an MNRF responsibility. Based on review of publically available data from the OMNRF on Land Information Ontario Geo-hub, Stratum I deer yard has been identified on-site and within the broader study area. Winter deer yard encompasses most of the site.

TABLE C.4
SCREENING RATIONALE FOR SPECIALIZED WILDLIFE HABITATS

Specialized Wildlife Habitat	Further Considered in EIS	Rationale
Waterfowl Nesting Area	Yes	Upland habitat on-site and study area are adjacent to potentially suitable wetland habitat (ELC MAMM1), which may support waterfowl nesting area SWH. MAMM1 adjacent to site are classified as a PSW.
Bald Eagle and Osprey Nesting, Foraging and Perching Habitat	Yes	Suitable woodland habitat is present adjacent to open water of the Ottawa River. Neither species nor evidence of species was observed within the study area.
Woodland Nesting Raptor Habitat	No	Nesting may occur in any ecosite and species preference is towards mature forest stands >30 ha with >10 ha of interior habitat with a 200 m buffer. Suitable interior habitat not present on-site. No stick nests observed on-site.
Turtle Nesting Habitat	No	Suitable exposed mineral soil with minimal vegetation cover was not observed within 100 m of site.
Seeps and Springs	No	No seeps or springs are present on-site.
Woodland Amphibian Breeding Habitat	Yes	Wetlands on-site (SWMM1 and MAMM1) adjacent to woodlands on-site (FOMM4-3), may provide suitable habitat to support woodland amphibian breeding SWH.
Wetland Amphibian Breeding Habitat	No	Suitable habitat to support wetland amphibian breeding SWH is not present on-site.
Woodland Area-Sensitive Bird Breeding Habitat	No	Woodland area-senstive birds require interior forest habitat located >200 m from the forest edge in large (>30 ha) forest stands. Contiguous woodlands within the study area may meet the defining criteia, but woodlands on-site do not.

TABLE C.5
SCREENING RATIONALE FOR HABITAT FOR SPCEIES OF CONSERVATION CONCERN

General Habitats of Species of Conservation Concern	Further Considered in EIS	Rationale
Marsh Breeding Bird Habitat	Yes	Suitable marsh habitat may be present adjacent to site, to support marsh breeding bird SWH (ELC codes MAMM1 and SWMM1).
Open Country Breeding Bird Habitat	No	No suitable meadow habitat on-site to support open country bird breeding due to recent (< 5 years) disturbances.
Shrub/Early Successional Breeding Bird Habitat	No	Candidate early successional breeding bird habitat typically includes fallow fields transitioning to early successional forest habitats that are > 10 ha but have not been actively used for farming. No suitable habitat is present on-site.
Terrestrial Crayfish Habitat	No	Terrestrial crayfish are only found within southwestern Ontario (MNRF, 2012).
Special Concern and Rare Wildlife Species	Yes	The following species of special concern were identified on-site during the site investigation: eastern wood-pewee. Occurrence data from the NHIC and DFO SAR Map also indicates the following species of special concern to have occurred on-site and/or the surrounding area: Canada warbler, eastern wood-peewe, wood thrush, eastern musk turtle, eastern ribbonsnake, northern map turtle, snapping turtle, and river redhorse.

TABLE C.6
SCREENING RATIONALE FOR FOR ANIMAL MOVEMENT CORRIDORS

General Habitats of Species of Conservation Concern	Further Considered in EIS	Rationale
Amphibian Movement Corridor	No	No wetland amphibian breeding habitat has been confirmed on-site.
Deer Movement Corridor	Yes	Stratum I deer wintering yards have been identified on-site by the OMNRF.

TABLE C.7
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
Avian					
Bald Eagle	Special Concern	Confirmed nest at Shirley's bay since 2012.	Nest in mature forests near open water.	Low	Ottawa River adjacent to potentially suitable forests. No recent observations within 1 km of site. Niether species nor nests observed during field investigation.
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. No recent observations within 1 km of site. Species not observed during field investigation.
Barn Swallow	Special Concern	33 confirmed, 2 probable, and 3 possible nests in recent OBBA.	Nests in barns and other semi-open structures. Forages over open fields and meadows.	Low	Site lacks suitable structures to provide nesting habitat for species. No recent observations within 1 km of site. Species not observed during field investigation.
Black Tern	Special Concern	Four confirmed nests in recent OBBA.	Breeds by build floating nests in loose colonies in shallow marshes	Low	Marsh on-site unlikely to provide sufficient open water to support species breeding. No recent observations within 1 km of site. Species not observed during field investigation.
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.	Low	Suitable grassland habitat is not available on-site. No recent observations within 1 km of site. Species not observed during field investigation.
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.	Moderate	Wet forests on-site may provide suitable habitat to support species. NHIC observations within 1 km of site. Species not observed during field investigation.
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 forests not present on-site. No recent observations within 1 km of site. Species not observed during field investigation.
Chimney Swift	Threatened	3 confirmed, 2 probable, and 11 possible nests in recent OBBA.	Nests in traditional-style open brick chimneys.	Low	No suitable nesting structures on-site. No recent observations within 1 km of site. Species not observed during field investigation.
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	Species known to nest in gravel and rocky areas such as quarries, gravel pits and bedrock outcrops. Suitable nesting habitat not present on-site. No recent observations within 1 km of site. Species not observed during field investigation.
Eastern Meadowlark	Threatened	22 confirmed, 11 probably and 3 possible nests during recent OBBA.	Nests and forages in dense tall grass fields and meadows, higher tolerance to woody vegetation.	Low	Suitable grassland habitat is not available on-site, but may be within general area. NHIC indicates species within 1 km of site. Species not observed during field investigation.
Eastern Whip-poor-will	Threatened	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	Suitable woodland and exposed rock habitat not present on-site or within study area. No recent observations within 1 km of site. Species not observed during field investigation.
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.	High	Woodland habitat on-site and adjacent properties may provide suitable habitat to support species. Species was observed on-site during investigations.
Evening Grosbeak	Special Concern	5 confirmed, 6 probable, 8 possible nests in recent OBBA (mostly in west).	Nests in trees or large shrubs; prefer mature coniferous forests but will also use deciduous forests, parklands, and orchards. Overwinters in Ottawa area.	Low	Site outside of known breeding range. Suitable habitat limited to coniferous forests. No recent observations within 1 km of site. Species not observed during field investigation.
Golden Eagle	Endangered	Migrant only in Ottawa area.	Nests on remote, bedrock cliffs overlooking large bogs, lakes or tundra.	Low	Suitable cliffs, bogs, or tundra are not present within the study area. No recent observations within 1 km of site.
Golden-winged Warbler	Special Concern	1 confirmed, 1 probable nest in recent OBBA. Critical habtiat identified in Quebec, northwest of Ottawa.	Ground nesting, edge species. Breeds in successional scrub habitats surrounded by forests.	Low	Site lacks successional scrub habitats surrounded by forests. No recent observations within 1 km of site. Species not observed during field investigation.
Grasshopper Sparrow	Special Concern	4 confirmed, 5 probable and 2 possible nests in recent OBBA.	Area-sensitive grassland species, nests on ground.	Low	No suitable grassland habitat to support species. No recent observations within 1 km of site. Species not observed during field investigation.
Henslow's Sparrow	Endangered	No nests in recent OBBA.	Area-sensitive grassland species, nests on ground. Prefers open, moist, tallgrass fields.	Low	Preferred grassland habitat is not present on-site nor within the study area. No recent observations within 1 km of site. Species not observed during field investigation.
Least Bittern	Threatened	Confirmed nesting in 1 square, 3 probable and 4 possible during recent OBBA. Mississippi Snye identified as critical habitat in federal recovery strategy.	Found in marshes and shrub swamps, usually near cattails.	High	Marsh habitats on-site may provide suitable habitat to support species. eBird indicates species in general area. Species not observed during field investigation.
Loggerhead shrike	Endangered	Possible nests reported in Burnt Lands Provincial Park (2018) and Richmond area (2019). Critical habitat identified in Montague Township.	Prefers grazed pastures with short grass and scattered shrubs, especially hawthorn.	Low	Preferred pasture habitat not present on-site. No recent observations within 1 km of site. Species not observed during field investigation.
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	Suitable nesting habitat may be present on-site. No recent observations within 1 km of site. Species not observed during field investigation.
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 anthropogenic structures such as tall buildings, bridges, and smokestacks.	Low	Suitable nesting habitat not present on-site. No recent observations within 1 km of site. Species not observed during field investigation.
Red-headed Woodpecker	Endangered	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	Woodlands on-site may provide suitable habitat. No recent observations within 1 km of site. Species not observed during field investigation.
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	No boreal wetlands present on-site or in study area.
Short-eared Owl	Threatened	1 confirmed, 2 probable, 2 possible nests in recent OBBA.	Ground nester, prefers open habitats, fields and marshes.	Low	Marshes on-site not likely to support species. Open fields not present on-site. No recent observations within 1 km of site. Species not observed during field investigation.
Wood Thrush	Special Concern	5 possible, 15 probable, and 16 confirmed nests in recent OBBA for Ottawa area.	Prefers deciduous or mixed woodlands.	Moderate	Woodlands on-site may provide preferred habitat to support species activity. NHIC observations within 1 km of site. Species not observed during field investigation.
Mammalian					

TABLE C.7
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
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 stuctures adjacent to site. Potential summer habitat present within study area.
Little Brown Myotis	Endangered	Various sites in central and western parts of the Ottawa area. Critical habitat (hibernacula) identified to northwest of Ottawa.	Maternal colonies known to use buildings, may also roost in trees during summer. Affinity towards anthropogenic structures for summer roosting habitat and exhibit high site fidelity (Environment Canada, 2015).	Moderate	Potentially suitable anthropogenic stuctures adjacent to site. Potential summer habitat present within study area.
Northern myotis (Northern Long-eared Bat)	Endangered	Historical records in downtown Ottawa, more recently in sites to east (Orleans, Clarence-Rockland). Critical habitat (hibernacula) identified to northwest of Ottawa.	Occurs throughout eastern North America in associated with Boreal forests. Roosts mainly in trees, occasionally anthropogenic structures during summer (Environment Canada, 2015). Overwinters in caves and abandoned mines.	Low	Species affinity is for Boreal forests and species rarely roosts in anthropogenic structures.
Tri-colored Bat	Endangered	Unknown; historical records from sites in urban Ottawa, Lanark County. Critical habitat (hibernacula) identified to northwest of Ottawa.	Roosts in trees, rock crevices and occasionally buildings during summer. Overwinters in caves and mines.	Moderate	Potentially suitable anthropogenic stuctures adjacent to site. Potential summer habitat present within study area.
Reptilian					
Blanding's Turtle	Threatened	Scattered throughout, with numerous sites in western half of City. Critical habitat present in Ottawa.	Inhabits quiet lakes, streams and wetlands with abundant emergent vegetation. Frequently occurs in adjacent upland forests.	High	Marsh wetlands on-site may provide suitable aquatic habitats to support species. NHIC indicates observations within 1 km2 grid encompassing the site, as well as 1km in all directions. Species not observed during field investigation.
Eastern Musk Turtle	Special Concern	Scattered throughout.	Ponds, lakes, marshes and rivers that are generally slow-moving, have abundant emergent vegetation and muddy bottoms that they burrow into for winter hibernation.	Moderate	Site may provide preferred habitat to support species activity. NHIC observations within 1 km of site. Species not observed during field investigation.
Eastern Ribbonsnake	Special Concern	Few reported; mostly from norwestern Ottawa.	Found in marshy edges of wetlands and watercourses.	Moderate	Site may provide suitable mixture of aquatic and terrestrial features required to support species. NHIC observations within 1 km of site. Species not observed during field investigation.
Northern Map Turtle	Special Concern	Ottawa River, Rideau River (Burritt's Rapids area), South Nation River	Rivers and lakeshores, hibernates on the bottom of deep, slow-moving sections of river	High	Site includes preferred aquatic habitat to support species activity. NHIC indicates observations within 1 km2 grid encompassing the site, as well as 1km in all directions. Species not observed during field investigation.
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. Uses gravelly or sandy areas along streams for nesting.	High	Site includes preferred habitat to support species activity. NHIC indicates observations within 1 km2 grid encompassing the site, as well as 1km in all directions. Species not observed during field investigation.
Spotted Turtle	Endangered	Few reported (locations confidential). Critical habitat present in Ottawa.	Secretive wetland species. Species is semi-aquatic and prefers wetlands with slow-moving water.	Moderate	Site may provide suitable habitat to support species. NHIC indicates presence of 'Restricted Species' encompassing the site and surrounding area. 'Restricted' represents an endangered species, but does not confirm which species. Species not observed during field investigation.
Wood Turtle	Endangered	Few historical records in NHIC. Critical habitat may be present to northwest.	Primarily terrestrial forest species. Associated with clear, gravelly streams.	Moderate	Site may provide suitable habitat to support species. NHIC indicates presence of 'Restricted Species' encompassing the site and surrounding area. 'Restricted' represents an endangered species, but does not confirm which species. Species not observed during field investigation.
Plants					
American Ginseng	Endangered	Critical habitat broadly identified in the Ottawa area. Specific locations are confidential.	Rich, moist, relatively mature deciduous forests.	Moderate	Hardwood forests on-site provide suitable habitats to support species. NHIC indicates presence of 'Restricted Species' encompassing the site and surrounding area. 'Restricted' represents an endangered species, but does not confirm which species. Species not observed during field investigation.
Black Ash	Endangered	Scattered throughout.	Found in wetlands, floodplains, and moist woodlands.	Low	Marsh wetland communities on-site may provide suitable habtiat. NHIC observations within 1 km of site. Species not observed during field investigation.
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.	High	Site may provide preferred habitat to support species activity. NHIC observations within 1 km of site. A single specimen was observed on-site.
Eastern Prairie-fringed Orchid	Endangered	Richmond Fen (2 locations).	Grows in wetlands, fens, swamps and tallgrass prairie.	Low	Wetlands on-site may provide suitable habitat to support species. No recent observations within 1 km of site. Species not observed during field investigation.
Lichens					
Pale-bellied Frost Lichen	Endangered	Historical records in downtown area (extirpated locally). No critical or regulated habtiat 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.
Insects					
American Bumblebee	Special Concern	Unknown; COSEIWC identifies historical sightings in Ottawa and one nearby in 2012.	Nests at or above ground level, often in mats of long grass but also in other available shelters.	Low	Potentially suitable foraging vegetation available on-site. No recent observations within 1 km of site. Species not observed during field investigation.
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. No known recent occurences.	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

TABLE C.7
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
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	Low	Potentially suitable foraging vegetation available for Monarch on-site. No recent observations within 1 km of site. Species not observed during field investigation.
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.
Rapids Clubtail	Threatened	Occurs along Mississipi River in Blakeney/ Pakenham area upstream of Ottawa.	Clear, cool medium-to-large rivers with gravel shallows and muddy pools.	Low	Site lacks preferred habitat to support species activity. No recent observations within 1 km of site. Species not observed during field investigation.
Rusty-patched Bumble Bee	Endangered	Historic records only from scattered sites 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.
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	Low	Site may provide suitable foraging grounds. No recent observations within 1km of site. Species not observed during field investigation.
Molluscs					
Hickorynut	Endangered	Ottawa River	Live on the sandy beds in large, wide, deep rivers – usually more than two or three metres deep – with a moderate to strong current. Fish host of the Hickorynut is the Lake Sturgeon	High	DFO SAR Map indicates species within 1 km of site. Potential occurences are limited to the Ottawa River as it is known to provide habitat to support species. Watercourses on-site are not of sufficient size or depths to support species. Species not observed during field investigation.
Fish					
American Eel	Endangered	Ottawa, Mississippi, Carp (including Poole Creek), South Nation and Rideau Rivers (including Rideau Canal).	Primarily nocturnal, hiding in soft substrate or submerged vegetation during the day. Known to traverse land while migrating.	High	NHIC indicates species within 1 km of site. Potential occurences are limited to the Ottawa River and Mississipi River, as they are known to provide habitat to support species. Site lacks sufficient habitat to support species. Species not observed during field investigation.
Bridle Shiner	Special Concern	Rideau River	Prefers clear water with abundant vegetation over silty or sandy substrate.	Low	Site lacks preferred habitat to support species acitivty. No recent observations within 1 km of site. Species not observed during field investigation.
Channel Darter	Special Concern	Ottawa River	Prefers areas with moderate current over sandy or rocky substrate.	Low	Site lacks preferred clean streams with sandy or gravel bottoms. No recent observations within 1 km of site. Site located outside of known areas of occurrence for species. Species not observed during field investigation.
Cutlip Minnow	Threatened	12 sites in southeast Ontario.	Requires warmer river and creeks with clear, slow-moving water and rocky or gravel bottom.	Low	Watercourses in study area lack clear, slow-moving water, with gravel bottom, to support species. No recent observations within 1 km of site. Species not observed during field investigation.
Lake Sturgeon (Great Lakes - Upper St. Lawrence populations)	Endangered	Ottawa River	Only found in large lakes and rivers. Forages in cool water, 4-9 m deep over soft substrate; spawns in shallower, fast-flowing areas over rocks or gravel.	High	NHIC indicates species within 1 km of site. Potential occurences are limited to the Ottawa River, as it is known to provide habitat to support species. Site lacks sufficient habitat to support species. Species not observed during field investigation.
Northern Brook Lamprey	Special Concern	Ottawa River	Non-parasitic species; prefers shallow areas with warm water. Larvae live in burrows in soft substrate for up to 7 years.	Low	Site lacks suitable aquatic habitat to support species acitivty. No recent observations within 1 km of site. Species not observed during field investigation.
Northern Sunfish	Special Concern	Ottawa River	Shallow, vegetated areas of warm lakes, ponds, and slowly flowing watercourses with clear water.	Low	Site lacks preferred habitat to support species acitivty. No recent observations within 1 km of site. Species not observed during field investigation.
River Redhorse	Special Concern	Ottawa and Mississippi Rivers; unconfirmed reports from Rideau River.	Prefers fast-flowing, clear rivers over rocky substrate.	High	DFO SAR Map indicates species within 1 km of site. Potential occurences are limited to the Ottawa River and Mississipi River, as they are known to provide habitat to support species. Site lacks sufficient aquatic habitat to support species. Species not observed during field investigation.
Silver Lamprey	Special Concern	Ottawa River and mouths of tributaries from Rideau Canal east (downstream).	Larvae live 4-7 years in burrows (prefer soft substrates); filter-feed on plankton. Require clear water so they can find fish hosts, relatively clean stream beds of sand and organic debris for larvae to live in, and unrestricted migration routes for spawning.	Low	Site lacks suitable aquatic habitat to support species acitivty. No recent observations within 1 km of site. Species not observed during field investigation.

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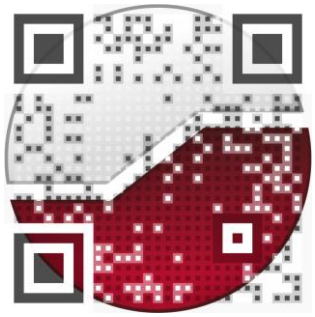

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geotechnical	géotechnique
environmental	environnementale
field services	surveillance de chantier
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