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Environmental Impact Statement
Proposed Land Severance
6247 Russell Road
Carlsbad Springs

City of Ottawa, Ontario

GEMTEC Project: 103610.001

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Submitted to:

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February 11, 2025
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EXECUTIVE SUMMARY

GEMTEC Consulting Engineers and Scientists Limited (GEMTEC) was retained by Ian Dupre to complete an Environmental Impact Statement (EIS) for the property located at 6247 Russell Road, Carlsbad Springs, in the City of Ottawa, Ontario. This EIS has been completed in support of a land severance application to create two new lots with the construction of a single-family residential dwelling on each, and was completed in accordance with all federal, provincial and municipal policies and guidelines, as applicable.

In support of this EIS, an initial desktop review was completed to identify natural heritage features and species at risk (SAR) that are identified on-site, to assist with scoping future field investigation efforts. One single field investigation was completed in 2024 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 site investigations, the following natural heritage features were identified on-site or within the Study Area: Bear Brook and unnamed watercourses (fish habitat), local wetlands, significant wildlife habitat (SWH) for turtle nesting areas (candidate), woodland amphibian breeding (*candidate*), marsh breeding bird habitat (*candidate*), and habitat of special concern and rare wildlife species (*candidate*; eastern wood-pewee and snapping turtle). The following SAR and their habitat were identified as having a potential to occur on-site: eastern small-foot myotis, little brown myotis, tri-colored bat, and Blanding's turtle. Regulated Category 2 and 3 habitat was identified on-site for Blanding's turtle.

Given the proposed development and minimal impact potential to Blanding's turtle and their habitat, it is GEMTEC's opinion that standard avoidance and mitigation measures will be sufficient to mitigate impacts of the proposed project and no ministry consultation is required. Potential impacts to the natural heritage features are primarily associated with the loss of woodland habitat on-site. Impacts to significant woodlands and SWH can be mitigated through the implementation of a 0.2 ha development envelope on each proposed severance.

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

The proposed residential development complies with the natural heritage policies of the Provincial Planning Statement and the City of Ottawa Official Plan. No negative impacts to identified natural heritage features or their ecological functions are anticipated as a result of the proposed development as long as all mitigation measures in Section 7 are enacted and best management practices followed.

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1.0 INTRODUCTION

Ian Dupre (the Proponent) has retained GEMTEC Consulting Engineers and Scientists Limited (GEMTEC) to assist with the severance of two new parcels from an existing 18 hectare (ha) property located on 6247 Russell Road in the community of Carlsbad Springs, City of Ottawa, Ontario (the Project). The limits of the Project and the surrounding area are illustrated on Figure A.1 in Appendix A.

In support of the Project, an Environmental Impact Statement (EIS) has been prepared to identify and evaluate existing natural heritage features, assess impacts of the Project, and provide environmental management recommendations in accordance with *Section 4.7 – Environmental Protection* of the City of Ottawa Official Plan (Ottawa, 2022).

1.1 Physical Setting

The Study Area includes the 18-ha subject property and the lands within 120 m of the property. The property is bound to the south by Russell Road and the rear yards of neighboring properties municipally addressed as 6251 and 6255 Russell Road. To the west, the property is bound by neighboring properties, 6221 and 6235 Russell Road, and to the east by neighboring properties addressed as 6401 and 6379 Russell Road, respectively. The site is bound to the north by an unaddressed parcel. The subject property currently consists of rural residential property, coniferous forest, and riparian areas. The extent of the Study Area is illustrated on Figure A.2 in Appendix A.

The Study Area is situated within a larger rural-residential area. The existing land use designation from the Official Plan for the City of Ottawa is rural land use area.

1.2 Project Intent and EIS Objectives

The intent of the Project is to sever two parcels, from an existing 18 ha property, for the future construction of a single-family residential development on each. The new parcels are to measure approximately 0.84 ha and 1.49 ha in size and will front Russell Road. Based on *Section 4.7 – Environmental Protection* of the City of Ottawa Official Plan (Ottawa, 2022) an EIS is required showing that the proposed development will not negatively impact any potential natural heritage features, which may be present within the Study Area.

The objective of the EIS presented herein is to identify and evaluate the significance of any natural heritage features, as defined in the Provincial Planning Statement (MMAH, 2024), on the subject property and within the broader Study Area and to assess the potential impacts from the proposed development on any natural heritage features identified and recommend appropriate and defensible mitigation measures to ensure the long-term protection of any natural heritage features identified.

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

- Provincial Planning Statement (MMAH, 2024);
- Endangered Species Act (Ontario, 2007);
- Fisheries Act (Canada, 1984);
- Conservation Authorities Act (Ontario, 1990);
- Migratory Birds Convention Act (Government of Canada, 1994);
- Invasive Species Act (Ontario, 2015);
- Natural Heritage Reference Manual (OMNR, 2010); and
- City of Ottawa EIS Guidelines (Ottawa, 2023)
- City of Ottawa Official Plan (Ottawa, 2022)

2.0 METHODOLOGY

2.1 Desktop Review

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

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

- Make A Map: Natural Heritage Areas (OMNRF, 2014a);
- Land Information Ontario (OMNR, 2011b);
- Ontario Geological Survey (OGS, 2019);
- Mississippi Valley Conservation Geoportal (MVC, Undated);
- Department of Fisheries and Oceans Canada SAR Maps (DFO, 2023);
- Fish ON-Line (MNRF, 2023);
- Fish Activity Area (MNRF, 2022);
- Natural Heritage Information Centre Biodiversity Explorer (OMNRF, 2013a);
- Breeding Bird Atlas of Ontario (Cadman et al., 2007)
- Atlas of Mammals of Ontario (Dobbyn, 1994);
- Ontario Herpetofaunal Atlas (Oldham and Weller, 2000);
- Ontario Reptile and Amphibian Atlas (Ontario Nature, 2020);
- eBird Canada Hotspots (eBird Canada, 2023);
- iNaturalist Explore Observations Map (iNaturalist, 2023);
- iNaturalist Herps of Ontario Map (iNaturalist, 2023);
- City of Ottawa Official Plan (Ottawa, 2022); and
- City of Ottawa EIS Guidelines (Ottawa, 2023)

2.2 Field Investigations

A single field investigation was undertaken on July 30, 2024, 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 weather conditions during the field investigation completed were as follows: 26°C, ~15% cloud cover, Beaufort 2, and no precipitation. Photographs of site features taken during field investigations are provided in Appendix B.

2.3 Data Analysis

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

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

3.0 EXISTING ENVIRONMENT

3.1 Ecoregion

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

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

3.2 Landforms, Soils and Bedrock Geology

The topography of the site is relatively flat, with a gentle downward slope from a topographical high of 80 mASL within the east-central portion of the property, to the edge of the property. A topographical low of 64 mASL associated with the Bear Brook watercourse on-site.

Two topographical landforms, as mapped by Chapman and Putnam (1984) are described on the subject property, till plains (undrumlinized) and clay plains of the Ottawa Valley Clay Plains physiographic region. Till plains comprise the majority of the property, whereas the clay plains occupy the southwest corner.

The Ontario Geological Survey (OGS, 2019) identifies two surficial soil units on the subject property, older alluvial deposits and fine-textured glaciomarine deposits. The northern corner of the property is composed of older alluvial deposits consisting of clay, silt, sand, gravel, and may contain organic remains. The remainder of the property is comprised of fine-textured glaciomarine deposits consisting of massive to well laminated silt and clay, minor sand and gravel.

Bedrock on the site is composed of the Georgian Bay Formation, Blue Mountain Formation, Billings Formation, Collingwood Member; and Eastview Member, and comprised of shale, limestone, dolostone, and siltstone.

3.3 Study Area Land Use

Figure 1 below provides an illustration of the temporal changes in land use within the study area from 1965, 1999, 2014, and 2022 aerial imagery taken from GeoOttawa.

In 1965, it can be seen that the subject property appears to be used as agricultural land, with clear signs of pooling drainage water. The surrounding greater Study Area is comprised of agricultural land use, forested areas, and rural residential. Development is present on-site and appears to include multiple barns and structures.

By 1999, the subject property appears to undergo significant changes in vegetation. While the residential area remains the same, the agricultural lands are replaced with a plantation. No significant changes occur to the Study Area and surrounding lands.

By 2014, the subject property remains in the same state as 1999. Minor development changes occur within the study area, northwest of the property. No other significant changes occur to the Study Area and surrounding lands.

By 2022, the subject property remains in the same state as 2014. No significant changes occur to the Study Area and surrounding lands.

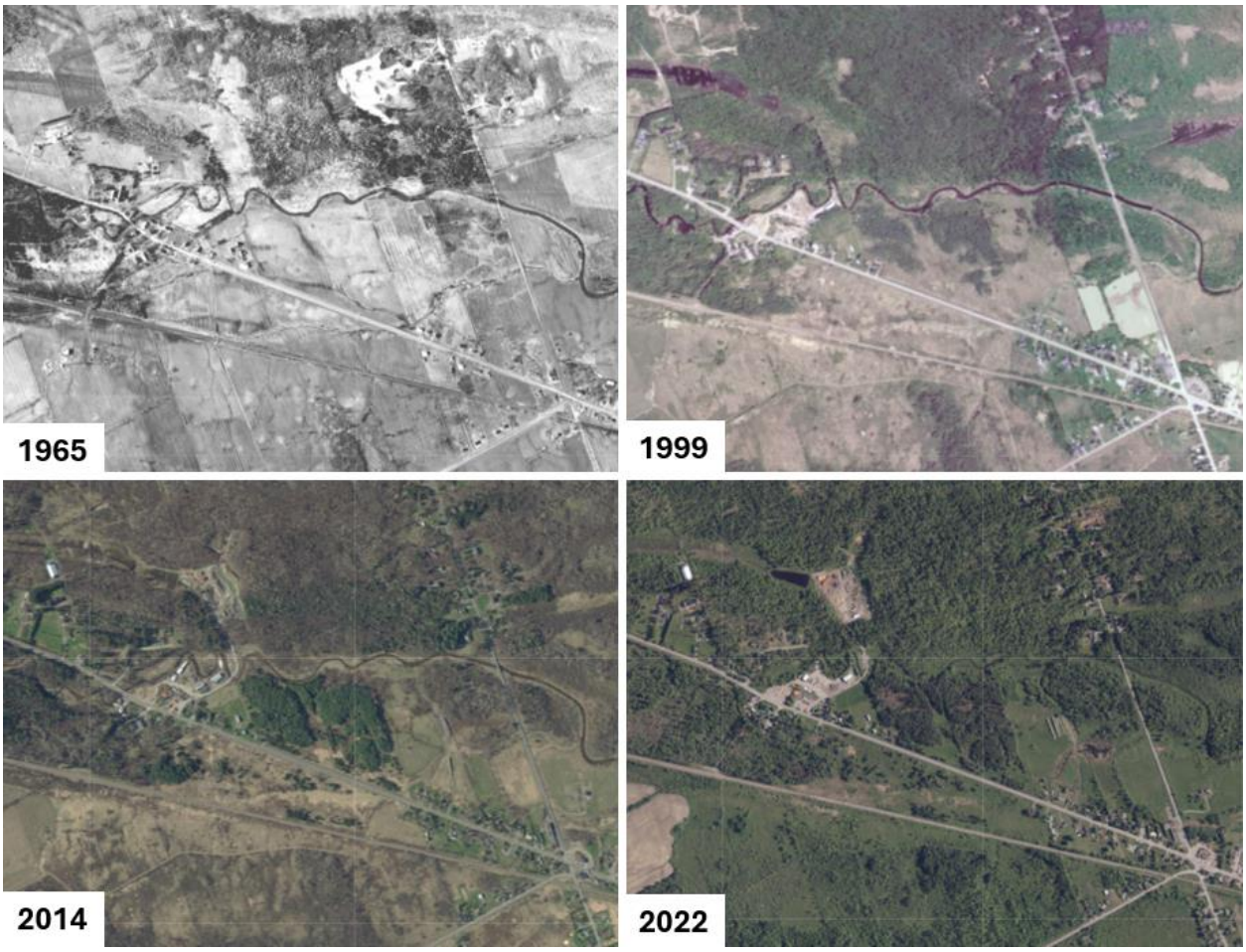


Figure 1 – Temporal Changes in Land Use within Study Area

3.4 Surface Water, Groundwater, and Fish Habitat

Surface water features identified on-site during the desktop review and confirmed during the field investigation include permanent watercourses, local wetlands, and flood plain mapping. Photos of surface water features are provided in Appendix B.

A watercourse identified as Bear Brook, is present within the northern portion of the property boundary. The watercourse enters the site from the western property boundary and meanders in an eastern direction before exiting the site along the eastern property boundary. The Bear Brook watercourse continues off-site in an eastern direction and eventually discharges into the South Nation River. During the site investigation, water within the Bear Brook was deep and created a lack of access to the north of the property.

Additionally, the SNCA geoportal mapping identifies two unnamed watercourses on the subject property, located within the western and southeastern portions of the property. The western watercourse discharges from the Bear Brook watercourse and travels in a southern direction for approximately 135 m before abruptly ending. The southeastern watercourse discharges from the Bear Brook northeast of the site and travels in a southern direction before entering the southeast corner of the property. During the time of the site investigation, water within the watercourses were stagnant and surface damp, and had no observable flow.

During the desktop analysis, GeoOttawa identified three local wetland communities on-site, adjacent to the Bear Brook watercourse. As previously mentioned, the area north of the Bear Brook was not investigated due to lack of access. As such, two of the local wetland communities were not directly investigated during the site investigation.

As identified by GeoOttawa mapping and the SNCA geoportal, portions of the 1:100-year flood plain for the Bear Brook watercourse occur over the northeastern portion of the subject property.

No other surface water features were identified on-site during the desktop review or the field investigation.

A fisheries assessment was not conducted as part of this EIS. However, the Bear Brook watercourse is known to provide direct fish habitat for a multitude of fish species and the unnamed watercourses on-site are assumed to provide direct fish habitat for small-bodied fish species.

Groundwater investigations were not completed in support of this EIS.

3.5 Vegetation Communities

Vegetation communities on-site were confirmed by GEMTEC in 2024, following protocols utilized in the Southern Ontario Ecological Land Classification System (Lee et al., 2008). Vegetation on-site is comprised of a mosaic of rural residential property, cultural meadow, swamp, and coniferous forest. Table 3.1 below provides a summary of the vegetation community identified on-site.

Table 3.1 Vegetation Communities On-site

ELC Type	Description	Size (ha)
Timothy Graminoid Meadow (MEGM3-7)	Located in the western corner of the property is a meadow dominated by timothy grass (*Phleum pratense*). Other common constituents included smooth brome (*Bromus inermis*), goldenrod (*Solidago* sp.), Queen Anne's lace (*Daucus carota*), clover (*Trifolium* sp.), common milkweed (*Asclepias syriaca*), cow's vetch (*Vicia cracca*), bedstraw (*Galium* sp.), lesser spearwort (*Ranunculus flammula*), purple loosestrife (*Lythrum salicaria*), wild strawberry (*Fragaria vesca*), and green ash (*Fraxinus pennsylvanica*) saplings.	0.68
Dry - Fresh White Pine Naturalized Coniferous Plantation (FOCM6-1)	Located across the majority of the property is a naturalized eastern white pine (*Pinus strobus*) plantation. The subcanopy consisted of American elm (*Ulmus americana*), trembling aspen (*Populus tremuloides*), and white spruce (*Picea glauca*). The shrub layer and ground cover were minimal and occurred in patches. Where present, shrub species included buckthorn (*Rhamnus* sp), whereas ground cover included sensitive fern (*Onoclea sensibilis*) and wood fern (*Dryopteris* sp.). Areas of fallen trees was present within this community.	9.23
Thicket Swamp (SWT)	Located within the northern extent of the property, immediately south of the Bear Brook, is a thicket swamp. Species included grasses (Poa sp.), jewelweed (*Impatiens capensis*), thistle (*Cirsium* sp.), brambles (*Rubus* sp.), aster (*Aster* sp.), Canadian wood nettle (*Laportea canadensis*), and vetch. Tree species within this community included willow (*Salix* sp.). As mentioned in Section 3.4, the swamp north of Bear Brook was not directly assessed; however, it is assumed to consist of similar species as the swamp thicket immediately southeast of the Bear Brook.	1.71
Fresh-Moist Mixed Meadow (MEMM4)	Located along Russell Road is a fresh-moist mixed meadow. This community was comprised of purple loosestrife, sensitive fern, thistle, corkscrew rush (*Juncus effusus 'Spiralis'*), and Queen Anne's lace. Few scattered trees are present and consisted of white spruce.	2.94
Rural Residential (CVR_4)	A rural residential property dominated by manicured lawns is located within the southwest corner of the property. Few scattered trees were present, consisting of eastern white pine and white spruce.	0.92
Deciduous Forest (FOD)	Located north and southeast of the Bear Brook is a deciduous forest. Tree species within this community consisted of willow, maple (*Acer* sp.), aspen (*Populus* sp.), and buckthorn. As mentioned in Section 3.4, the forest north of Bear Brook was not directly assessed; however, it is assumed to consist of similar species as the deciduous forest immediately southeast of the Bear Brook.	2.53

3.6 Wildlife

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

4.0 NATURAL HERITAGE FEATURES

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

4.1 Provincially Significant and Local Wetlands

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

As discussed in Section 3.3, a local unevaluated wetland community has been identified on-site within the north portion of the property. Given the vegetated separation distance and that no in-water work is proposed for the development, impacts to local wetlands are anticipated to be negligible.

Impacts to local wetlands from the proposed development are discussed in Section 6.

4.2 Significant Woodlands

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

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

Table C.2 in Appendix C, presents the screening rationale for significant woodlands applied in this EIS. Based on the above guidelines, the subject property falls within the Ottawa East - Bearbrook Rural Planning Area, with 29.9% forest area cover. Therefore, the minimum woodland

size for determining significance is 20 ha or greater, based on the guidance outlined in the Natural Heritage Reference Manual (OMNR, 2010).

Based on a review of screening criteria outlined in the Natural Heritage Reference Manual (OMNR, 2010), significant woodlands are present on-site due to ecological functions. Impacts to significant woodlands from the proposed development are discussed in Section 6.

4.3 Significant Valleylands

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

Although the site demonstrates variable topography, with a slope towards the Bear Brook watercourse, no valleylands were identified on-site during the desktop review or during the site investigation. However, as discussed above, portions of the 1:100-year flood plain for the Ottawa River have been identified on-site, as identified by SNCA and GeoOttawa mapping. In accordance with City of Ottawa and SNCA policies, no development is permitted within the 1:100-year flood plain.

The 1:100-year Flood Plain is illustrated on Figure A.4 of Appendix A. Impacts to the 1:100-year flood plain are discussed in Section 6 below.

4.4 Significant Areas of Natural and Scientific Interest

No ANSI were identified within the Study Area during the desktop review or during the site investigation.

4.5 Significant Wildlife Habitat

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

4.5.1 Habitats of Seasonal Concentrations of Animals

Seasonal concentration areas are habitats where large numbers of species congregate at one particular time of the year. The Significant Wildlife Habitat Technical Guide (OMNR, 2000) and

Significant Wildlife Habitat Ecoregion Criterion Schedules (OMNRF, 2015b) identify 13 types of seasonal concentration habitats that may be considered SWH. These 13 types of seasonal habitat are presented in Table C.3 in Appendix C, including a brief description of the rationale as to why they are or are not assessed further in this EIS.

Following a review of Table C.3 in Appendix C, no habitats of seasonal concentration of animals have been identified as being present on-site or within the Study Area.

4.5.2 Rare Vegetation Communities

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

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

4.5.3 Specialized Habitats for Wildlife

Specialized wildlife habitats are microhabitats that provide a critical resource to some groups of wildlife. The Significant Wildlife Habitat Technical Guide (OMNR, 2000) and Significant Wildlife Habitat Ecoregion Criterion Schedules (OMNRF, 2015b) identify 11 specialized habitats that may constitute SWH, these 11 types of specialized wildlife habitats are evaluated in Table C.4 in Appendix C.

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

4.5.3.1 *Candidate* Turtle Nesting Areas

Candidate turtle nesting habitat was identified on-site within the local wetlands (ELC code: SWT) and the Bear Brook watercourse.

Turtle nesting areas are defined as open, sunny areas, close to water and away from roads, that provide sand and gravel for turtles to dig in (OMNRF, 2015b). The defining criteria for *confirmed* turtle nesting area SWH is the presence of 5 nesting midland painted turtles, one or more northern map turtle or one or more snapping turtle (OMNRF, 2015b). Nesting areas may be identified by conducting observational studies during nesting season, typically late spring to early summer (OMNRF, 2015b).

Targeted turtle surveys were outside of the scope of this EIS. As such the presence or absence of turtle nesting SWH was not confirmed. Suitable exposed soil and eroding banks are present within the local wetlands and Bear Brook watercourse for turtle nesting habitat.

As such, impacts to *candidate* turtle nesting areas from the proposed development are discussed in Section 6 below.

4.5.3.2 *Candidate* Woodland Amphibian Breeding

Candidate woodland amphibian breeding habitat is associated with the wetland onsite (ELC code: SWT) and extends into the surrounding forest communities on-site (ELC code: FOCM6-1 and FOD).

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

Targeted amphibian breeding surveys were outside of the scope of this EIS. As such the presence or absence of woodland amphibian breeding SWH was not confirmed. Suitable wetland habitat is present on-site; however, it occurs > 120 m from the proposed severances, with forest habitat within a 230 m radius of these wetlands occurring on-site. As such, the forested habitats (ELC: FOCM6-1) on-site are considered part of the terrestrial dispersal component made up by the 230 m radius from the wetland habitat.

Impacts to *candidate* woodland amphibian breeding SWH from the proposed development are discussed in Section 6 below.

4.5.4 Habitats of Species of Conservation Concern

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

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

The Significant Wildlife Habitat Ecoregion Criterion Schedules (OMNRF, 2015b) provides five general habitat types known to support a wide range of species of conservation concern in Ontario. The five general habitat types for Ecoregion 6E are provided in Table C.5 in Appendix C, including a brief rationale as to why they are or are not considered further in this EIS. Following a review of Table C.5 in Appendix C, two *candidate* habitats of species of conservation concern has been identified on-site; marsh breeding bird habitat and habitats of Special Concern and Rare Wildlife Species for eastern wood-pewee, evening grosbeak, and snapping turtle.

4.5.4.1 Marsh Breeding Bird Habitat

Candidate marsh breeding bird habitat was identified within the on-site thicket swamp (SWT).

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).

As outlined in Table C.5, the defining ELC ecosites for the majority of the indicator species is not present on-site or in the study area. However, the deciduous swamp (SWDM) may provide suitable habitat to support green heron, as per the Significant Wildlife Habitat Ecoregion Criterion Schedules (OMNRF, 2015b). No other suitable habitats present on-site to support other marsh breeding bird species.

Targeted marsh breeding surveys were outside of the scope for this EIS. As such, marsh breeding bird habitat cannot be confirmed.

Potential impacts to *candidate* marsh breeding bird habitat are discussed in Section 6.

4.5.4.2 Special Concern and Rare Wildlife Species SWH

No species of species concern were observed on-site during the site investigation. Based on occurrence data from the NHIC, three species of special concern have been identified within the Study Area, eastern wood-pewee, evening grosbeak, and snapping turtle. No other species of special concern or rare wildlife species were identified on-site or within the broader study area.

Eastern Wood-pewee

The eastern wood-pewee (*Contopus virens*) is a small flycatcher bird with an S-rank of S4 (uncommon but not rare) and is listed as a species of special concern in Ontario. The species is often found near clearings and forest edges. The NHIC has identified an occurrence record for the species within the 1 km grid that encompasses the site; however, the species was not observed on-site during the site investigation. The woodlands on-site (ELC code: FOCM6-1 and FOD) may provide suitable nesting and foraging habitats to support Eastern wood-pewee.

Evening Grosbeak

The evening grosbeak (*Coccothraustes vespertinus*) is large finch with an S-rank of S4 (uncommon but not rare) and is listed as a species of special concern in Ontario. The species breeds in mature and second-growth mature forests; however, it will nest in deciduous woodlands occasionally. The NHIC has identified an occurrence record for the species within the 1 km grid that encompasses the site; however, the species was not observed on-site during the site investigation. The woodlands on-site (ELC code: FOCM6-1) may provide suitable nesting and foraging habitat to support evening grosbeak.

Snapping Turtle

The snapping turtle (*Chelydra serpentina*) 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. Snapping turtles are aquatic generalists, found in a variety of wetlands, water bodies and watercourses. As a highly aquatic species, snapping turtles prefer wetlands and waterbodies to be permanently flooded. Aquatic habitat identified on-site is unlikely to support snapping turtle overwintering habitat due lack of sufficient depths. However, based on permanency of surface water on-site, aquatic features may support snapping turtle foraging and general summer habitat. Given the availability of habitat in the study area there is a moderate chance of snapping turtle or suitable habitat to occur on-site.

4.5.5 Animal Movement Corridors

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

Following review of Table C.6 in Appendix C, no animal movement corridors have been identified on-site.

4.6 Fish Habitat

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

When development is unable to avoid resulting in the harmful alteration, disturbance or destruction of fish habitat from typical project impacts such as temperature change,

sedimentation, infilling, reduction of nutrient and food supply, etc., an authorization under the Fisheries Act is required for the project to proceed.

A fisheries assessment was not conducted as part of this EIS; however, as mentioned in Section 3.4, it is known that the Bear Brook watercourse provides direct fish habitat and is assumed that the unnamed watercourses provide direct fish habitat.

According to the Aquatic Resource Area (ARA) line segment database (OMNRF, 2015a), the following species have been identified within the Bear Brook watercourse: banded killifish, blacknose shiner, bluntnose minnow, brassy minnow, brook stickleback, brown bullhead, carps and minnows, central mudminnow, common carp, common shiner, creek chub, fallfish, fathead minnow, golden shiner, johnny darter, johnny darter x tesselated darter, logperch, mimic shiner, *moxostoma sp*., northern pike, northern redbelly dace, pumpkinseed, rock bass, rosyface shiner, smallmouth bass, spotfin shiner, stonecat, suckers, sunfishes, trout-perch, walleye, white sucker, and yellow perch. No critical habitat for aquatic SAR has been identified within the study area.

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

4.7 Species at Risk

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

Table C.7 in Appendix C, provides a summary of all species at risk which were determined to have the potential to occur on-site or within the broader study area, their protection status under the provincial Endangered Species Act (Ontario, 2007), their regional distribution, their probability of occurrence and a brief rationale of that probability. Impacts to endangered or threatened SAR determined to have a moderate or high potential to occur on-site or within the broader study area are discussed further in the Section 6.4.

5.0 PROPOSED PROJECT

The proposed project includes the severance of two new parcels from an existing 18 ha property, in support of a future single-family residential development. The proposed lots are approximately 1.49 ha and 0.84 ha in size and will front along the existing Russell Road. The proposed land severances are presented on Figure A.2.

The act of severing two lots from the existing property parcel is not expected to result in any physical alteration to the subject property. However, future development activities on the severed parcels will include vegetation removal, fill placement and/or elevation grading, excavation of building foundations, construction of a single-family dwelling, drilling of a drinking water well, installation of septic system, and general landscaping.

At the time of report writing, it is unknown whether the existing structures, located within Proposed Lot 1, will be demolished.

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

6.0 IMPACT ASSESSMENT

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

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

6.1 Local Wetlands

The local wetlands identified within the subject property are located approximately 120 m northeast of the proposed severances at its closest point.

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

However, given the separation distance between the wetlands and the subject property, and that this distance is to remain heavily vegetated, impacts to the wetlands are anticipated to be negligible. Additionally, short-duration construction impacts and impacts from increased human presence are not anticipated given the existing rural development north of the proposed severance area.

Given the above, no impacts are anticipated to occur to on-site local wetlands from the proposed development.

6.2 Significant Woodlands

As discussed in Section 4.2, the woodlands on-site are considered significant due to their ecological function. If the full build-out potential of the severance were realized, approximately 0.12 ha of the existing 9.23 ha (1.3%) of on-site significant woodlands is anticipated to be lost.

Potential impacts to significant woodlands on-site may include a minor loss of forest habitat and increased human disturbance. However, given the minor loss of anticipated woodlands and the abundance of woodlands on the retained lands and within the Study Area and beyond, it is unlikely that the minor loss of vegetation from the proposed development will increase habitat fragmentation or pose a large impact to avian species. Furthermore, development is proposed to occur primarily out of woodlands and to front to Russell Road, minimizing encroachment into the woodlands and areas adjacent to core-habitats for identified significant wildlife habitats.

Additionally, the vegetation removal is not anticipated to impact the defining features, function, or integrity of the significant woodlands on-site. Further to this, given the nature of the proposed development, a single-family residential dwelling on each lot, impacts from increased human presence and disturbance are anticipated to be minimal.

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

6.3 1:100-Year Flood Plain

As discussed in Section 4.3, based on SNCA and City of Ottawa mapping, a 1:100-year floodplain is present on-site.

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

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

6.4 Significant Wildlife Habitat

The potential presence of SWH on-site and within the Study Area was evaluated in Section 4.5. As a result of this assessment, four types of SWH were determined to be present on-site or within the Study Area; *candidate* waterfowl stopover and staging area (terrestrial), *candidate* marsh breeding bird habitat, *candidate* woodland amphibian breeding habitat, and *candidate* habitat of special concern and rare wildlife species.

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

6.4.1 *Candidate* Marsh Breeding Bird Habitat

Candidate marsh breeding bird significant wildlife habitat for green heron on-site is limited to the thicket swamp (ELC code: SWT). As no in-water work is anticipated as part of the project and given that suitable habitat occurs > 120 m of the proposed severances, no impacts to *candidate* marsh breeding bird habitat is anticipated as part of the project.

6.4.2 *Candidate* Turtle Nesting Areas

Candidate turtle nesting areas have been identified within the local wetlands (ELC code: SWT) and Bear Brook watercourse on-site.

Targeted turtle surveys were not conducted as part of the EIS. No evidence of turtle nesting, broken shells, or abandoned nests were observed during the site investigation. Additionally, the abundance of local wetlands within the greater study area may provide turtle nesting areas.

As no in-water work is proposed as part of the development and given the 120 m separation distance between local wetlands and the proposed severances, potential impacts to *candidate* turtle nesting areas are anticipated to be limited to indirect impacts to the Bear Brook watercourse. Potential indirect impacts to turtle nesting habitat within the Bear Brook include increases storm water generation and potentially increased nutrient loading.

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 mortality, particularly during the breeding season.

Mitigation measures to protect candidate turtle nesting area from the proposed development is provided in Section 7.

6.4.3 *Candidate* Woodland Amphibian Breeding Habitat

Candidate woodland amphibian breeding habitat has been identified within the on-site local wetlands and includes all forested habitats within a 230 m buffer.

As no in-water work is proposed as part of the development and given the 120 m separation distance between local wetlands and the proposed severances, potential impacts to *candidate* woodland amphibian breeding SWH are anticipated to be limited to direct and indirect impacts to woodlands.

Potential impacts to significant woodlands on-site may include a minor loss of forest habitat and increased human disturbance. However, severances are proposed to occur primarily within open habitat on-site (ELC codes: CVR_4, MEGM3-7, and MEMM4) and is anticipated to only require minor vegetation removal within forested areas. Furthermore, development is proposed to front to Russell Road, minimizing encroachment into the on-site woodlands. Further to this, given the nature of the proposed development, a single-family residential dwelling, and the surrounding existing rural development, impacts from increased human presence and disturbance are anticipated to be minimal.

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

6.4.4 Habitats of Special Concern and Rare Wildlife Species

Eastern Wood-Pewee

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

Impacts to eastern wood-pewee habitat may include the potential loss of up to 0.12 ha of forest habitat on-site and increased human interaction. While the proposed development will result in the loss of a portion of habitat on-site, 9.11 ha of significant woodlands will remain on the retained lands. The minor loss of trees and vegetation within the proposed development area is not anticipated to limit eastern wood-pewee habitat use and availability on-site.

Impacts from increased human presence are anticipated to be minimal given the existing rural development surrounding the subject property, and the availability of suitable habitat within the greater study area. Further, eastern wood-pewee have a preference for deciduous forests over coniferous; thus, woodlands in the study area may provide more preferable habitat for the eastern-wood pewee.

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

Evening Grosbeak

Impacts to evening grosbeak and their habitat on-site from the proposed development are limited to the forest habitat on-site that may provide suitable nesting and foraging habitat.

Impacts to evening grosbeak habitat may include the potential loss of up to 0.12 ha of forest habitat on-site and increased human interaction. While the proposed development will result in the loss of a portion of habitat on-site, 9.11 ha of significant woodlands will remain on the retained lands. The minor loss of trees and vegetation within the proposed development area is not anticipated to limit evening grosbeak habitat use and availability on-site.

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

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

Snapping Turtle

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

harvesting of adults, persecution and road mortality (COSEWIC, 2008). Other threats include loss of habitat, environmental contamination and nest predation (COSEWIC, 2008).

As no in-water work is proposed as part of the future development, potential impacts to snapping turtle and their habitat are anticipated to be indirect in nature. Potential indirect impacts may include changes to surface water quality and quantity through increased storm water runoff resulting from an increase in impervious surface area and vegetation loss. Other potential impacts include short duration construction impacts, including heavy machinery encroachment, fill placement and long-term human disturbance such as noise generation, dumping of refuse and yard waste and trampling.

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

6.5 Fish Habitat

According to the Provincial Planning Statement (MMAH, 2024), “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 new Fisheries Act states that work must avoid “the harmful alteration, disruption or destruction (HADD) of fish habitat” (Canada, 1985).

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

As discussed above, fish habitat has been identified within the Bear Brook watercourse and unnamed watercourses on-site. The Bear Brook occurs approximately 50 m northwest of proposed severance at its closest point, whereas the western unnamed watercourse traverses through proposed severance #1 and the southeastern watercourse traverses through proposed severance #2.

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

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.

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

6.6 Species at Risk

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

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

6.6.1 Eastern Small-footed Myotis

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

Although the forest on-site does not meet the requirements to support bat maternity colonies, given the availability of habitat and buildings on-site and within the study area, there is a potential for eastern small-footed myotis to occur on the property, primarily for foraging or non-maternal roosting. Specifically, the existing structures on-site may provide roosting habitat which has the potential to be impacted should demolition occur as part of the proposed project. Impacts to eastern small-footed myotis are primarily associated with habitat loss, encroachment and increased wildlife-human interaction.

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

6.6.2 Little Brown Myotis

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 on-site does not meet the requirements to support bat maternity colonies, given the availability of habitat and buildings on-site and within the study area, there is a potential for little brown myotis to occur on the property, primarily for foraging or non-maternal roosting. Specifically, the existing structures on-site may provide roosting habitat which has the potential to be impacted should demolition occur as part of the proposed project. Impacts to little brown myotis are primarily associated with habitat loss, encroachment and increased wildlife-human interaction.

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

6.6.3 Tri-colored Bat

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

Although the forest on-site does not meet the requirements to support bat maternity colonies, given the availability of habitat and buildings on-site and within the study area, there is a potential for tri-colored bat to occur on the property, primarily for foraging or non-maternal roosting. Specifically, the existing structures on-site may provide roosting habitat which has the potential to be impacted should demolition occur as part of the proposed project. Impacts to tri-colored bat are primarily associated with habitat loss, encroachment and increased wildlife-human interaction.

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

6.6.4 Blanding's Turtle

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, 2016a). 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, 2016a).

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

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

As regulated Blanding's turtle habitat extends up to 2 km from on observation, based conservatively on the NHIC observation data, all wetlands on-site are assumed to provide a minimum of Category 2, and Category 3 habitat. No Category 1 habitat has been confirmed as no nesting habitat has been identified on-site. Based on application of the MNRF general habitat description, Category 2 and 3 habitat occurs on-site.

No in-water work is anticipated as part of the proposed development; therefore, potential indirect impacts 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. This increase in storm water runoff and flow rates has the potential to result in increased sedimentation and erosion downstream.

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. The proposed severances have the potential to impact 0.46 ha of Category 2 habitat and 1.03 ha of Category 3 habitat on-site. Impacts to transient Blanding's turtles will be more likely during migratory and nesting 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.

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

6.7 Cumulative Impacts

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

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

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

7.0 RECOMMENDED AVOIDANCE AND MITIGATION MEASURES

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

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

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

7.1 Significant Woodlands

To ensure that clearing does not extend beyond what is required to accommodate a single-family dwelling, use of development envelopes is recommended. The proposed development envelopes are to be approximately 0.2 ha in size and are illustrated on Figure A.5 in Appendix A. This placement is conceptual in nature, the actual location of the envelope is to be determined by the proponent.

The development envelope is to be positioned in such a way as to front existing roadways, minimizing impacts on the integrity of contiguous significant woodlands. The placement ensures that the size, ecological functions, and social and economic values of the adjacent contiguous woodlands are not negatively impacted.

By registering the proposed development envelopes (one for each new lot) on the land title for the proposed development, the maximum loss of significant woodlands is reduced to 0 ha of the 9.23 ha (0%) of contiguous significant woodlands on-site.

Despite the removal of significant woodlands from the site, the contiguous significant woodlands within the remnant portions of the site, Study Area, and beyond, will retain all defining elements for which their significance is based. As such, direct impacts to significant woodlands SWH are not anticipated.

Further, given the nature of the proposed development, two single-family residential dwellings within a larger rural-residential area, it is not anticipated that the proposed development will increase human disturbance post-construction.

No negative impacts on the ecological function of the significant woodlands are anticipated as a result of this project if all mitigation measures and best management practices recommended below are adhered to.

7.2 Significant Wildlife Habitat

7.2.1 *Candidate* Turtle Nesting Areas

The 15 m watercourse setback provided below is sufficient to protect *candidate* turtle nesting area SWH associated with the watercourses and local wetlands on-site from negative impacts.

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.

7.2.2 *Candidate* Woodland Amphibian Breeding Habitat

The 0.2 ha development envelopes provided above for the protection of significant woodlands on-site, is sufficient to protect *candidate* woodland amphibian breeding habitat on-site. Using the prescribed construction envelopes, forest habitat loss on-site is reduced to 0 ha of the on-site 9.23 ha (0%).

To further mitigate impacts on migrating amphibians on-site, the proposed development will be encouraged to keep nature in mind in order to maximize woodland coverage. Maintaining woodland coverage, when possible, will provide ample opportunity for woodland dispersal and summer habitats within the built subject property and surrounding vacant lands.

In addition to the above mitigation measures, exclusion fencing should be installed around areas of active construction prior to construction commencing to prohibit the movement of amphibians into the construction area. Exclusion fencing should follow guidelines established in *Species at Risk Branch Best Practices Technical Note – Reptile and Amphibian Exclusion Fencing* (OMNRF, 2013b).

7.2.3 Habitats of Special Concern and Rare Wildlife Species

7.2.3.1 Eastern Wood-Pewee and Evening Grosbeak

To protect nesting and foraging eastern wood-pewee and evening grosbeak on-site, vegetation removal should occur outside of March 31 to August 31 to avoid the key breeding bird period as

identified by Environment Canada. If vegetation clearing activities must take place during the aforementioned timing window, then a nest survey shall be conducted by a qualified professional.

7.2.3.2 Snapping Turtle

The 15 m watercourse setback provided below is sufficient to protect *candidate* SWH for snapping turtle on-site from negative impacts.

Furthermore, the development envelopes ensure that woodlands associated with wildlife habitat, vegetation cover, and habitat surrounding the wetlands and on-site drainage feature is maintained, which is important for wildlife 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.

7.3 Fish Habitat

No negative impacts on the integrity of the watercourses on-site are anticipated as a result of the proposed development if all mitigation measures recommended below area enacted and best management practices followed. Watercourses can be protected against potential impacts of the proposed development through the implementation of a construction setback.

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

In consideration of watercourses on-site, a minimum 15 m setback from the watercourses top-of-bank is recommended. The recommended 15 m setback provides sufficient protection for mitigating water quality impacts and human disturbances. At 15 m, the protection the buffer offers for core habitat protection, falls into the moderate risk of not achieving desired buffer function, however, in conjunction with the prescribed development envelope as described below, development is not anticipated to negatively impact the core habitat functions of the watercourses.

As such, a 15 m setback is sufficient to protect the on-site watercourses. Setbacks are illustrated on Figure A.5 in Appendix A.

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

Any work that will include alteration, realignment or infilling of the Bear Brook watercourse or unnamed watercourses will require a permit from the South Nation Conservation Authority as well as a submittal of a Request for Review (RfR) to the Department of Fisheries and Oceans (DFO).

General mitigation measures recommended for the protection of water quality and local wetlands 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.
- No in-water work should occur between March 15 and June 30 of any year to protect spawning fish habitat adjacent to the development area. All in-water habitat features, including aquatic vegetation, natural woody debris and boulders should be left in their current locations.
- Silt fencing should be installed along all setbacks to provide visual demarcation of the setbacks to prevent machinery encroachment and sediment transport.
- When native soil is exposed, sediment and erosion control work in the form of heavy-duty sediment fencing shall be positioned along the down gradient edge of any construction envelopes adjacent to waterbodies.
- In order to protect fish habitat from contamination, it is recommended that all machinery be maintained in good working condition and that all machinery be fueled a minimum of 30 m from the high-water mark.
- Any temporary storage of aggregate material shall be set back from the water’s edge by no less than 40 m and be contained by heavy-duty silt fencing.

- 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.
- The development plan should include lot-side swales and/or roadside ditches designed to promote infiltration.
- Downspouts should be directed towards lot-side swales, soak-away pits, rain gardens or infiltration trenches.

7.4 Species at Risk

7.4.1 SAR Bats

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

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

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

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

Three additional bat species including eastern red bat (*Lasiurus borealis*), hoary bat (*Lasiurus cinereus*), and silver-haired bat (*Lasionycteris noctivagans*), are not currently listed under the ESA; however, are projected to be uplisted to endangered status as of 2025. At this time, it is anticipated that the avoidance and mitigation measures provided for eastern small-footed myotis, little brown myotis, and tri-colored bat will be sufficient for the uplisted bat species.

7.4.2 Blanding's Turtle

The proposed 0.2 ha development envelopes prescribed for the protection of significant woodlands above will ensure Category 3 habitat loss on-site is limited to 0.4 ha. This loss of Category 3 habitat is not anticipated to negatively impact the function of remaining Category 3

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

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

- Prior to any site work, reptile and amphibian temporary exclusion fencing should be installed around the entire perimeter of any active construction areas to prevent the migration of Blanding's Turtles and other wildlife into the construction zone. The exclusion fencing will also provide a visual demarcation of the development area for workers during construction. Exclusion fencing should follow the protocols outlined in the Species at Risk Branch: Best Practices Technical Note: Reptile and Amphibian Exclusion Fencing Version 1.1 (MNRF, July 2013).
- Each day of construction a daily pre-work sweep of the construction area should occur to ensure no SAR are present and to remove any wildlife from inside the construction area.
- All staff working on-site should be provided Species at Risk training to identify species at risk which a potential to occur on-site including: Blanding's turtle. Training will also outline the stop work procedures and MECP reporting/consultation prior to resuming work.
- During construction if any SAR is identified on-site all work should stop and a qualified professional and the MECP should be contacted for next steps. SAR sightings should be reported to the MECP and the NHIC.
- Tree clearing and vegetation removal will be undertaken outside of the active season for Blanding's turtles. Prior to vegetation removal a sweep will be completed to ensure Blanding's turtles are absent from the area.
- Cover all stockpiled material with a geotextile to prevent turtles from nesting in the material between May 1 and August 1 of any year.
- To protect aquatic habitat for Blanding's turtles, machinery should be maintained in good working condition and all machinery should be fueled a minimum of 30 m from the high water mark.
- Following construction completion, future property owners will be provided with information and awareness packages for SAR that have the potential to occur on their property. Information and awareness packages will include information on species identification, life-history, and habitat use for all species at risk with a potential to occur on-site, including Blanding's turtle. Information packages will also include contact/reporting options to the MECP and NHIC is species are encountered.
- Post-construction road awareness signs should be installed to alert neighbourhood drivers of potential turtle crossing, to reduce turtle road fatalities.

7.5 Wildlife

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

- Vegetation removal should occur outside of March 15 - November 30 to avoid the key breeding bird period and bat summer active season. The timing windows provides protection of migratory birds, roosting bats and avoids contravention of the Migratory Bird Convention Act and Endangered Species Act. If vegetation clearing activities must take place during the timing window than a nest and roost survey shall be conducted by a qualified professional.
- Installation of silt fence barriers around the entire construction envelope to prohibit the emigration of wildlife into the construction area.
- Cover all stockpiled material with a geotextile to prevent turtles from nesting in the material between May 1 and August 1 of any year.
- Perform daily pre-work sweeps of the construction area to ensure no SAR are present and to remove any wildlife from inside the construction area.
- Should any SAR be discovered throughout the course of the proposed works, the species at risk biologist with the local MECP district should be contacted immediately and operations modified to avoid any negative impacts to SAR or their habitat until further direction is provided by the MECP.

7.6 Best Practice Measures for Mitigation of Cumulative Impacts

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

- To protect trees identified to be retained during construction, the Critical Root Zone (CRZ) should be identified and fenced. The CRZ is defined as 10 cm from the base of the tree for every centimetre in diameter of the tree trunk measured at breast height.
- Maintain as much permeable surface as possible in future development plans to minimize the generation of stormwater runoff.
- Silt fencing should be installed along all setbacks to provide visual demarcation of the setbacks and to prevent machinery encroachment and sediment transport.
- Erosion and sediment control measures should be maintained until all disturbed ground has been permanently stabilized.
- In an effort to offset the effect of vegetation clearing, consideration should be given to landscape planting with native tree species indicative of the Great Lakes – St. Lawrence Forest Region, such as white cedar, white spruce, red maple, and red oak.

8.0 CONCLUSIONS

The proposed project supported by this EIS is for the severance of two parcels from an existing 18.03 ha property, municipally addressed as 6247 Russell Road, in Carlsbad Springs, City of Ottawa, Ontario. The proposed severance application would see the creation of two new lots, approximately 1.49 ha and 0.84 ha in size. The new lots are anticipated to have future development in the form of a single-family residential dwelling on each.

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

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

- No significant negative impacts to natural heritage features identified on-site, including local wetlands, significant woodlands, floodplain, significant wildlife habitat, fish habitat, and species at risk are anticipated from future residential development.
- The proposed project complies with the natural heritage policies of the Provincial Planning Statement.
- The proposed development complies with the natural heritage policies of the City of Ottawa Official Plan.

9.0 LIMITATION OF LIABILITY

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

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

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

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

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

Sincerely,

Emily Pentz, B.Sc.
Junior Biologist

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

10.0 REFERENCES

Beacon Environmental. 2012. Ecological Buffer Guideline Review – Prepared for Credit Valley

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

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

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

COSEWIC. 2016a. COSEWIC assessment and status report on the Blanding's Turtle *Emydoidea blandingii* Nova Scotia population and Great Lakes/St. Lawrence population in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. xix + 110 pp.

COSEWIC. 2016b. COSEWIC assessment and status report on the Evening Grosbeak Coccothraustes vespertinus in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. xi + 64 pp.

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

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

COSEWIC. 2008. COSEWIC assessment and status report on the Snapping Turtle Chelydra serpentina in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. vii + 47 pp.

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

Department of Fisheries and Oceans (DFO). 2019. Aquatic Species at Risk Map. Viewed online: October 2024. Available online: http://www.dfo-mpo.gc.ca/species-especes/sara-lep/map-carte/index-eng.html

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

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

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

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

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

Ontario, Government of (Ontario). 2019a. Eastern small-footed Myotis. Viewed online: October 2024. Available online: https://www.ontario.ca/page/eastern-small-footed-myotis

Ontario, Government of (Ontario). 2019b. Little Brown Myotis. Viewed online: October 2024. Available online: https://www.ontario.ca/page/little-brown-myotis

Ontario, Government of (Ontario). 2019c. Northern Myotis. Viewed online: October 2024. Available online: https://www.ontario.ca/page/northern-myotis

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

Ontario Legislative Assembly. 2007. Endangered Species Act.

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

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

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

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

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

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

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

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

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

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

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

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

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

Ontario Nature, 2019, Ontario Reptile and Amphibian Atlas. Viewed online: Viewed online October 2024. Available online: https://www.ontarioinsects.org/herp/index.html?Sort=1&area2=squaresCounties&records=all&myZoom=5&Lat=42.95&Long=-81.01

Ottawa, City of (Ottawa). Undated a. City of Ottawa Natural Landscape Linkage Analysis. Document 11.

Ottawa, City of (Ottawa). Undated b. Significant Woodlands: Guidelines for Identification, Evaluation, and Impact Assessment. Draft. Ottawa, City of (Ottawa). 2023, Environmental Impact Statement Guidelines – 3rd Edition. June.

Ottawa, City of (Ottawa). 2023a, Environmental Impact Statement Guidelines – 3rd Edition. June.

Ottawa, City of (Ottawa). 2022, City of Ottawa Official Plan.

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

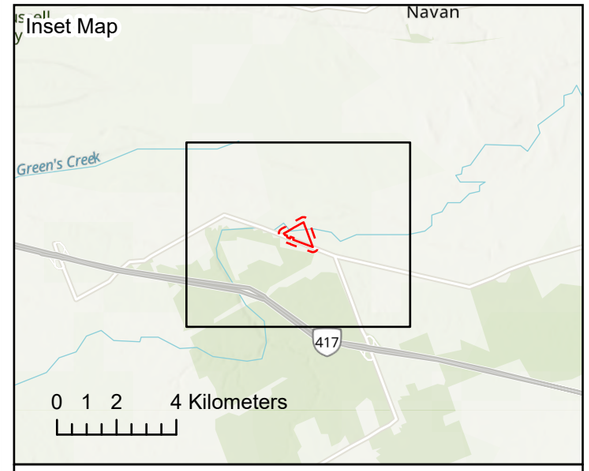
APPENDIX A

Report Figures

Figure A.1 – Site Location
Figure A.2 – Site Layout
Figure A.3 – Vegetation Communities
Figure A.4 – Natural Heritage Features
Figure A.5 – Mitigation Measures

Legend

- Property Boundary
- Study Area



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Client:	Project:
Ian Dupre	103610.001

Location
6247 Russell Road,
Ottawa, Ontario

Drwn By:	Chkd By:	
EP	ZA	Site Location
Date: February 2025	Rev. 0	Figure: A.1

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

Legend

- Property Boundary
- Study Area
- Proposed Severance
- Local Wetland (GeoOttawa)
- Watercourse

Scale
1:3,500
0 25 50 100 150 200 Meters

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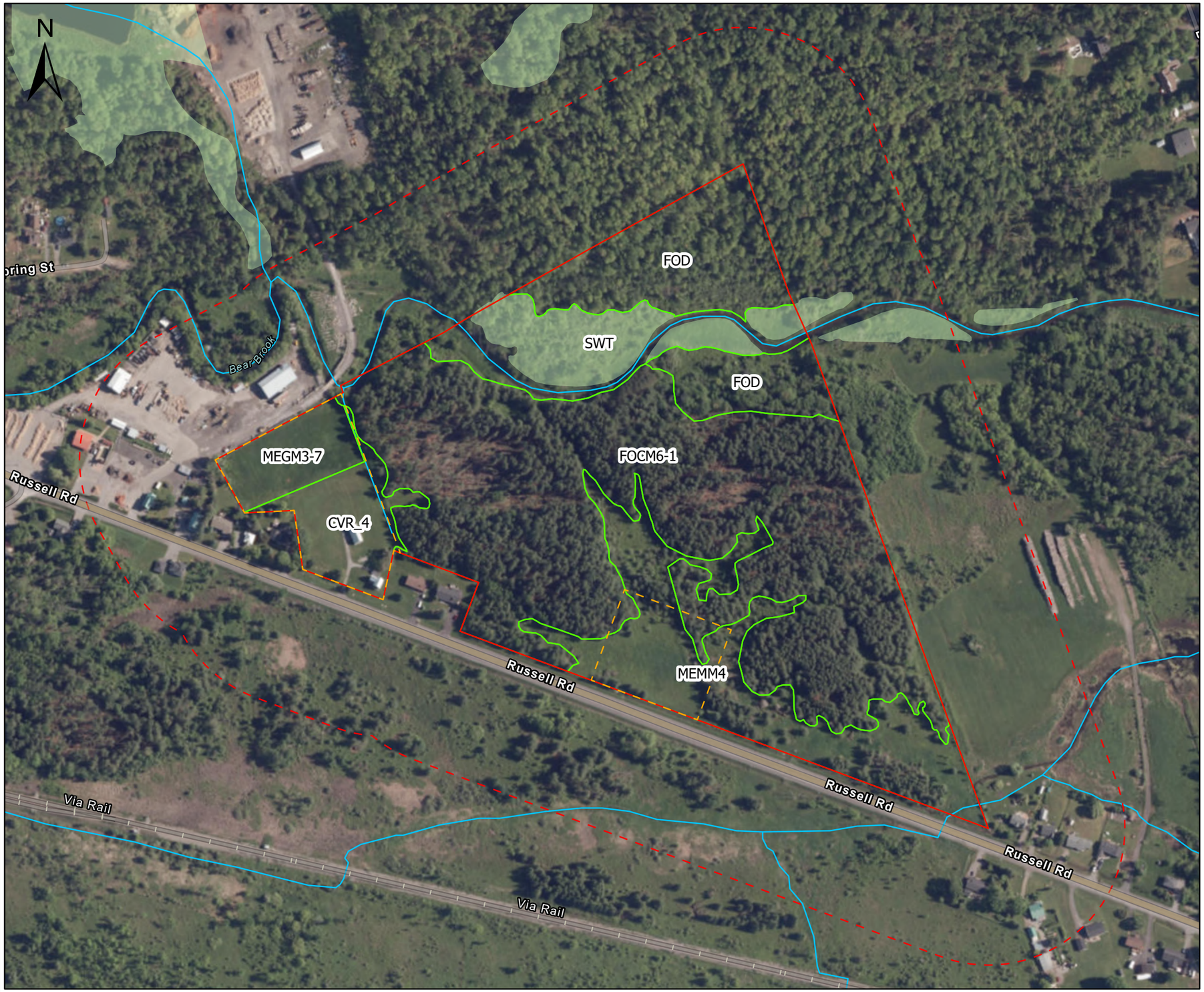
Client: Ian Dupre	Project: 103610.001
Location: 6247 Russell Road, Ottawa, Ontario	
Drwn By: EP / Chkd By: ZA	Site Layout
Date: February 2025	Rev. 0
	Figure: A.2

Coordinate System: NAD 1983 UTM Zone 18N
Service Layer Credits: City of Ottawa 2022 Imagery:
World Topographic Map: Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community



Legend

- Property Boundary
- Study Area
- Proposed Severance
- Local Wetland (GeoOttawa)
- Watercourse
- Vegetation Community

MEGM3-7 = Timothy Graminoid Meadow
MEMM4 = Fresh-Moist Mixed Meadow
SWT = Thicket Swamp
CVR_4 = Rural Residential
FOD = Deciduous Forest
FOCM6-1 = Dry - Fresh White Pine Naturalized Coniferous Plantation

Scale
1:3,500
0 25 50 100 150 200 Meters

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Location
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Ottawa, Ontario

Drwn By:	Chkd By:	
EP	ZA	Vegetation Communities

Date: February 2025	Rev.	
	0	Figure: A.3

Coordinate System: NAD 1983 UTM Zone 18N
Service Layer Credits: City of Ottawa 2022 Imagery:
World Topographic Map: Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community

Legend

- Property Boundary
- Study Area
- Proposed Severance
- Local Wetland (GeoOttawa)
- Watercourse
- 1:100 Year Floodplain
- Significant Woodlands
- Blanding's Turtle Category 2 Habitat (30 m)

Scale
1:3,250
0 25 50 100 150 200 Meters

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Location
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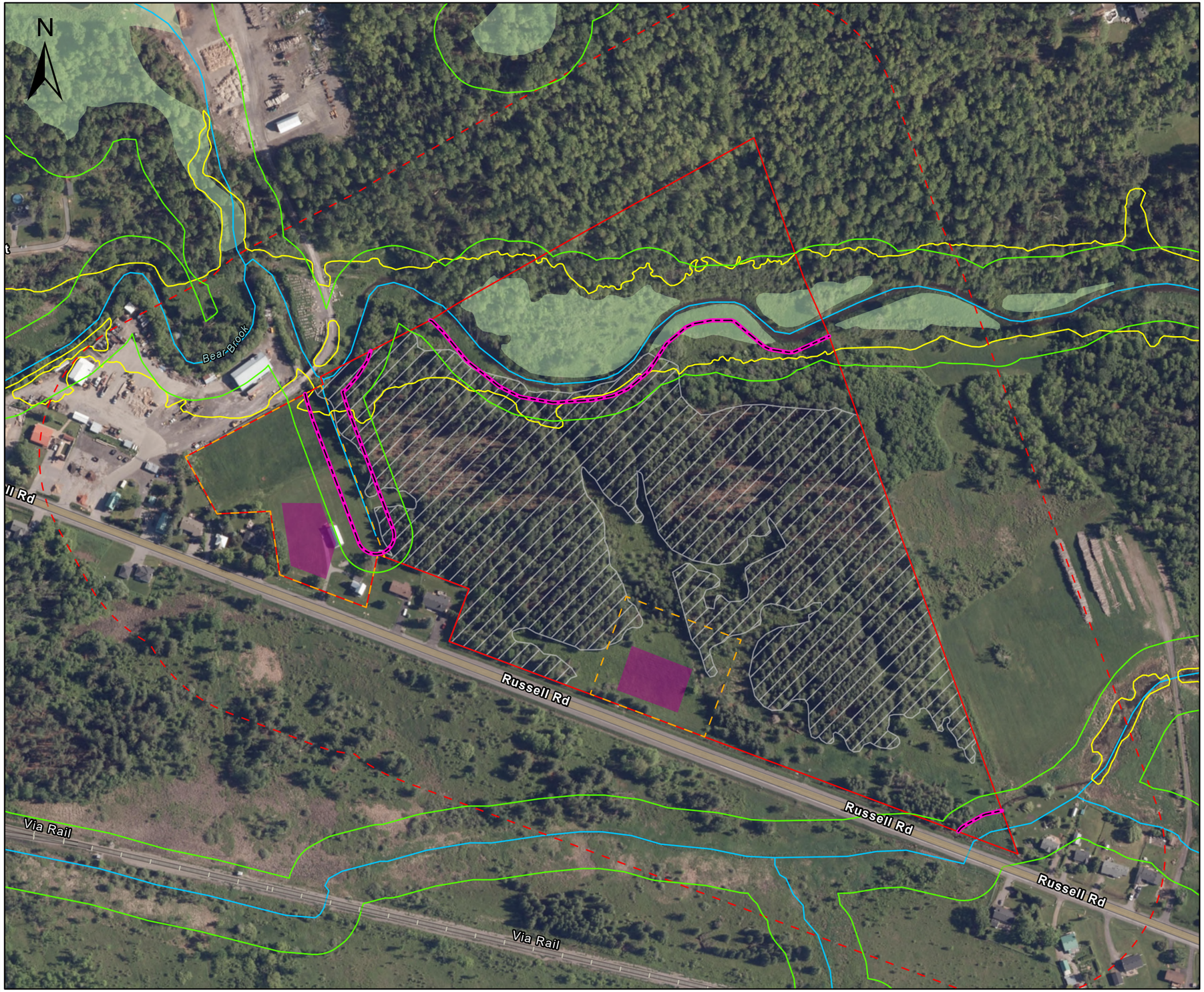
Ottawa, Ontario

Drwn By:	Chkd By:	
EP	ZA	Natural Heritage Features

Date: February 2025	Rev.	Figure: A.4
	0	

Coordinate System: NAD 1983 UTM Zone 18N
Service Layer Credits: City of Ottawa 2022 Imagery:
World Topographic Map: Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community



Legend

- Property Boundary
- Study Area
- Proposed Severance
- Local Wetland (GeoOttawa)
- Watercourse
- 1:100 Year Floodplain
- Significant Woodlands
- Blanding's Turtle Category 2 Habitat (30 m)
- Development Envelope (0.2 ha)
- 15 m Setback

Scale
1:3,250
0 25 50 100 150 200 Meters

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Location: 6247 Russell Road, Ottawa, Ontario

Drwn By: EP | Chkd By: ZA

Mitigation Measures

Date: February 2025

Rev. 0

Figure: A.5

Coordinate System: NAD 1983 UTM Zone 18N
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APPENDIX B

Site Photographs

Site Photograph 1: Rural Residential (CRV_4) property.

Site Photograph 2: Timothy Graminoid Meadow (MEGM3-7).

Site Photograph 3: Dry - Fresh White Pine Naturalized Coniferous Plantation (FOCM6-1).

Site Photograph 4: Fresh-Moist Mixed Meadow (MEMM4).

Site Photograph 5: Thicket Swamp (SWT) and Deciduous Forest (FOD).

Site Photograph 6: The Bear Brook watercourse.

Site Photograph 7: North of the Bear Brook watercourse.

Site Photograph 8: Unnamed watercourse on-site.

APPENDIX C

Report Summary Tables

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

Common Name	Scientific Name	S-Rank	Evidence
Avian Species			
American goldfinch	*Spinus tristis*	S5	Heard calling
Blue jay	*Cyanocitta cristata*	S5	Heard calling
Killdeer	*Charadrius vociferus*	S4B	Heard calling
Mourning dove	*Zenaida macroura*	S5	Heard calling
Song sparrow	*Melospiza melodia*	S5	Heard calling
Amphibian Species			
Green frog	*Lithobates clamitans*	S5	Observed on-site

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

TABLE C.2
SCREENING RATIONAL FOR SIGNIFICANT WOODLANDS

Woodland Criteria	Further Considered in EIS	Rationale
Woodland Size	No	Woodlands on-site do not contribute to contiguous woodlands, meeting the minimum size requirement for the planning area (> 20 ha).
Ecological Functions		
a) Woodland Interior	No	Woodlands on-site do not contribute to contiguous interior woodlands meeting the minimum size requirement for the planning area (> 2 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 do provide linkages to other natural heritage features.
d) Water Protection	Yes	Woodlands on-site are proximate to fish habitat and meet minimum size threshold requirements.
e) Diversity	No	No woodlands on-site to represent species composition of the landscape and no rare species communities were observed on-site.
Uncommon Characteristics	No	No woodlands on-site to contain unique species composition, vegetation communities with a ranking of S1, S2 or S3, or a mature size structure.
Economical and Social Functional Values	No	No woodlands on-site to 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 habitat on-site to support waterfowl stopover and staging areas.
Shorebird Migratory Stopover Area	No	Shorebird stopover sites are typically well-known and have a long history of use. The site does not contain suitable shoreline habitat for shorebird foraging.
Raptor Wintering Area	No	The site does not contain both forest and upland habitat, and does not meet the candidate habitat criteria to support raptor wintering area.
Bat Hibernacula	No	Cave and crevice habitat is not present on-site or within the study area.
Bat Maternity Colonies	No	No woodland habitat on-site to meet the minimum snag density (>10 snags/hectare) requirement for bat maternity colonies.
Turtle Wintering Area	No	No aquatic habitat with suitable water depths on-site to support turtle wintering areas.
Reptile Hibernaculum	No	No structures such as large rock piles, bedrock outcrops, cervices or other karstic features have been identified on-site.
Colonial Bird Nesting Habitat	No	No suitable habitat located on-site or within the study area to support colonial bird nesting.
Migratory Butterfly Stopover Area	No	The site is not located within 5 km of Lake Ontario and therefore does not meet the defining criteria.
Landbird Migratory Stopver Area	No	The site is not located within 5 km of Lake Ontario and therefore does not meet the defining criteria.
Deer Yarding Areas and Winter Congregation Areas	No	As outlined in the the Signficant Wildlife Habitat Criteria Schedules (OMNRF, 2015) winter deer yards and deer managment are an MNRF responsibility. Based on review of publically available data from the OMNRF on Land Information Ontario Geo-hub, no Stratum I deer yards, Stratum II deer yards, or winter congregation areas have been identified on-site or within the broader study area. The closest deer yard to site is a patch of Stratum 2 deer yard located approximately 6.5 km to the northeast.

TABLE C.4
SCREENING RATIONALE FOR SPECIALIZED WILDLIFE HABITATS

Specialized Wildlife Habitat	Further Considered in EIS	Rationale
Waterfowl Nesting Area	No	No suitable updland habitat adjacent to the wetland on-site to support waterfowl nesting areas.
Bald Eagle and Osprey Nesting, Foraging and Perching Habitat	No	No suitable habitat is located on-site or within the study area to support bald eagles or osprey. Nesting sites for these species are uncommon in Ecoregion 6E (MNRF, 2012).
Woodland Nesting Raptor Habitat	No	Nesting may occur in any ecosite and species preference is towards mature forest stands >30 ha with >10 ha of interior habitat with a 200 m buffer. Contiguous forest stands >30 ha are present on-site however, interior forest habitat >10 ha with a 200 m buffer is not present on-site. A stick nest was observed on-site.
Turtle Nesting Habitat	Yes	Suitable habitat (exposed mineral soil with minimal vegetation cover) was observed on-site during field investigation.
Seeps and Springs	No	No seeps or springs where identified on-site.
Woodland Amphibian Breeding Habitat	Yes	Suitable wetland habitat within or adjacent to a woodland occurs on-site to support woodland amphibian breeding habitat.
Wetland Amphibian Breeding Habitat	No	No suitable wetland habitat occurs on-site to support wetland amphibian breeding habitat.
Woodland Area-Sensitive Bird Breeding Habitat	No	Woodland area-sensitive birds require interior forest habitat located >200 m from the forest edge in large (>30 ha) forest stands. Woodlands on-site and adjacent to the site do not meet the defining criteria for interior forest habitat.

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

General Habitats of Species of Conservation Concern	Further Considered in EIS	Rationale
Marsh Breeding Bird Habitat	Yes	Suitable wetland habitat (ELC code SWT) present on-site to support marsh breeding bird habitat for green heron. No other habitat for listed species occurs within the study area.
Open Country Breeding Bird Habitat	No	No meadow habitat >30 ha occurs on-site to support open country breeding bird habitat.
Shrub/Early Successional Breeding Bird Habitat	No	Candidate early successional breeding bird habitat typically includes fallow fields transitioning to early successional forest habitats that are >10 ha but have not been actively used for farming. No thicket habitat on-site to support early successional breeding bird habitat.
Terrestrial Crayfish Habitat	No	Terrestrial crayfish are only found within southwestern Ontario (MNRF, 2012).
Special Concern and Rare Wildlife Species	Yes	Based on site observations and occurrence data from the NHIC and Ontario Breeding Bird Atlas, the following species of special concern have occurred on-site and/or within the surrounding area: eastern wood-pewee, evening grosbeak and snapping turtle.

TABLE C.6
SCREENING RATIONALE FOR ANIMAL MOVEMENT CORRIDORS

Animal Movement Corridor	Further Considered in EIS	Rationale
Amphibian Movement Corridor	No	No confirmed amphibian movement corridors have been identified on-site.
Deer Movement Corridor	No	No winter deer yards have been identified on-site.

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

Species	ESA Status	Habitat Use	Probability of Occurrence On-Site or Within Study Area	Rationale
Avian				
Bank Swallow	Threatened	Colonial nester, burrows in eroding silt, to sand banks, sand pit walls, etc.	Low	Site lacks suitable habitat for nesting. No historical occurrence for the species, nor was it observed on-site.
Barn Swallow	Special Concern	Nests in barns and other semi-open structures. Forages over open fields and meadows.	Low	Site lacks suitable habitat. No historical occurrences for the species, nor was it observed on-site.
Bobolink	Threatened	Nests in dense tall grass fields and meadows, low tolerance for woody vegetation.	Low	The NHIC database provides historical occurrence data for the species within 1km of the property; however likely associated with nearby fields. Site lacks suitable habitat. Species not observed on-site.
Canada Warbler	Special Concern	Prefers wet forests with dense shrub layers	Low	Site lacks suitable habitat. No historical occurrences for the species, nor was it observed on-site.
Cerulean Warbler	Threatened	Prefers mature deciduous forest habitat.	Low	Site lacks suitable habitat. No historical occurrences for the species, nor was it observed on-site.
Chimney Swift	Threatened	Nests in traditional-style open brick chimneys.	Low	Site lacks suitable habitat. No historical occurrences for the species, nor was it observed on-site.
Common Nighthawk	Special Concern	Nests in a variety of open sites: beaches, fields and grave rooftops.	Low	Site lacks suitable habitat. No historical occurrences for the species, nor was it observed on-site.
Eastern Meadowlark	Threatened	Nests and forages in dense tall grass fields and meadows, higher tolerance to woody vegetation.	Low	The NHIC database provides historical occurrence data for the species within 1km of the property; however likely associated with nearby fields. Site lacks suitable habitat. Species not observed on-site.
Eastern Whip-poor-will	Threatened	Nests on the ground in open deciduous or mixed woodlands with little underbrush, and bedrock outcrops.	Low	Site lacks suitable habitat. No historical occurrences for the species, nor was it observed on-site.
Eastern Wood-Pewee	Special Concern	Woodland species, often found near clearings and edge habitat.	Moderate	The NHIC database provides historical occurrence data for the species within 2km of the property. Suitable habitat may be present on-site. Species not observed on-site.
Evening Grosbeak	Special Concern	Nests in trees or large shrubs, preference to large coniferous forests, will use deciduous. Overwinters in Ottawa.	Low	The NHIC database provides historical occurrence data for the species within 2km of the property; however site lacks suitable habitat. Species not observed on-site.
Golden Eagle	Endangered	Nests on remote, bedrock cliffs, overlooking large burns, lakes or tundras	Low	Site lacks suitable habitat. No historical occurrences for the species, nor was it observed on-site.
Golden-winged Warbler	Special Concern	Ground nesting, edge species. Breeds in successional scrub habitats surrounded by forests.	Low	Site lacks suitable habitat. No historical occurrences for the species, nor was it observed on-site.
Grasshopper Sparrow	Special Concern	Ground-nesting grassland species. Prefers fields with low sparse vegetation on sand, alvars or poor soils.	Low	Site lacks suitable habitat. No historical occurrences for the species, nor was it observed on-site.
Henslow's Sparrow	Endangered	Prefers open, moist, tallgrass fields.	Low	The NHIC database provides historical occurrence data for the species within 2km of the property; however site lacks suitable habitat. Species not observed on-site.
Least Bittern	Threatened	Prefers marshes, shrub swamps, usually near cattails	Low	Site lacks suitable habitat. No historical occurrences for the species, nor was it observed on-site.
Loggerhead Shrike	Endangered	Prefers grazed pastures with short grass and scattered shrubs, especially hawthorn.	Low	Site lacks suitable habitat. No historical occurrences for the species, nor was it observed on-site.
Olive-sided Flycatcher	Special Concern	Forest edge species, forages in open areas from high vantage points in trees.	Low	Site lacks suitable habitat. No historical occurrences for the species, nor was it observed on-site.
Peregrine Falcon	Special Concern	Nests on cliffs near water and on more anthropogenic structures such as tall buildings, bridges, and smokestacks.	Low	Site lacks suitable habitat. No historical occurrences for the species, nor was it observed on-site.
Red-headed Woodpecker	Endangered	Prefers open deciduous woodlands, particularly those dominated by oak and beech.	Low	Site lacks suitable habitat. No historical occurrences for the species, nor was it observed on-site.
Rusty Blackbird	Special Concern	Wet wooded or shrubby areas (nests at edges of Boreal wetlands)	Low	Site lacks suitable habitat. No historical occurrences for the species, nor was it observed on-site.
Short-eared Owl	Threatened	Ground nester, prefers open habitats, fields and marshes.	Low	Site lacks suitable habitat. No historical occurrences for the species, nor was it observed on-site.
Wood Thrush	Special Concern	Prefers deciduous or mixed woodlands.	Low	Site lacks suitable habitat. No historical occurrences for the species, nor was it observed on-site.
Mammalian				

Eastern small-footed Myotis	Endangered	Roosts in rock crevices, barns and sheds. Overwinters in abandoned mines. Summer habitats are poorly understood in Ontario, elsewhere prefers to roost in open, sunny rocky habitat and occasionally in buildings (Humphrey, 2017).	Moderate	Potentially suitable anthropogenic structures adjacent to site. Available forest habitat on-site may meet bat maternity colony requirements and provide foraging and non-maternal roost habitat.
Little Brown Myotis	Endangered	Maternal colonies known to use buildings, may also roost in trees during summer. Affinity towards anthropogenic structures for summer roosting habitat and exhibit high site fidelity (Environment Canada, 2015).	Moderate	Potentially suitable anthropogenic structures adjacent to site. Available forest habitat on-site may meet bat maternity colony requirements and provide foraging and non-maternal roost habitat.
Northern myotis (Northern Long-eared Bat)	Endangered	Occurs throughout eastern North America in associated with Boreal forests. Roosts mainly in trees, occasionally anthropogenic structures during summer (Environment Canada, 2015). Overwinters in caves and abandoned mines.	Low	Species affinity is for Boreal forests and rarely roosts in anthropogenic structures.
Tri-colored Bat	Endangered	Roosts in trees, rock crevices and occasionally buildings during summer. Overwinters in caves and mines.	Moderate	Potentially suitable anthropogenic structures adjacent to site. Available forest habitat on-site may meet bat maternity colony requirements and provide foraging and non-maternal roost habitat.
Reptilian				
Blanding's Turtle	Threatened	Inhabits quiet lakes, streams and wetlands with abundant emergent vegetation. Frequently occurs in adjacent upland forests.	Moderate	Suitable habitat may be present within the study area for the species. The NHIC database indicates historical occurrences for the species within 2km of the site. Species not observed during the site investigation..
Eastern Musk Turtle	Special Concern	Wetlands. Highly aquatic habtiats.	Low	No suitable habitat for the species on-site. No historical occurrences have been recorded for the species within the study area.
Eastern Ribbonsnake	Special Concern	Marshy edfes of wetlands and watercourses.	Low	No suitable habitat for the species on-site. No historical occurrences have been recorded for the species within the study area.
Northern Map Turtle	Special Concern	Highly aquatic species, found only in lakes and large rivers.	Low	No suitable habitat for the species on-site. No historical occurrences have been recorded for the species within the study area.
Snapping Turtle	Special Concern	Highly aquatic species, found in a wide variety of wetlands, water bodies and watercourses.	Moderate	Suitable habitat may be present within the study area for the species. The NHIC database indicates historical occurrences for the species within 1km of the site. Species not observed during the site investigation..
Spotted Turtle	Endangered	Secretive wetland species.	Low	No suitable habitat for the species on-site. No historical occurrences have been recorded for the species within the study area.
Wood Turtle	Endangered	Primarily terrestrial forest species. Associated with clear, gravelly streams.	Low	No suitable habitat for the species on-site. No historical occurrences have been recorded for the species within the study area.
Plants				
American Ginseng	Endangered	Rich, moist, relatively mature deciduous forests.	Low	No suitable habitat on-site.
Black Ash	Endangered	Predominantly a wetland species, found in swamps, floodplains and fens.	Low	The NHIC database indicates historical occurrences for the species within 2km of the site. Species not observed during the site investigation.. Suitable habitat may be present north of Bear Brook.
Butternut	Endangered	Inhabits a wide range of habitats including upland and lowland deciduous and mixed forests.	Low	The NHIC database indicates historical occurrences for the species within 2km of the site. Species not observed during the site investigation.
Lichens				
Pale-bellied Frost Lichen	Endangered	Grows on the bark of hardwood trees such as white ash, black walnut, American elm and ironwood. Can also be found growing on fence posts and boulders.	Low	Species believed to be extirpated from the Ottawa area.
Fish				
American Eel	Endangered	Primarily nocturnal, hiding in soft substrate or submerged vegetation during the day.	Low	Surface water fetaures on-site and within the study area are unlikely to provide suitable aquatic habitat. No historical occurrences are recorded for the species within the study area.
Bridle Shiner	Special Concern	Prefers clear water with abundant vegetation over silty or sandy vegetation	Low	Surface water fetaures on-site and within the study area are unlikely to provide suitable aquatic habitat. No historical occurrences are recorded for the species within the study area.
Channel Darter	Special Concern	Prefers clear water with abundant vegetation over silty or sandy vegetation	Low	Surface water fetaures on-site and within the study area are unlikely to provide suitable aquatic habitat. No historical occurrences are recorded for the species within the study area.

APPENDIX D

MNRF General Habitat Descriptions –
Blanding's Turtle

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

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

HABITAT CATEGORIZATION

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

Category 1

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

Nesting Sites

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

Overwintering Sites

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

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

Category 2

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

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

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

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

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

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

Category 3

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

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

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

Activities in Blanding's Turtle habitat

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

Generally compatible:

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

Generally not compatible:*

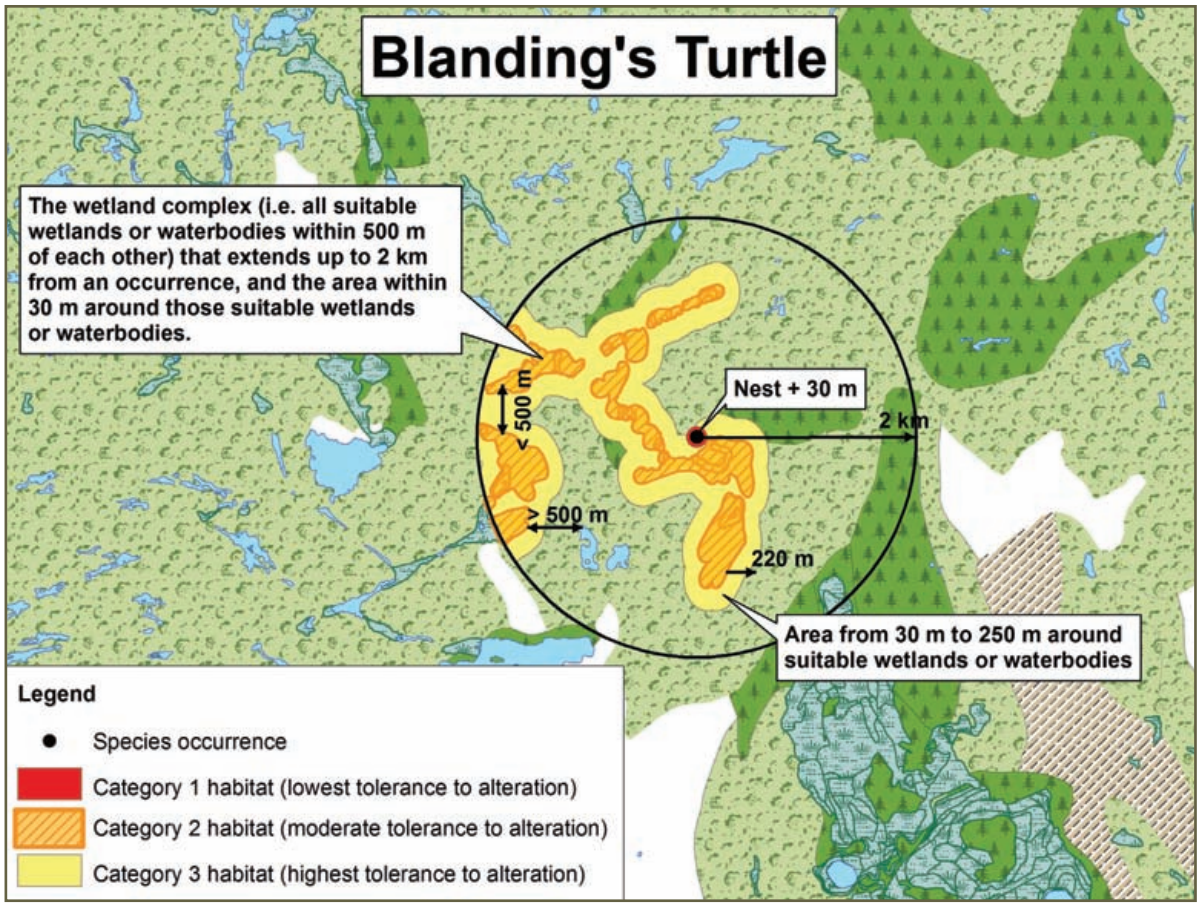
- Significant draining, infilling, dredging, or other significant alteration of wetlands or other suitable waterbodies.
- Significant alteration of shorelines, especially hardening (e.g. the use of gabion baskets, rip-rap, and rock armour).

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

Key terms:

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

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



References

Beaudry, F., P.G. DeMaynadier and M.L. Hunter Jr. 2010. Nesting movements and the use of anthropogenic nesting sites by Spotted Turtle (*Clemmys guttata*) and Blanding's Turtle (*Emydoidea blandingii*). Herpetological Conservation and Biology 5 (1): 1-8

Cameron, G. 2013. Unpublished data. Species at Risk Biologist, Ontario Ministry of Natural Resources.

Caverhill, B.P. 2006. Blanding's turtle conservation in Nova Scotia: linking science and stewardship through public education. M.Sc. thesis, Department of Biology, Acadia University, Wolfville, N.S.

Congdon, J.D., D.W. Twinkle, G.L. Breitenbach and R.C. Van Loben Sels. 1983. Nesting ecology and hatching success in the turtle *Emydoidea blandingii*. Herpetologica 39(4):417-429.

Congdon, J.D., Graham, T.E., Herman, T.B., Lang, J.W., Pappas, M.J., and Brecke, B.J. 2008. *Emydoidea blandingii* (Holbrook 1838) – Blanding's Turtle. In: Rhodin, A.G.J., Pritchard, P.C.H., van Dijk, P.P., Saumure, R.A., Buhlmann, K.A., and Iverson, J.B. (Eds.). Conservation Biology of Freshwater Turtles and Tortoises: A Compilation Project of the IUCN/SSC Tortoise and Freshwater Turtle Specialist Group. Chelonian Research Monographs No. 5, pp. 015.1-015.12, doi:10.3854/crm.5.015. blandingii.v12008, *http://www.iucn-tftsg.org/cbftt/*.

Congdon, J.D., O.M. Kinney and R.D. Nagle. 2011. Spatial ecology and core-area protection of Blanding's Turtle (*Emydoidea blandingii*). Canadian Journal of Zoology 89: 1098-1106

COSEWIC 2005. COSEWIC assessment and update status report on the Blanding's Turtle *Emydoidea blandingii* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. 32 pp.

Davy, C. 2011. Unpublished data from survey and monitoring work at Rondeau Provincial Park. University of Toronto, Ontario.

Dowling, Z. Hartwig, T. Kiviat, E. and Keesing, F. 2010. Experimental Management of Nesting Habitat for Blanding's Turtle (*Emydoidea blandingii*). Ecological Restoration 28:2.

Edge, C.B., Steinberg, B.D., Brooks, R.J., and Litzgus, J.D. 2010. Habitat Selection by Blanding's Turtles (*Emydoidea blandingii*) in relatively pristine landscape. Ecoscience 17(1):90-99.

Edge, C.B., Steinberg, B.D., Brooks, R.J., and Litzgus, J.D. 2009. Temperature and site selection by Blanding's Turtles (*Emydoidea blandingii*) during hibernation near the species northern range. Canadian Journal of Zoology 87:825-834.

Edge, C.B. 2013 Unpublished data from MSc. Research in Algonquin Provincial Park, Ontario.

Gillingwater, S. D. 2001. A Selective Herpetofaunal Survey Inventory and Biological Research Study of Rondeau Provincial Park. Report submitted to ESRF, World Wildlife Fund. 94 pp.

Gillingwater, S.D. 2013. Unpublished data from long-term survey and monitoring work provided through e-mail correspondence to Joe Crowley. Species at Risk Biologist, Upper Thames River Conservation Authority.

Gillingwater, S.D. and T.J. Piraino. 2004. Chelonian Survey and Research Study of the Big Creek National Wildlife Area (2003) and Selective Herpetofaunal Survey, Inventory and Research Study of the Long Point National Wildlife Area (1996-1999, 2003). Final report submitted to the Canadian Wildlife Service. 65+pp.

Gillingwater, SD and TJ Piraino. 2007. Turtle Research and Herpetofaunal Survey of the Long Point National Wildlife Area Update Report 2007. Report submitted to Canadian Wildlife Service

Joyal, L.A., M. McCollough and M.L. Hunter Jr. 2001. Landscape ecology approaches to wetland species conservation: a case study of two turtle species in southern Maine. Conservation Biology 15(6): 1755-1762

Kiviat, E., G. Stevens, R. Brauman, S. Hoeger, P.J. Petokas and G.G. Hollands. 2000. Restoration of wetland and upland habitat for the Blanding's turtle, *Emydoidea blandingii*. Chelonian Conservation Biology 3:650-657.

Natural Heritage Information Centre (NHIC). 2013. Biodiversity Explorer: Species Lists, Element Occurrence and Natural Areas databases. Natural Heritage Information Centre, Ontario Ministry of Natural Resources, Peterborough, Ontario.

Newton, E.J. and Herman, T.B. 2009. Habitat, movements, and behaviour of overwintering Blanding's Turtles (*Emydoidea blandingii*) in Nova Scotia. Canadian Journal of Zoology 87:299-309.

OMNR. 2010. Forest Management Guide for Conserving Biodiversity at the Stand and Site Scales. Toronto: Queen's Printer for Ontario. 211 pp.

Paterson, J. 2013. Unpublished data from M.Sc. research. Laurentian University, Sudbury, Ontario.

Paterson, J.E., B.D. Steinberg and J.D. Litzgus. 2012. Revealing a cryptic life-history stage: difference in habitat selection and survivorship between hatchlings of two turtle species at risk (*Glyptemys insculpta* and *Emydoidea blandingii*).

Power, T. 1989. Seasonal movements and nesting ecology of a relict population of Blanding's turtle (*Emydoidea blandingii* (Holbrook)) in Nova Scotia. M.Sc. thesis, Department of Biology, Acadia University, Wolfville, N.S.

Piepgras, S. A., and J. W. Lang. 2000. Spatial ecology of Blanding's Turtle in central Minnesota. Chelonian Conservation and Biology 3(4):589-601.

Refsnider, J.M. and M. H. Linck. 2012. Habitat use and movement patterns of Blanding's Turtles (*Emydoidea blandingii*) in Minnesota, USA: a landscape approach to species conservation. Herpetological Conservation and Biology 7(2): 185-192.

Ross, D.A. and R.K. Anderson. 1990. Habitat use, movements, and nesting of *Emydoidea blandingii* in central Wisconsin. Journal of Herpetology 24:6-12.

Rouse, J. 2013. Unpublished data. Species at Risk Biologist, Ontario Ministry of Natural Resources.

Seburn, D.C. 2010. Blanding's Turtle, *Emydoidea blandingii*, Habitat Use During Hibernation in Eastern Ontario. The Canadian Field-Naturalist 124(3): 263-265.

Standing, K.L., T.B. Herman and I.P. Morrison. 1999. Nesting ecology of Blanding's turtle (*Emydoidea blandingii*) in Nova Scotia, the northeastern limit of the specie's range. Canadian Journal of Zoology 77:1609-1614.

experience • knowledge • integrity

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

expérience • connaissance • intégrité