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Environmental Impact Statement
Proposed Land Severance Application
7063 Malakoff Road
Ottawa, Ontario

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Submitted to:

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Project: 100011.092

EXECUTIVE SUMMARY

GEMTEC Consulting Engineers and Scientists Limited (GEMTEC) was retained by Novatech (the Proponent) to complete an Environmental Impact Statement (EIS) for the property municipally addressed as 7063 Malakoff Road, in the Geographic Township of Marlborough, Ottawa, Ontario. This EIS has been completed in support of a proposed land severance application to permit future residential development and was completed in accordance with all federal, provincial and municipal policies and guidelines, as applicable.

In support of this EIS, a desktop review and multiple field investigations were completed to identify the presence or absence of natural heritage features and species at risk (SAR) on-site. Field investigations were completed in spring and summer 2024. The focus of the field investigations were to describe, in general, the natural and physical setting of the subject property with a focus on confirming the presence or absence of natural heritage features and potential SAR or their habitat as identified in the desktop review.

Following completion of the desktop review and field investigations the following natural heritage features were identified on-site or within the study area: local wetlands, significant woodlands, significant wildlife habitat for raptor wintering area (*candidate*), bat maternity colonies (*candidate*), woodland raptor nesting habitat (confirmed), woodland amphibian breeding habitat (*candidate*), woodland area-sensitive bird breeding habitat (confirmed) and special concern and rare wildlife habitat (eastern wood-pewee, wood thrush and snapping turtle). The following SAR and their habitat were identified as having a potential to occur on-site: bobolink, eastern meadowlark, eastern small-foot myotis, little brown myotis, tri-colored bat, Blanding's turtle and black ash. Regulated Category 1, 2 and 3 habitat was identified on-site for eastern meadowlark. Regulated Category 2 and 3 habitat was identified on-site for Blanding's turtle. Black ash trees were observed on-site during the field investigations.

No in-water work is anticipated as part of the proposed severances or future developments. Potential impacts to the natural heritage features are primarily associated with the loss of forest habitat, the loss of significant wildlife and species at risk regulated habitat and indirect impacts to local wetlands and fish habitat.

Blanding's turtle habitat impacted by the proposed development includes the loss of approximately 1 ha of Category 3 habitat on-site. Additionally, a 30 m setback from black ash trees on-site is proposed. Provided avoidance and mitigation measures outlined in Section 7 are implemented no further consultation is required to address impacts to Blanding's turtle and black ash habitat.

Impacts to significant woodlands and SWH can be mitigated through the implementation of 0.5 ha development envelopes for each of the proposed severances. Potential indirect impacts to

local unevaluated wetlands and fish habitat can be mitigated through a 30 meter (m) development setback from all wetlands and watercourses.

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

The proposed project complies with the natural heritage policies of the Provincial Policy Statement and the City of Ottawa Official Plan. No significant residual negative impacts to identified natural heritage features or their ecological functions are anticipated because 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

GEMTEC Consulting Engineers and Scientists Limited (GEMTEC) was retained by Novatech (the Proponent) to assist with a proposed severance application for a 47.63 ha parcel located on Part Lot 6, Concession 3 in the Township of Marlborough, Ottawa, ON (the Project).

In support of the Project, an Environmental Impact Statement (EIS) was prepared to identify and evaluate existing natural heritage features, assess the impacts of the Project on the natural environment, and provide environmental management recommendations in accordance with the City of Ottawa Official Plan (Ottawa 2021).

1.1 Physical Setting

The Study Area includes the 47.63 ha subject property and lands within 120 m of the property. The subject property is municipally addressed as 7063 Malakoff Road and contains an existing rural residential dwelling. Vegetation within the lot is comprised of open agriculture, cultural meadow, deciduous, mixed and coniferous forest, deciduous woodland and mixed swamp. The Study Area is bound to the north by Mackey Road, to the east by 2932 Mackey Road, to the west by Malakoff Road, and to the south by 7237 Malakoff Road. The extent of the Study Area is illustrated on Figure A.1 in Appendix A.

The Study Area is situated within a broader rural residential and agricultural land use area. The existing land use designation for the Study Area from the Official Plan (Ottawa, 2021) is Rural Countryside and the zoning is Rural (RU).

1.2 Project Intent and EIS Objectives

The intent of the Project is to sever a portion of the existing 47.63 ha subject property to support the future construction of two single-family residential developments on the two severed parcels (Appendix A – Figure A.2). Based on Section 5 of the Transects – City of Ottawa Official Plan (Ottawa, 2021) an EIS is required showing that the proposed severance will not negatively impact any potential natural heritage features which may be present within the study area.

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

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

- Provincial Planning Statement (MMAH, 2024);

- Endangered Species Act (Ontario, 2007);
- Conservation Authorities Act (Ontario, 1990);
- Natural Heritage Reference Manual (OMNR, 2010); and
- City of Ottawa Official Plan (Ottawa, 2021).

2.0 METHODOLOGY

2.1 Desktop Review

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

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

- Make A Map: Natural Heritage Areas (OMNRF, 2022a);
- Land Information Ontario (OMNR, 2011);
- City of Ottawa Official Plan (Ottawa, 2021);
- Geo Ottawa (Ottawa, 2023);
- Ontario Geological Survey (OGS, 2019);
- Natural Heritage Information Centre Biodiversity Explorer (OMNRF, 2022b);
- Breeding Bird Atlas of Ontario (Cadman et al., 2007)
- Ontario Herpetofaunal Atlas (Oldham and Weller, 2000);
- Wildlife Values Area (OMNRF, 2023a);
- Wildlife Values Site (OMNRF, 2023b);
- Rideau Valley Conservation Authority Geoportal (RVCA, 2023); and
- Ontario Reptile and Amphibian Atlas (Ontario Nature, 2019).

2.2 Field Investigations

Field investigations were completed during the 2024 summer season as shown in Table 2.1. In addition to targeted surveys, all incidental wildlife, habitat, and pertinent landscape data was recorded to support a thorough assessment of the Study Area. Photographs of site features taken during field investigations are provided in Appendix B.

Field investigations completed in support of this EIS are outlined in Table 2.1 below.

Table 2.1 Summary of Field Investigations

Date	Time	Weather	Purpose
May 29, 2024	07:00-12:30	10°C, ~100% cloud cover, Beaufort 3, no precipitation, noise 2	Breeding Bird Survey; Ecological Land Classification
June 11, 2024	06:30-10:15	10°C, ~100% cloud cover, Beaufort 2, no precipitation, noise 2	Breeding Bird Survey
June 26, 2024	06:30-08:30	19°C, no cloud cover, Beaufort 1, no precipitation, noise 1	Breeding Bird Survey

2.2.1 Ecological Land Classification

Vegetation communities within the area of the proposed development were delineated during the desktop review stage of this EIS using publicly available air photos and confirmed in the field on May 29, 2024, following the Ecological Land Classification System for Southern Ontario (Lee *et al.,* 2008). Vegetation communities were confirmed in the field by employing the random meander methodology while documenting dominant vegetation species within the various vegetation community forms.

2.2.2 Breeding Bird Surveys

Breeding bird surveys were conducted on three occasions at six separate point count locations. Breeding bird surveys followed protocols from the Canadian Breeding Bird Surveys (Downes and Collins, 2003) and the Ontario Breeding Bird Atlas (Cadman, et al. 2007). Breeding bird survey dates were constrained by the timing of site access approval and as such, the first survey was completed later in the season. Surveys were conducted no earlier than 30 minutes before sunrise and were completed within 5 hours of sunrise, to encompass peak songbird activity. Breeding bird surveys consisted of 5 minutes of passive listening in which all birds heard or seen within the survey period were recorded, including species, sex and breeding behaviour, if possible. A list of all avian species identified on-site is provided in Table C.1 in Appendix C.

2.3 Data Analysis

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

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

3.0 EXISTING ENVIRONMENT

3.1 Ecoregion

The site is situated in Ecoregion 6E-16 (Lake Simcoe-Rideau), which extends from Lake Huron in the west to the Ottawa River in the east. The climate of Ecoregion 6E is categorized as humid, high to moderate temperate ecoclimate with a mean annual temperature range between 4.9°C to 7.8°C and an annual precipitation ranging between 759 mm to 1,087 mm (Crins *et al.,* 2009).

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

3.2 Landforms, Soils and Bedrock Geology

The topography of the site is relatively flat with a downward slope from a topographical high of 117 mASL in the east of the property towards the on-site wetland feature with a topographical low of 97 mASL in the south of the property.

Two topographical landforms, as mapped by Chapman and Putnam (1984) are described on-site; the largest, till plains (drumlinized), occurring in the northern half and southern corner of the property belonging to the North Gower Drumlin Field physiographic region and sand plains in the eastern corner of the property, belonging to the Edwardsburg Sand Plain physiographic region.

The Ontario Geological Survey (OGS, 2019) identified three surficial soil units on the subject area: till and two types of coarse-textured glaciomarine deposits. The larger of the three, till, consists of stone-poor, sandy silt to silty sand-textured till on Paleozoic terrain occurring in the south half and northern corner of the site. The first type of coarse-textured glaciomarine deposits, consisting of sand, gravel, minor silt and clay with foreshore and basinal deposits occurs in the northwestern corner and along the northeastern boundary of the site. The second type of coarse-textured glaciomarine deposits, consisting of sand, gravel, minor silt and clay with littoral deposits occurs in the northwest area of the site.

As described by OGS (2019), bedrock at the site consists of the Beekmantown Group comprised of dolostone and sandstone.

3.3 Surface Water, Groundwater and Fish Habitat

Based on a review of the Rideau River Conservation Authority mapping, Natural Heritage Information Centre (NHIC) mapping, City of Ottawa mapping and observations during the field investigations, surface water on-site is limited to a local unevaluated wetland, the Cranberry Creek and an unnamed watercourse.

The Cranberry Creek occurs in the southern corner of the property entering from the southwest before exiting from the southeastern property boundary.

The unnamed watercourse originates on-site within the mixed swamp in the centre of the property and flows north exiting along the northeastern property border.

A fisheries assessment was not completed as part of this EIS; however, the Cranberry Creek does confluence with the Rideau River and as such may provide habitat for fish. While no fish were observed within the unnamed watercourse, water was present during all the field investigations. As such, the unnamed watercourse may provide temporary fish habitat, contributing to base flow conditions for downstream habitat particularly during spring freshet and following significant precipitation events. Groundwater investigations were not completed in support of this EIS.

3.4 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 at the site represents a mosaic of open agriculture, cultural meadows, deciduous, mixed and coniferous forests, deciduous woodlands and mixed swamps. Table 3.1 below provides a summary of the vegetation communities identified within the subject property while Figure A.3 in Appendix A provides an illustration of the various vegetation communities.

Table 3.3 Vegetation Communities of the Subject Property

ELC Community Type	Description	Size (ha)
Active Agriculture (OAG)	Located in the western corner of the property is an active agricultural area containing alfalfa (*Medicago sativa*)	1.52
Cultural Meadow (CUM)	Located in the west of the property is a cultural meadow. The herbaceous layer included timothy grass (*Phleum pratense*), common milkweed (*Asclepias syriaca*), clover (*Trifolium* sp.), bladder campion (*Silene vulgaris*), cow vetch (*Viccia cracca*), dandelion (*Taraxacum officinale*), perennial ryegrass (*Lollium perenne*), cock's foot (*Dactylis glomerata*) and various temperate grass species (*Poa spp.*).	3.90
Rural Property (CVR_4)	Located in the west of the property is a rural residential dwelling.	0.51

ELC Community Type	Description	Size (ha)
Fresh-Moist White Cedar Coniferous Forest (FOCM4)	Located in the western corner and in the southwest is a coniferous forest dominated by eastern white cedar (*Thuja occientalis*). Lesser constituents included red pine (*Pinus resinosa*), American elm (*Ulmus americana*), green ash (*Fraxinus pennsylvanica*) and balsam fir (*Abies balsamifera*). The shrub layer contained prickly ash (*Zanthoxylum americanum*), common buckthorn (*Rhamnus cathartica*) and eastern white cedar. The herbaceous layer included poison ivy (*Toxicodendron radicans*).	5.75
Mixed Swamp (SWM)	Located in the centre from the northern corner to the southern corner of the property is a mixed wetland. The canopy layer included eastern white cedar, American elm, white birch (*Betula papyrifera*), green ash, trembling poplar (*Populus tremuloides*) and black ash (*Fraxinus nigra*). Shrub layer contained alder buckthorn (*Frangula alnus*) and green ash. The herbaceous layer was comprised primarily of field horsetail (*Equisetum arvense*).	12.17
Dry-Fresh Sugar Maple - Beech Deciduous Forest (FODM5-2)	Located in the eastern corner of the property is a deciduous forest vegetation community dominated by sugar maple (*Acer saccharum*) and American beech (*Fagus grandifolia*). Lesser constituents included white birch, ironwood (*Ostrya virginiana*), shagbark hickory (*Carya ovata*), American basswood (*Tilia americana*) and black cherry (*Prunus serotina*). The shrub layer included green ash and American beech. The herbaceous layer contained white trillium (*Trillium grandiflorum*), false solomon's seal (*Maianthemum racemosum*), sugar maple and shagbark hickory saplings.	6.63
Dry-Fresh Whie Cedar Conifer Forest (FOCM2-2)	Located along the eastern property boundary is a conifer forest dominated by eastern white cedar. No shrub layer was present within this vegetation community and only occasional false solomons's seal was observed at the herbaceous layer.	2.47

ELC Community Type	Description	Size (ha)
Naturalized Coniferous Plantation (FOCM6)	Located in the northern corner and centre of the property is a coniferous plantation dominated by red pine. Lesser constituents included white pine (*Pinus strobus*), sugar maple, green ash and Manitoba maple (*Acer negundo*). The shrub layer included prickly ash and common buckthorn. The herbaceous layer contained poison ivy.	7.12
Fresh-Moist Deciduous Woodland (WODM5)	Located in the centre of the property is a deciduous woodland. The canopy layer included trembling poplar, sugar maple, American basswood, balsam fir, white birch and American elm. The shrub layer contained trembling poplar, sugar maple, American beech, eastern white cedar, balsam fir and prickly ash. The herbaceous layer included prickly ash, sensitive fern (*Onoclea sensibilis*), lady fern (*Athyrium filix-femina*), poison ivy, clover, bedstraw species (*Galium spp.*) and bur oak (*Quercus macrocarpa*) saplings.	1.44
Dry-Fresh White Pine – Hardwood Mixed Forest (FOMM2)	Located in the western area of the property is a mixed forest. The canopy layer included white pine, red pine, eastern white cedar, trembling poplar, Manitoba maple, sugar maple and American elm. The shrub layer contained prickly ash and common buckthorn.	6.47

3.5 Wildlife

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

4.0 NATURAL HERITAGE FEATURES

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

4.1 Significant Wetlands

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

No provincially significant wetlands (PSW) were identified on the subject property during the desktop review or field investigations. One local wetland occurs through the centre of the property. No other PSWs were identified on-site during the desktop review, nor were they identified on-site during field investigations. 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.

The subject site is located within the rural policy area of the City of Ottawa, as established in the City of Ottawa Significant Woodlands Guidelines (Ottawa, 2022b), rural policy area woodlands are to be assessed based on the criteria established in the Significant Woodlands Guidelines and Natural Heritage Reference Manual (NHRM). The subject site falls into the rural planning area of the Lower Rideau River, it is assumed that the woodland coverage within the planning area is between 30% and 60%. Therefore, the minimum size criteria for significant woodlands in the Lower Rideau River planning jurisdiction is 50 ha.

Based on the results of the significant woodland screening presented in Table C.2, significant woodlands are present on-site due to their size and ecological functions. Significant woodlands are illustrated on Figure A.5 in relation to other site features. 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-water marks or the width of the stream meander belt (OMNR, 2010).

No valleylands were identified on-site during the desktop review or during the site investigation.

4.4 Significant Areas of Natural and Scientific Interest

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

No ANSIs have been identified on-site or adjacent to the site during the desktop review or during site investigations.

4.5 Significant Wildlife Habitat

The Natural Heritage Reference Manual (OMNR, 2010), in combination with the Significant Wildlife Habitat Technical Guide (OMNR, 2000) and the Significant Wildlife Habitat Ecoregion Criterion Schedules (OMNRF, 2015) were used to identify and evaluate potential significant wildlife habitat (SWH) on-site. SWH is broadly categorized as habitats of seasonal concentration of animals, rare vegetation communities, specialized habitats for wildlife, habitats of species of conservation concern and animal movement corridors. Tables 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 Concentration Areas 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 6E Criterion Schedules (OMNRF, 2015) identify 11 types of seasonal concentration habitats that may be considered SWH. These 11 types of seasonal habitats are presented in Table C.3 in Appendix C, including a brief description of the rationale as to why or why they are not assessed further in this EIS.

Following a review of Table C.3 in Appendix C, two habitats of seasonal concentration areas of animals are present within the study area, raptor wintering area and bat maternity colonies.

4.5.1.1 Raptor Wintering Area

The combination of forest and upland habitat within the study area may provide c*andidate* raptor wintering area. Raptor wintering area SWH provides critical overwintering habitat for the following raptor species: rough-legged hawk, red-tailed hawk, northern harrier, American kestrel, snowy owl, short-eared owl and bald eagle. Bald eagle habitat requires the forest community to be adjacent to shoreline areas of large rivers or lakes with open water. The defining criteria for confirmed raptor wintering area is the use of the habitat by one or more short-eared owl, one or more bald eagle or at least 10 individuals of the listed hawk/owl species (OMNRF, 2015). In order to be significant, sites must be used regularly (3 out of 5 years) for a minimum of 20 days by the number of birds detailed above (OMNRF, 2015).

A formal raptor wintering survey was outside of the scope of this EIS. The *candidate* significant wildlife habitat for raptor wintering area corresponds with the combination of fields and woodlands on-site and within the study area, that provide roosting, foraging and resting habitats for wintering raptors.

Given the combination of potentially suitable woodlands and uplands communities on-site and within the study area, it is possible that the subject property provides *candidate* raptor wintering SWH. Potential impacts to *candidate* raptor wintering area SWH are discussed in Section 6.

4.5.1.2 Bat Maternity Colonies

Candidate bat maternity colony areas have been identified within the woodlands of the subject property and study area. Bat maternity colony surveys were outside of the scope of work for the EIS and therefore, the presence or absence of bat maternity colonies was not confirmed.

Potential impacts to *candidate* bat maternity colony areas are discussed in Section 6.

4.5.2 Rare Vegetation Communities

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

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

4.5.3 Specialized Habitats for Wildlife

Specialized wildlife habitats are microhabitats that provide a critical resource to some groups of wildlife. The Significant Wildlife Habitat Technical Guide (OMNR, 2000) defines eight specialized habitats that may constitute SWH, these eight types of specialized wildlife habitat are evaluated in Table C.4 in Appendix C.

Following a review of Table C.4 in Appendix C, three specialized habitats for wildlife have been identified on-site or within the study area: woodland raptor nesting habitat, woodland amphibian breeding habitat and woodland area-sensitive bird breeding habitat.

4.5.3.1 Woodland Raptor Nesting Habitat

Candidate woodland raptor nesting habitat was identified throughout the wooded area of the subject property. Specific surveys targeting woodland raptor nesting habitat were not conducted as part of this EIS. However, nesting barred owl and red-shouldered hawk were observed on-site during the field investigations.

The subject property meets the defining use criteria in that candidate woodland nesting raptor habitat may be found in all forested ELC ecosites and be comprised of all natural or conifer plantation woodland/forest stands greater than 30ha with greater than 10ha of interior habitat (OMNRF, 2015).

As two species from the indicator species list were observed nesting on-site woodland raptor nesting habitat was *confirmed* within the extent of this EIS. Potential impacts to *confirmed* woodland nesting raptor habitat SWH are discussed in Section 6.

4.5.3.2 Woodland Amphibian Breeding Habitat

Breeding amphibian surveys were outside of the scope of this EIS, as such, *candidate* woodland amphibian habitat has been identified within the mixed swamp (ELC code SWM) and adjacent forest communities (ELC code FOCM4, FODM5-2, FOCM2-2, FOCM6, FOMM2 and WODM5) found on-site. Based on the description provided in the Significant Wildlife Habitat Criteria Schedules (OMNRF, 2015a), woodland amphibian habitat is considered to be the wetland, plus a 230 m radius of surrounding woodland area.

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

4.5.3.3 Woodland Area-Sensitive Bird Breeding Habitat

Candidate woodland area-sensitive bird breeding habitat was identified within the deciduous forest (FODM5-2) and mixed swamp (SWM) on-site.

To evaluate the potential for the woodland to provide confirmed woodland area-sensitive bird breeding habitat, a series of breeding bird surveys were conducted. A list of all breeding bird species observed during site investigations can be found in Appendix C, Table C.1: Summary of Wildlife Observed On-Site and Adjacent to Site.

Large, natural blocks of mature woodland habitat within the settled areas of Southern Ontario are important habitats for area sensitive interior forest songbirds. The MNRF have identified 13 area-sensitive species as indicator species of area-sensitive bird breeding habitat. As per the Significant Wildlife Habitat Criteria Schedules for Ecoregion 6E (OMNRF, 2015), for this type of *candidate* significant wildlife habitat to be *confirmed*, breeding bird surveys need to document the presence of breeding or probably breeding of three or more pairs of the indicator species, with any site containing breeding cerulean warblers or Canada warblers to be considered SWH. The 13 indicator species and results of the breeding bird surveys are provided in Table 4.2 below.

Table 4.1 Woodland Area-Sensitive Bird Breeding Survey Results

Species	Survey 1 (May 29)	Survey 2 (June 11)	Survey 3 (June 26)	Probable Breeding
Yellow-bellied Sapsucker	✓	✓	✓	Yes
Red-breasted Nuthatch	-	-	-	-
Veery		✓	✓	Yes
Blue-headed Vireo	-	-	-	-
Northern Parula	-	-	-	-
Black-throated Green Warbler	✓	✓	✓	Yes
Blackburnian Warbler	-	-	-	-
Black-throated Blue Warbler	-	-	-	-
Ovenbird	✓	✓	✓	Yes
Scarlet Tanager	✓	-	-	-
Winter Wren	-	-	✓	-
Cerulean Warbler	-	-	-	-
Canada Warbler	-	-	-	-

Following review of Table 4.2 above, four species (yellow-bellied sapsucker, veery, black-throated green warbler and ovenbird) were determined to be probably breeding on-site and within the study area. Based on the description provided in the Significant Wildlife Habitat Criteria Schedules (MNRF, 2015), the woodland on-site provides *confirmed* woodland area-sensitive bird breeding SWH.

SWH for woodland area-sensitive breeding birds is illustrated in Figure A.5 in Appendix A. Potential impacts to *confirmed* woodland area-sensitive bird breeding SWH are discussed in Section 6.

4.5.4 Habitats of Species of Conservation Concern

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

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

The Significant Wildlife Habitat Ecoregion Criterion Schedules (OMNRF, 2015) provides five general habitat types known to support a wide range of species of conservation concern in Ontario. The five general habitat types for Ecoregion 6E-16 are provided in Table C.5 in Appendix C, including a brief rationale as to why they are or are not considered further in this EIS. Following review of Table C.5 in Appendix C, one habitat of species of conservation concern has been identified on-site: habitat for special concern and rare wildlife species for barn swallow, eastern wood-pewee, wood thrush and snapping turtle.

4.5.4.1 Special Concern and Rare Wildlife Species SWH

Based on observation data from the field investigation and occurrence data from the NHIC and Ontario Breeding Bird Atlas, four species of special concern have been identified on-site or within the broader study area: barn swallow, eastern wood-pewee, wood thrush and snapping turtle. No other species of special concern or rare wildlife species were identified on-site or within the broader study area. Potential impacts to all *candidate* special concern from the proposed development are discussed in Section 6.

Barn Swallow

Barn swallow (*Hirundo rustica*) is a medium-sized songbird with an S-rank of S4B (breeding is uncommon but not rare) in Ontario; the most recent Ontario Breeding Bird Atlas indicated a significant decline of 60% between the start of the first atlas and the end of the second atlas with a steady significant annual decline of 3.5% in Ontario (Cadman et al, 2007). Barn swallow is often found in close association with humans, using man-made structures, such as barns, to supplement suitable nesting sites and foraging over open areas, such as grasslands and

agricultural fields. Barn swallow was not observed on-site during field investigations. Even though open habitat occurs on-site, no suitable nesting habitat is present within the Study Area and thus there is a low potential of barn swallow of using the site for nesting.

Eastern Wood-pewee

The eastern wood-pewee (*Contopus virens*) is a small flycatcher bird with an S-rank of S4B (breeding is uncommon but not rare) in Ontario; the most recent Ontario Breeding Bird Atlas indicated that the eastern wood-pewee has a probability of occurrence of over 80% (Cadman et al, 2007). Furthermore, the area extending from Ottawa to Lake Ontario is considered to have some of the highest density of wood-pewee in Ontario (Cadmen et al, 2007). Eastern wood-pewee is a woodland species that is often found near clearings and edges. The NHIC has identified historic observations for the subject property and surrounding study area. Furthermore, eastern wood-pewee was observed on-site during field investigations. Given the availability of forest edge habitat on-site and within the study area, there is a high potential for eastern wood-pewee or suitable habitat to occur on-site.

Wood Thrush

The wood thrush (*Hylocichla mustelina*) is a medium-sized songbird with an S-rank of S4B (breeding is uncommon but not rare) in Ontario; the most recent Ontario Breeding Bird Atlas indicated that the wood thrush populations in Ontario have shown a significant annual increase of 4.4% between the first and second atlas (Cadman et al., 2007). The NHIC has identified historic observations for the subject property and surrounding study area. Wood thrush is a woodland species often found in moist, deciduous hardwood or mixed forests stands, with dense deciduous undergrowth and tall trees. Furthermore, wood thrush was observed on-site during field investigations. Given the availability of forest habitat within the study area, there is a high chance of wood thrush or suitable habitat to occur on-site.

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, 2015a). The Significant Wildlife Habitat Ecoregion Criterion Schedules for Ecoregion 6E-16 (OMNRF, 2015a) identifies two types of animal movement corridors: amphibian movement corridors and deer movement corridors. As per guidance presented in OMNRF, 2015a, animal movement corridors should only be identified as SWH when a *confirmed or candidate* SWH has been identified by the MNRF district office or by the regional planning authority.

Following review of Table C.5 in Appendix C, no amphibian movement corridors have been identified on-site. As such, animal movement corridor habitat is not discussed or evaluated further in this EIS.

4.6 Fish Habitat

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

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

A fisheries assessment was not conducted as part of this EIS; however, as discussed in Section 3.3, the Cranberry Creek is assumed to provide fish habitat due to the downstream connection to the Rideau River.

Given the minimum distance of 93 m between the unnamed watercourse and 702 m between the Cranberry Creek and the proposed severances, impacts, as a result of the proposed severance development, are not anticipated.

4.7 Species at Risk

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

During the field investigations, two species at risk, black ash (*Fraxinus nigra*) and eastern meadowlark (*Sturnella magna*), were identified within the study area. No additional SAR were observed on-site during completed field investigations.

Table C.7 in Appendix C, provides a summary of all SAR that were determined to have the potential to occur on-site or within the broader study area, their protection status under the provincial Endangered Species Act (Ontario, 2007), their probability of occurrence and a brief rationale of that probability. Impacts to endangered or threatened SAR determined to have a moderate or high potential to occur on-site or within the broader study area are discussed further in Section 6.

5.0 PROPOSED PROJECT

The Project includes the severance of two new parcels from an existing 47.63 ha property, in support of future residential development. The new parcels will be each approximately 2.02 ha and will front along Mackey Road and extend southwards. No existing buildings on the property are proposed to be removed, or demolished, or renovated. No additional or new development is proposed for the retained parcel.

The act of severing the 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 land considered in the impact assessment presented in Section 6 include: tree clearing and vegetation grubbing, fill placement and elevation grading, laneway construction, drilling of groundwater well and septic system installation, excavation and pouring of foundations, construction of single-family dwelling and general landscaping activities.

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 natural environment from the proposed development outlined in Section 5 include: vegetation removal, habitat fragmentation and loss, disturbance of the natural soil mantle, increased noise generation, increased human disturbance, increased stormwater generation, a potential increase in nutrient loading to adjacent surface water features, increase in impervious surface and short-term increases in sedimentation and/or erosion.

6.1 Local Wetlands

As outline in Section 3.3 and 4.1, no provincially significant wetlands occur on-site. However, one local unevaluated wetland, approximately 12.17 ha in size, is present on-site within the central area of the property.

No in-water work is currently anticipated within the wetlands as part of the proposed future development and the limits of the severed parcels are outside of a 30 m setback from the wetland limits. Therefore, it is our opinion that impacts to the local wetlands are anticipated to be indirect in nature.

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

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

Mitigation measures intended to protect local wetlands are provided in Section 7.

6.2 Significant Woodlands

As discussed in Section 4.2, the woodlands on-site are considered significant due to their size and ecological functions. The proposed plan of development has the potential to result in a loss of 4.04 ha of significant woodland of the 41.31 ha total contiguous significant woodland present on-site if the entire 2.02 ha parcel is cleared and developed.

Potential impacts to significant woodlands on-site may include increased fragmentation, encroachment, increased disturbance and increased human-wildlife interactions.

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

6.3 Significant Wildlife Habitat

The potential presence of significant wildlife habitat (SWH) on-site and within the study area was evaluated in Section 4.5. As a result of this assessment, six types of significant wildlife habitat were determined to be present on-site or within the study area: *candidate* raptor wintering area, *candidate* bat maternity colonies, *confirmed* woodland raptor nesting area, *candidate* woodland amphibian breeding habitat, *confirmed* woodland area-sensitive bird breeding habitat and habitats of special concern and rare wildlife.

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

6.3.1 Raptor Wintering Area

Candidate raptor wintering area habitat can be found within the wooded and upland areas within the study area.

Potential direct impacts to *candidate* raptor wintering SWH are associated with loss of candidate roosting trees from the clearing of the forested areas, during the construction process. Indirect impacts include increased human presence, increased human and wildlife interaction and disturbances, and increased noise levels.

Mitigation measures intended to protect *candidate* raptor wintering area are provided in Section 7.

6.3.2 Bat Maternity Colonies

Candidate bat maternity colonies are limited to the wooded areas, residential dwellings and barns on-site and within the study area. Potential direct impacts to *candidate* bat maternity colonies may include loss of required candidate roosting/nesting trees. Indirect potential impacts include increased human presence, increased human and wildlife interaction and disturbances, and increased noise levels. However, given the nature of the proposed development, a single family residential dwelling, impacts from increased human presence and disturbance are anticipated to be minimal.

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

6.3.3 Woodland Raptor Nesting Habitat

Confirmed woodland raptor nesting habitat can be found throughout all wooded areas on-site. The site and surrounding study area is comprised of wooded areas of greater than 30 ha with greater than 10 ha of interior habitat. Additionally, snags and tree cavities are present which may provide suitable habitat for some nesting raptor species. Field investigations confirmed the presence of active, red-shouldered hawk stick nests and breeding barred owls.

Significant wildlife habitat for red-shouldered hawk is a 400 m radius around the nest or a 28 ha area of habitat should optimal habitat be irregularly shaped.

Significant wildlife habitat for barred owl is a 200 m radius around the nest.

Potential direct impacts to *confirmed* woodland raptor nesting habitat are associated with loss of 4.04 ha of woodland habitat, the loss of candidate roosting trees and habitat fragmentation. Indirect impacts include increased human presence, human and wildlife interaction and disturbances, and increased noise levels.

Mitigation measures to protect *confirmed* woodland nesting raptor habitat are provided in Section 7.

6.3.4 Woodland Amphibian Breeding Habitat

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

As no in-water work is proposed as part of the development, potential impacts to *candidate* woodland amphibian breeding SWH are anticipated to be associated with direct impacts to woodland habitat and indirect impacts to wetland habitat. Direct impacts to woodland amphibian breeding SWH is primarily associated with the loss of woodland cover and vegetation as a result of the proposed development. Indirect impacts to wetland habitat may include alterations to water quality due to nutrient and sediment loading as well as alterations to the hydrologic regime from increases in impermeable surfaces and increases in storm water runoff.

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

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

6.3.5 Woodland Area-Sensitive Bird Breeding Habitat

Confirmed woodland area-sensitive bird breeding habitat can be found within the deciduous forest and mixed swamp on-site (ELC code FODM6 and SWM). The subject property contains contiguous woodlands of greater than 30 ha with interior habitat, providing sufficient area to support woodland area-sensitive bird breeding habitat.

Field investigations revealed occurrences of four of the indicator species with all four species documented as breeding or probable breeding: yellow-bellied sapsucker, veery, black-throated green warbler and ovenbird. These observations in conjunction with the woodland size meet the defining criteria for *confirmed* woodland area-sensitive bird breeding habitat.

Potential direct impacts to *confirmed* woodland area-sensitive bird breeding habitat includes the loss of 4.04 ha of woodland habitat, the loss of vegetation cover and habitat fragmentation.

Potential indirect impacts include wetland encroachment, increased predation and parasitism, and increased human disturbances such as increased human and wildlife interaction, increased noise levels and increased predation from pets.

Mitigation measures to protect *confirmed* woodland area-sensitive bird breeding habitat are provided in Section 7.

6.3.6 Special Concern and Rare Wildlife Species Significant Wildlife Habitat

Eastern Wood-Pewee

Threats to eastern wood-pewee are not well understood however, loss of suitable forest habitat does not appear to be a significant issue across their Canadian breeding range (COSEWIC, 2012). Furthermore, research indicates that the species is not very sensitive to forest fragmentation effects or forest size (COSEWIC, 201). Eastern wood-pewee may be sensitive to human habitation, in Ontario they occur less frequently in woods with surrounding development than those without houses (COSEWIC, 2012). Other threats to eastern wood-pewee may include changes in the availability of aerial insects, mortality during migration and/or wintering, nest predation and habitat changes due to white-tailed deer browsing (COSEWIC, 2012).

Impacts to eastern wood-pewee and their habitat on-site from the proposed development is limited to the wooded habitat on-site, which may provide suitable nesting and foraging habitat. Impacts to eastern wood-pewee habitat includes loss of forest habitat and increased human disturbance and noise generation.

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

Wood Thrush

During the breeding season, the wood thrush is found in moist, deciduous hardwood or mixed forest stands, often in previously disturbed sites with dense, deciduous undergrowth and tall trees that are used as singing perches (COSEWIC, 2012b). For wood thrush, habitat selection is based more on the structure of the forest, preferring sites with lower elevations, trees taller than 16 m, closed canopy (>70%), with a high variety of deciduous species, moist soil and decaying leaf litter (COSEWIC, 2012b).

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

Mitigation measures intended to prevent negative impacts to nesting and foraging wood thrush 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.

6.4 Species at Risk

As outlined in the Endangered Species Act (ESA) (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.

6.4.1 Bobolink

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

Three breeding bird surveys were conducted during May and June 2024, under optimum weather conditions (minimal to no rain, low winds) to target breeding birds. The surveys were conducted at six point count locations, two of which targeted potentially suitable habitat for grassland birds such as bobolink; the survey locations are illustrated on Figure A.2 in Appendix A. Bobolink were not observed during any of the targeted breeding bird surveys.

The cultural meadow (CUM) on-site may provide appropriate vegetation structure for suitable bobolink habitat; however, bobolink are area sensitive and require grassland habitat to be larger than their defended territory. Research suggests that the minimum area required to support bobolink could be from 5-10 ha to 30-50 ha (OMNRF, 2013c). The total cultural meadow habitat on-site is approximately 3.90 ha and provides little to no interior grassland habitat (measured from 100 m from the edge). As such, the cultural meadow habitat on-site does not meet the recommended size criteria for bobolink as outlined in the bobolink General Habitat Description and is unlikely to provide sufficient protection to reduce edge effects (OMNRF, 2013c; provided in Appendix D). As such, no negative impacts are anticipated to occur to bobolink or their habitat from the proposed development and mitigation measures are not provided in Section 7 for the protection of bobolink or their habitat.

6.4.2 Eastern Meadowlark

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

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

Three diurnal breeding bird surveys were conducted during May and June 2024, under optimum weather conditions (minimal to no rain, low winds) to target breeding birds. The surveys were conducted at six point count locations, two of which targeted potentially suitable habitat for grassland birds such as eastern meadowlark; the survey locations are illustrated on Figure A.2 in Appendix A. Eastern meadowlark was observed on-site during one of the targeted breeding bird surveys conducted on June 11, 2024. The general location of observed birds is illustrated on Figure A.5 in Appendix A.

Based on the MNRF General Habitat Description for Eastern Meadowlark, (Appendix D), Category 1, Category 2 and Category 3 eastern meadowlark habitat, occurs on-site and is illustrated on Figure A.5 in Appendix A. As outlined in the MNRF general habitat description for eastern meadowlark, Category 1 habitat is defined as the “nest and area within 10 m of the nest”, Category 2 habitat is defined as “the area between 10 m and 100 m from the nest or centre of approximated defended territory” and Category 3 habitat is defined as “the **area of continuous, suitable habitat** between 100 m and 300 m from the nest or centre of approximated defended territory.” On-site the cultural meadow (ELC Community CUM) is considered to provide continuous suitable eastern meadowlark habitat. Active agricultural lands (ELC communities OAG) are not considered to provide continuous suitable habitat. Suitable continuous habitat and impacted regulated habitat is illustrated on Figure A.5 in Appendix A.

The proposed development on-site will occur outside of Category 1, Category 2 or Category 3 habitat for eastern meadowlark on-site. As such, development is not anticipated to have any negative impacts on eastern meadowlark or their habitat.

Avoidance and mitigation measures are therefore not provided and eastern meadowlark is not discussed further in this EIS.

6.4.3 Eastern Small-footed Myotis

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

Eastern small-footed myotis overwinter primarily in caves and abandoned mines with low humidity and temperatures and stable microclimates (Humphrey, 2017). In comparison to other Ontario bat species, they are able to tolerate much colder temperatures, drier conditions and draftier locations for hibernating (Humphrey, 2017). During the spring and summer months, they utilize a variety of habitats for roosting, including under rocks or rock outcrops, in buildings, under bridges, or in caves, mines or hollow trees (Ontario, 2021c).

The forest habitat on-site may meet the requirements to support bat maternity colonies and given the availability of suitable habitat and potentially suitable anthropogenic buildings within the study area, there is a potential for eastern small-footed Myotis to occur on the property, for foraging and maternal roosting. Impacts to eastern small-footed Myotis are primarily associated with encroachment and increased wildlife-human interaction. Mitigation measures intended to protect eastern small-footed myotis from impacts of the proposed development are discussed in Section 7.

6.4.4 Little Brown Myotis

In Canada, little brown myotis (*Myotis lucifugus*) occurs throughout all of the provinces and territories (except Nunavut), with its range extending south through the majority of the United States as well. In Ontario, the little brown myotis is widespread in southern Ontario and has been found as far north as Moose Factory and Favourable Lake (Ontario, 2021d).

Little brown myotis overwinter in caves and abandoned mines. They require highly humid conditions and temperatures that remain above the freezing mark (Ontario, 2021d). 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 gaps in the forest. Open fields and clear-cuts are not typically utilized for foraging (COSEWIC, 2013).

The forest habitat on-site may meet the requirements to support bat maternity colonies and given the availability of suitable habitat and potentially suitable anthropogenic buildings within the study area, there is a potential for eastern little brown Myotis to occur on the property, for foraging and maternal roosting. Impacts to little brown Myotis are primarily associated with encroachment and increased wildlife-human interaction. Mitigation measures intended to protect little brown Myotis from impacts of the proposed development are discussed in Section 7.

6.4.5 Tri-colored Bat

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

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

The forest habitat on-site may meet the requirements to support bat maternity colonies and given the availability of suitable habitat and potentially suitable anthropogenic buildings within the study area, there is a potential for eastern tri-colored bat to occur on the property, for foraging and

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

6.4.6 Blanding's Turtle

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

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

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

As regulated Blanding's turtle habitat extends up to 2 km from on observation, based conservatively on the NHIC observation data, all suitable wetlands and watercourses on-site are assumed to provide Category 2 and 3 habitat. Due to the limited water depth within the wetland, watercourse and Cranberry Creek it is unlikely for them to support Category 1 overwintering habitat for Blanding's turtle.

As no in-water work will occur within the local wetlands, Cranberry Creek, or the unnamed watercourse on-site, 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 0.70 ha of Category 2 habitat and 3.35 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.

6.4.7 Black Ash

The Canadian range for black ash extends from western Newfoundland to southeastern Manitoba (Ontario, 2023). It is a shade-intolerant species that that is typically found on moist to wet sites, including swamps, bogs, and riparian areas. Black ash was added to the Species at Risk in Ontario list in January 2022.

Black ash stems were identified within the mixed swamp community (ELC code SWM) on-site. While the proposed project is expected to require some level of vegetation clearing to accommodate future construction activities, the local swamp community is not anticipated to be within the proposed severance areas. Given this, targeted surveys for black ash were not completed within the subject property.

If construction within a 30 m radius of the black ash vegetation communities cannot be avoided, or if the black ash on-site will be impacted by any aspect of the proposed development (e.g. killed, harmed or taken), a black ash health assessment and consultation with the Ministry of Environment, Conservation and Parks (MECP) would be required to determine next steps for the property.

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

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

6.5 Cumulative Impacts

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

Cumulative impacts to the natural environment at the site due to increased human presence, increased wildlife and human interaction and increased noise, are expected to be 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 in order to minimize or eliminate potential environmental impacts identified in Section 6.

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

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

7.1 Local Wetlands

No negative impacts on the integrity of the local wetlands are anticipated as a result of the proposed development if all mitigation measures recommended below area enacted and best management practices followed. Wetlands 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 local wetlands on-site were identified to include potential impacts to water quality, human disturbance and core habitat protection (*confirmed* Black ash habitat, *candidate* woodland amphibian breeding habitat and *candidate* snapping turtle and Blanding's turtle habitat). Wetland buffer widths have a moderate risk of not providing adequate mitigation for water quality impacts at widths between 11 m and 50 m. Wetland buffer widths have a moderate risk of not providing adequate mitigation for human disturbance/land use change impacts at widths between 11 m and 30 m and low risk at widths of 31 m to 50 m. Wetland buffer widths have a moderate risk of not providing adequate mitigation for core habitat protection at widths between 21 m and 60 m.

In consideration of local unevaluated wetlands on-site, a minimum 30 m setback from the unevaluated wetland edge is recommended. The recommended 30 m setback provides sufficient protection for mitigating water quality impacts and human disturbances. At 30 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 wetland.

As such, a 30 m setback is sufficient to protect on-site the local wetlands. Setbacks are illustrated on Figure A.5 in Appendix A.

No negative impacts on the ecological function of the local wetlands 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 Cranberry Creek or unnamed watercourse will require a permit from the Rideau Valley 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.

7.2 Significant Woodlands

Development has the potential to result in the loss of 4.04 ha (9.78%) of significant woodland present on-site. To ensure that clearing does not extend beyond what is required to accommodate the two single-family dwellings, use of development envelopes is recommended. The proposed development envelopes are to be approximately 0.5 ha in size.

The development envelopes are to be positioned beyond the recommended 30 m setback from the local wetlands and watercourse.

By implementing the proposed 0.5 ha development envelopes (one for each new lot) for the proposed development, the maximum loss of woodland habitat on-site is 1 ha (2.42%). The development envelopes will ensure that the size and ecological functions of the woodlands are not negatively impacted; the on-site woodlands in conjunction with contiguous off-site woodlands will continue to meet the criteria provided by the NHIC, that were discussed in Section 4.2.

7.3 Significant Wildlife Habitat

7.3.1 *Candidate* Raptor Wintering Area

The proposed development envelopes and 30 m setback for the local wetland and watercourse, are sufficient to provide protection and maintain habitat for *candidate* raptor wintering area. The minor loss of treed habitat is not anticipated to negatively impact raptor wintering area and ensures that the size and ecological functions of the remaining forest habitats on-site are not negatively impacted.

7.3.2 *Candidate* Bat Maternity Colonies

The proposed development envelopes and 30 m setback for the local wetland and watercourse, are sufficient to provide a wooded buffer to protect forest cover and maintain habitat for *candidate* bat maternity colonies. The minor loss of treed habitat is not anticipated to negatively impact bat maternity colonies and ensures that the size and ecological functions of the remaining forest habitats on-site are not negatively impacted.

To further protect bats all vegetation clearing should be completed outside of the bat active season, of March 15 to November 30. If vegetation clearing must be conducted during the spring and summer timing window than a roost survey should be conducted be a qualified professional.

Consideration should be given to the protection of larger, mature trees, and trees with signs of habitat usage including stick nests and tree cavities.

7.3.3 *Confirmed* Woodland Raptor Nesting Habitat

The 0.5 ha development envelopes prescribed to protect significant woodlands are sufficient to provide protection to the woodland raptor nesting habitat that is defined as a 28 ha area of habitat for red-shouldered hawk and a 200 m radius around the identified barred owl nest. Through use of the development envelopes impacts to woodland raptor nesting habitat includes the loss of approximately 1 ha of forested woodland raptor nesting habitat. The development envelopes further ensure that forest cover and existing forest structure is maintained, which is important, as raptors tend to return to the same area to nest year after year.

7.3.4 *Candidate* Woodland Amphibian Breeding Habitat

The 30 m setback presented in Section 7.1 above; to protect the local wetlands and watercourse is sufficient to protect the core *candidate* woodland amphibian breeding habitat. Furthermore, the development envelopes ensure that forest cover and habitat connecting the local wetland to the drainage feature and watercourse is maintained, which is important for wildlife moving between habitats throughout the year.

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

7.3.5 *Confirmed* Woodland Area-Sensitive Bird Breeding Habitat

The development envelopes prescribed to protect significant woodlands are sufficient to provide protection for *confirmed* woodland area-sensitive bird breeding habitat on-site. At maximum, 0.5 ha of interior woodland habitat would be removed, depending on where the development envelope will be located. This minor loss of interior woodland habitat, when compared to the habitat available across the site, is minor and it is our opinion that this impact will not compromise the habitat use of the woodlands post-development.

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

7.3.6 Habitats of Special Concern and Rare Wildlife Species

7.3.6.1 Eastern Wood-Pewee and Wood Thrush

Impacts to eastern wood-pewee and wood thrush primarily concern habitat loss and increased fragmentation, the development envelopes presented above to protect significant woodlands on-site is sufficient to protect special concern and rare wildlife habitat from large amounts of habitat loss and fragmentation. To further minimize the impact of the proposed development on eastern wood-pewee and wood thrush habitat, vegetation removal should occur outside the key breeding

bird period (typically March 31 to August 31) as identified by Environment Canada for the protection of nesting and foraging eastern wood-pewee and wood thrush and to avoid contravention of the Migratory Bird Convention Act.

Environment Climate Change Canada (ECCC) does not recommend active nest searches as the ability to detect nests is very low while the risk of disturbing or damaging active nests is high, flushing nesting birds increases the risk of predation of the eggs or young or may cause adults to abandon the nest and disturbing or damaging nests is still likely to occur during disruptive activities even when nest searches are conducted (ECCC, 2023).

If vegetation clearing activities must take place during the aforementioned timing window than a nest survey shall be conducted by a qualified professional. Surveys should be conducted no more than 48 hours prior to vegetation clearing and be repeated if removal takes more than 2 days. Vegetation with active nests may not be removed until the nesting period has past, or the nest becomes vacant.

7.3.6.2 Snapping Turtle

The 30 m local wetland and watercourse setback are sufficient to protect *candidate* SWH associated with the wetlands and drainage feature 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.

7.4 Species at Risk

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

In addition to no SAR observations, no critical habitat for SAR bats (cave, crevice or maternity roosts) were identified on-site. In accordance with MECP best management practices, to protect roosting and foraging bats, tree removal where required should take place outside of the spring and summer active season (typically March 15 to November 30), when bats are more likely to be

using forest habitat. If vegetation clearing must be conducted during the spring and summer timing window than a roost survey should be conducted be a qualified professional.

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

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

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

7.4.2 Blanding's Turtle

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

Through the use of the proposed wetland setbacks and the establishment of the development envelopes, total impacted Blanding's turtle habitat on-site is 1 ha of Category 3 habitat. Implementation of the setback and development envelopes ensures that the migratory function of the Category 3 habitat associated with the local wetland, watercourse and drainage feature areas will not be negatively impacted, post-construction Blanding's turtle will still be able to utilize the area for overland movement.

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

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

- Prior to any site work, reptile and amphibian exclusion fencing should be installed around the entire perimeter of the construction area to prevent the migration of Blanding's Turtles and other wildlife into the construction zone. The temporary exclusion fencing will also provide a visual demarcation of the development area for workers during construction. Exclusion fencing should follow the protocols outlined in the Species at Risk Branch: Best Practices Technical Note: Reptile and Amphibian Exclusion Fencing Version 1.1 (MNRF, July 2013).
- 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 with a potential to occur on-site including Blanding's turtle. Training will also outline the stop work procedures and MECP reporting/consultation prior to resuming work.
- During construction if any SAR is identified on-site all work should stop and a qualified professional and the MECP should be contacted for next steps. SAR sightings should be reported to the MECP and the NHIC.
- Heavy-duty silt fencing should be installed and maintained during construction and whenever soil is exposed; the incorporation of lot-side swales and gravel laneways are intended to promote infiltration and direct stormwater runoff to road side ditches instead of towards adjacent waterbodies.
- Cover all stockpiled material with a geotextile to prevent turtles from nesting in the material between May 1 and August 1 of any year.
- Following construction completion, property managers 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.

7.4.3 Black Ash

The 30 m local wetland and watercourse setbacks provide a buffer to protect on-site black ash habitat from negative impacts. Furthermore, the development envelope ensures that clearing does not extend beyond what is required to accommodate any future development and on-site black ash habitat is maintained.

If the minimum setback distance of 30 m around each tree cannot be met, consultation with the MECP would be required to determine next steps for the property, in order to address impacts to black ash.

Healthy black ash trees, that are taller than 1.37 m or larger than 8 cm diameter at breast height (DBH) are protected under the Endangered Species Act. Any work within 30 m of a healthy black

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

7.5 Wildlife

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

- To protect wildlife during construction, construction should be completed in accordance with the best practices outlined in Protocols for Wildlife During Construction, from the City of Ottawa (Ottawa, 2022b), and Bird-Safe Design Guidelines from the City of Ottawa (Ottawa, 2022a)
- Vegetation removal should occur outside of March 15 to November 30 to avoid the key breeding bird period, bat summer active season, and reptile and amphibian active season. The timing windows provides protection of migratory birds, roosting bats, migrating reptiles and amphibians and avoids contravention of the Migratory Bird Convention Act and Endangered Species Act. If vegetation clearing activities must take place during the aforementioned timing window than a nest and roost survey shall be conducted by a qualified professional.
- Reptile exclusion fencing should be installed around the entire construction area prior to construction commencing to prohibit the movement of turtles and amphibians into the construction area. Reptile exclusion fencing should follow guidelines established in *Species at Risk Branch Best Practices Technical Note – Reptile and Amphibian Exclusion Fencing* (OMNRF, 2013b).
- Cover all stock piled material with a geotextile to prevent turtles from nesting in the material between May 1 and August 1 of any year.
- Perform daily pre-work sweeps of the construction area to ensure no species at risk are present and to remove any wildlife from inside the construction area.
- Should any species at risk be discovered throughout the course of the proposed works, the species at risk biologist with the local MECP district should be contacted immediately and operations modified to avoid any negative impacts to species at risk or their habitat until further direction is provided by the MECP.

7.6 Best Practice Measures for Mitigation of Cumulative Impacts

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

- To protect 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 storm water runoff.
- Silt fencing should be installed along all setbacks to provide visual demarcation of the setbacks and to prevent machinery encroachment and sediment transport.
- Erosion and sediment control measures should be maintained until all disturbed ground has been permanently stabilized.
- In effort to offset the effect of vegetation clearing, consideration should be given to landscape planting with native tree species indicative of the Great Lakes – St. Lawrence Forest Region, such as white cedar, white spruce, red maple and red oak.

8.0 CONCLUSIONS

The proposed project supported by this EIS is a land severance application to sever two 2.02 ha lots from an existing 47.63 ha property municipally addressed as 7063 Malakoff Road, Ottawa, Ontario, for future residential development.

Based on the results of the impact analysis, impacts to the 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 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 impacts to natural heritage features identified on-site, including, significant woodlands, local wetlands, significant wildlife habitat or habitats of species at risk are anticipated as a result of future residential development.
- The proposed project complies with the natural heritage policies of the Provincial Policy Statement.
- The proposed development complies with the natural heritage policies of the City of Ottawa Official Plan.

9.0 LIMITATION OF LIABILITY

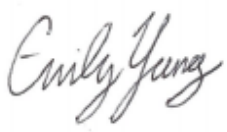
This report and the work referred to within it have been undertaken by GEMTEC Consulting Engineers and Scientists Ltd (GEMTEC), and prepared for Novatech and is intended for the exclusive use of Novatech. This report may not be relied upon by any other person or entity without the express written consent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

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

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

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

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



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Junior Biologist

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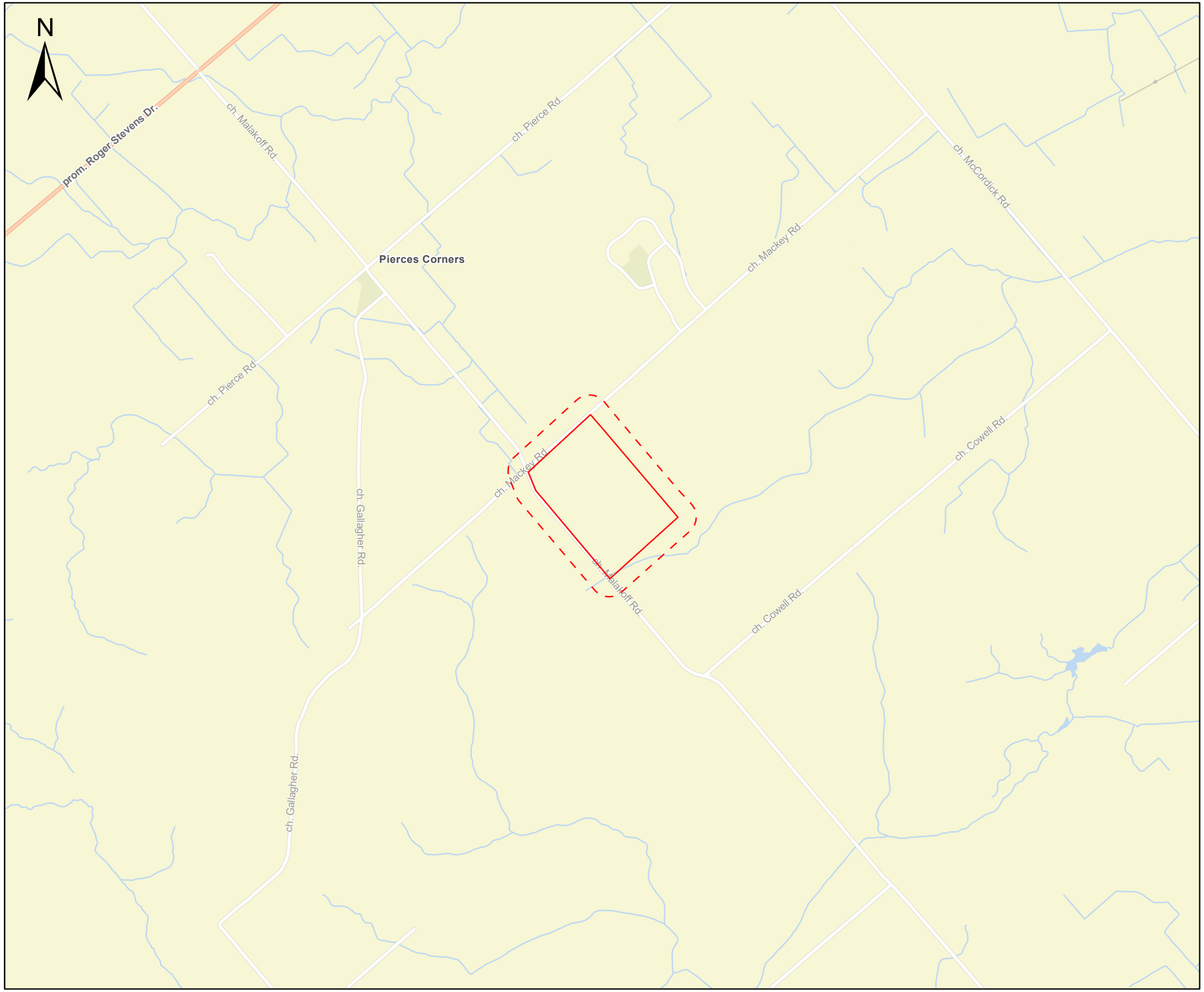
APPENDIX A

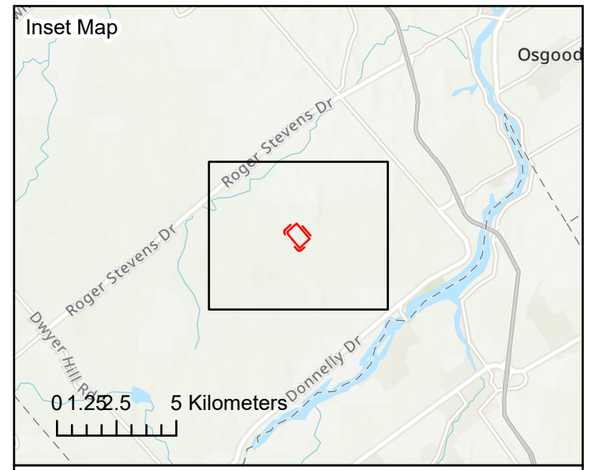
Report Figures



Legend

Property Boundary

Study Area



Scale

1:25,000

0 200 400 800 1,200 1,600 Meters

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Client:	Project:
Novatech	100011.092

Location

7063 Malakoff Road
Ottawa, Ontario

Drwn By:	Chkd By:	
EP	ZA	Site Location

Date: November 2024	Rev.	
© Queen's Printer for Ontario	1	Figure: A.1

Coordinate System: NAD 1983 UTM Zone 18N
Service Layer Credits: World Topographic Map: City of Ottawa, Province of Ontario, Esri Canada, Esri, TomTom, Garmin, SafeGraph, METI/NASA, USGS, EPA, NPS, USDA, USFWS, NRCan, Parks Canada
World Street Map Background (Community Map of Canada): City of Ottawa, Province of Ontario, Esri Canada, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, US Census Bureau, USDA, USFWS, NRCan, Parks Canada

Legend

- Property Boundary
- Study Area
- Proposed Severance
- Local Wetland
- Watercourse
- Municipal Drain
- Breeding Bird Survey Locations (100 m Radius)

Scale
1:5,500
0 50 100 200 300 Meters

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Location
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Drwn By:	Chkd By:	
EP	ZA	Survey Locations

Date: November 2024	Rev.	
	1	Figure: A.2

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

Legend

- Property Boundary
- Study Area
- Proposed Severance
- Local Wetland
- Watercourse
- Municipal Drain
- Vegetation Community

OAG = Open Agriculture
CUM = Cultural Meadow
CVR_4 = Rural Property
FOCM4 = Fresh-Moist White Cedar Coniferous Forest
SWM = Mixed Swamp
FODM5-2 = Dry-Fresh Sugar Maple - Beech Deciduous Forest
FOCM2-2 = Dry-Fresh White Cedar Coniferous Forest
FOCM6 = Naturalized Coniferous Plantation
WODM5 = Fresh-Moist Deciduous Woodland
FOMM2 = Dry-Fresh White Pine-Hardwood Mixed Forest

Scale
1:5,500
0 50 100 200 300 Meters

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Location
7063 Malakoff Road
Ottawa, Ontario

Drwn By:	Chkd By:	
EP	ZA	Vegetation Communities

Date: November 2024	Rev.	
	1	Figure: A.3

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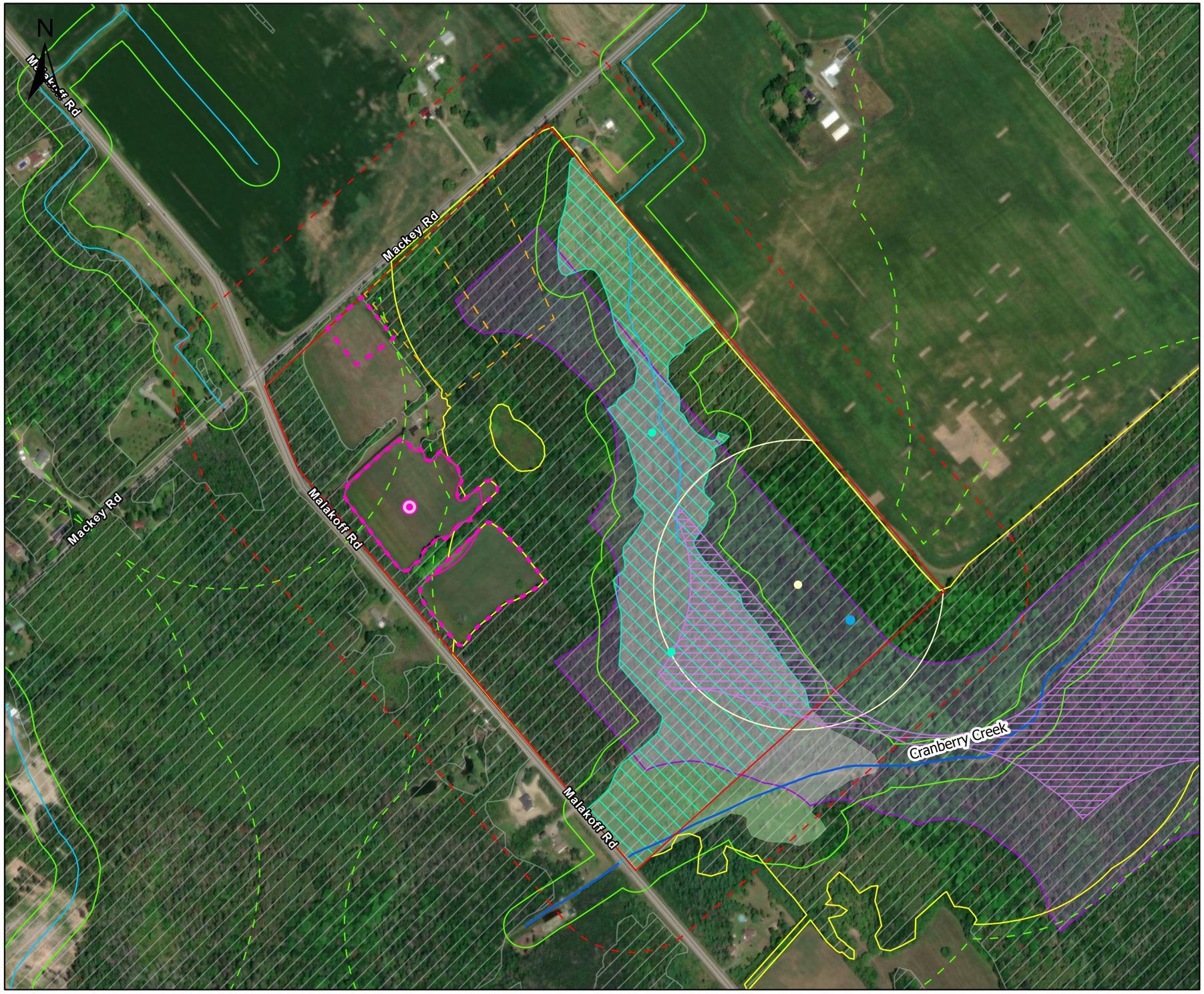
Hybrid Reference Layer: Esri Community Maps Contributors, City of Ottawa, Province of Ontario, Esri Canada, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, US Census Bureau, USDA, USFWS, NRCan, Parks Canada



Legend

- Property Boundary
- Study Area
- Proposed Severance
- Local Wetland
- Watercourse
- Municipal Drain
- Owl Nest Observation (200 m Radius)
- Hawk Nest Observation
- Significant Woodland
- Black Ash Observation
- Black Ash Present
- Eastern Meadowlark Occurrence
- Eastern Meadowlark Category 1 Habitat (10 m)
- Eastern Meadowlark Category 2 Habitat (100 m)
- Eastern Meadowlark Category 3 Habitat (300 m)
- Blanding's Turtle Category 2 Habitat (30 m)
- Blanding's Turtle Category 3 Habitat (250 m)
- Woodland Amphibian Breeding Habitat
- Interior Woodland
- Area Sensitive Breeding Bird Habitat

Scale
1:5,500
0 50 100 200 300 Meters

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Client: Novatech

Project: 100011.092

Location: 7063 Malakoff Road
Ottawa, Ontario

Drwn By: EP | Chkd By: ZA

Natural Heritage Features

Date: November 2024

Rev. 1

Figure: A.4

Coordinate System: NAD 1983 UTM Zone 18N
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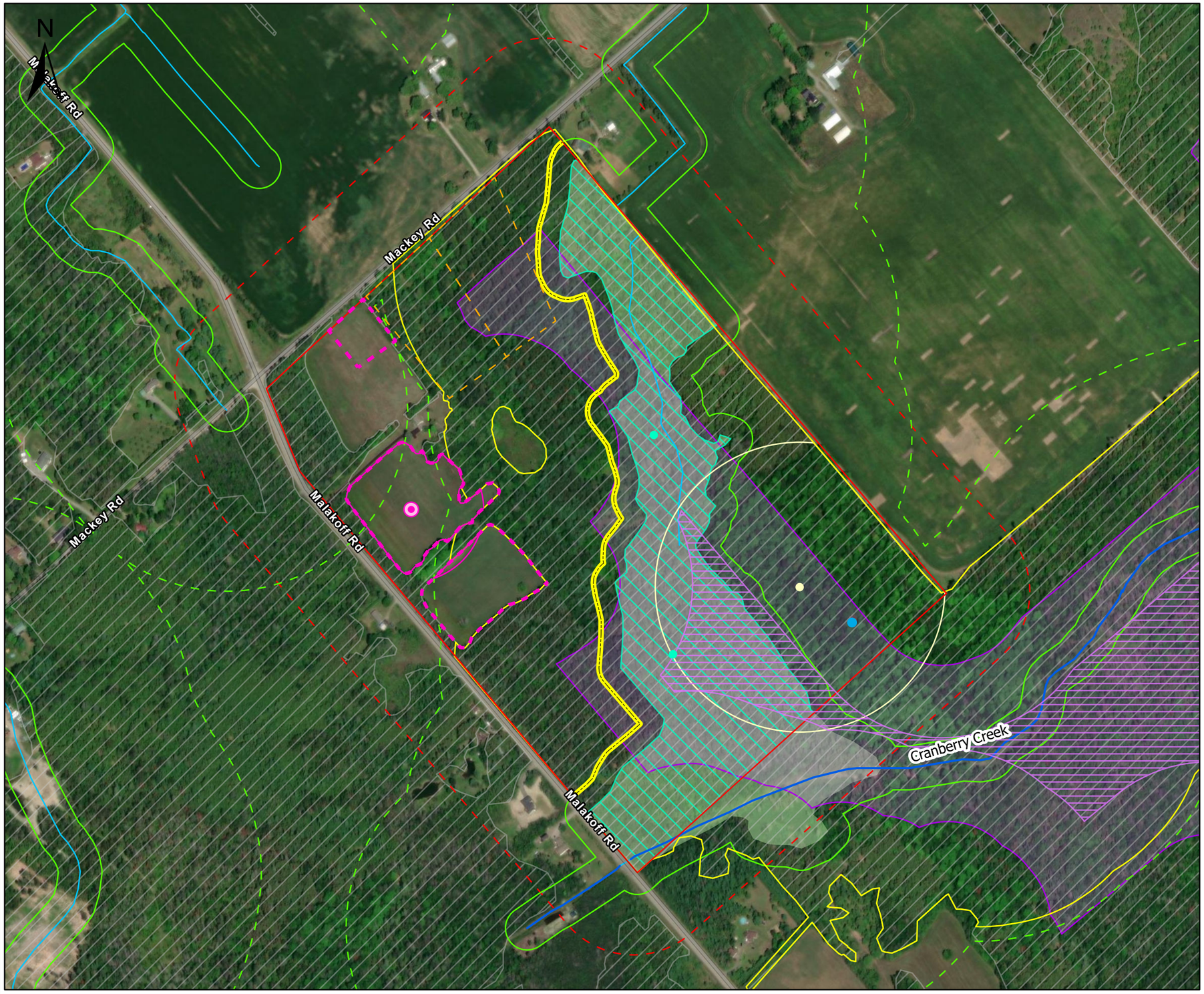

Legend

- Property Boundary
- Study Area
- Proposed Severance
- Local Wetland
- Watercourse
- Municipal Drain
- Owl Nest Observation (200 m Radius)
- Hawk Nest Observation
- 30 m Setback
- Significant Woodland
- Black Ash Observation
- Black Ash Present
- Eastern Meadowlark Occurrence
- Eastern Meadowlark Category 1 Habitat (10 m)
- Eastern Meadowlark Category 2 Habitat (100 m)
- Eastern Meadowlark Category 3 Habitat (300 m)
- Blanding's Turtle Category 2 Habitat (30 m)
- Blanding's Turtle Category 3 Habitat (250 m)
- Woodland Amphibian Breeding Habitat
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Location: 7063 Malakoff Road
Ottawa, Ontario

Drwn By: EP | Chkd By: ZA

Mitigation Measures

Date: November 2024

Rev. 1

Figure: A.5

Coordinate System: NAD 1983 UTM Zone 18N
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APPENDIX B

Site Photographs

Site Photograph 1 – Active Agriculture (OAG)

Site Photograph 2 – Mineral Cultural Meadow (CUM)

Site Photograph 3 – Fresh-Moist White Cedar Coniferous Forest (FOCM4)

Site Photograph 4 – Mixed Swamp (SWM)

GEMTEC Consulting Engineers and Scientists	Project Environmental Impact Statement Proposed Land Severance Application 7063 Malakoff Road Ottawa, Ontario	**ATTACHEMNT B** File No. 100011.092	**Site Photographs**

Site Photograph 5 – Dry-Fresh Sugar Maple – Beech Deciduous Forest (FODM5-2)

Site Photograph 6 – Naturalized Coniferous Plantation (FOCM6)

Site Photograph 7 – Fresh-Moist Deciduous Woodland (WODM5)

Site Photograph 8 – Dry-Fresh White Cedar Coniferous Forest (FOCM2-2)

GEMTEC Consulting Engineers and Scientists	Project Environmental Impact Statement Proposed Land Severance Application 7063 Malakoff Road Ottawa, Ontario	**ATTACHEMNT B** File No. 100011.092	**Site Photographs**

APPENDIX C

Report Summary Tables

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

Common Name	Scientific Name	S-Rank	Evidence
Avian Species			
American crow	*Corvus brachyrhynchos*	S5	Observed on-site, heard calling
American goldfinch	*Spinus tristis*	S5	Observed on-site, heard calling
American redstart	*Setophaga ruticilla*	S5B	Observed on-site, heard calling
American robin	*Turdus migratorius*	S5	Observed on-site, heard calling
Barred owl	*Strix varia*	S5	Observed nesting on-site, heard calling
Black-and-white warbler	*Mniotilta varia*	S5B	Observed on-site, heard calling
Black-capped chickadee	*Poecile atricapillus*	S5	Observed on-site, heard calling
Black-throated green warbler	*Setophaga virens*	S5B	Heard calling
Blue jay	*Cyanocitta cristata*	S5	Observed on-site, heard calling
Broad-winged hawk	*Buteo platypterus*	S5B	Heard calling
Brown thrasher	*Toxostoma rufum*	S4B	Observed on-site, heard calling
Canada goose	*Branta canadensis*	S5	Heard calling
Cedar waxwing	*Bombycilla cedrorum*	S5	Observed on-site, heard calling
Chestnut-sided warbler	*Setophaga pensylvanica*	S5B	Observed on-site, heard calling
Chipping sparrow	*Spizella passerina*	S5B,S3N	Observed on-site, heard calling
Common grackle	*Quiscalus quiscula*	S5	Observed on-site, heard calling
Common yellowthroat	*Geothlypis trichas*	S5B,S3N	Observed on-site, heard calling
Downy woodpecker	*Dryobates pubescens*	S5	Observed on-site, heard calling
Eastern kingbird	*Tyrannus tyrannus*	S4B	Observed on-site, heard calling
Eastern meadowlark	*Sturnella magna*	S4B,S3N	Observed on-site, heard calling
Eastern phoebe	*Sayornis phoebe*	S5B	Observed on-site, heard calling
Eastern wood-pewee	*Contopus virens*	S4B	Heard calling
European starling	*Sturnus vulgaris*	SNA	Observed on-site, heard calling
Gray catbird	*Dumetella carolinensis*	S5B,S3N	Observed on-site, heard calling
Great crested flycatcher	*Myiarchus crinitus*	S5B	Observed on-site, heard calling
Hairy woodpecker	*Dryobates villosus*	S5	Observed on-site, heard calling
House wren	*Troglodytes aedon*	S5B	Heard calling
Indigo bunting	*Passerina cyanea*	S5B	Observed on-site, heard calling
Mourning dove	*Zenaida macroura*	S5	Observed on-site, heard calling
Northern cardinal	*Cardinalis cardinalis*	S5	Observed on-site, heard calling
Northern flicker	*Colaptes auratus*	S5	Observed on-site, heard calling
Northern waterthrush	*Parkesia noveboracensis*	S5B	Heard calling
Ovenbird	*Seiurus aurocapilla*	S5B	Observed on-site, heard calling
Pileated woodpecker	*Dryocopus pileatus*	S5	Observed on-site, heard calling
Pine warbler	*Setophaga pinus*	S5B,S3N	Heard calling
Red-eyed vireo	*Vireo olivaceus*	S5B	Observed on-site, heard calling
Red-shouldered hawk	*Buteo lineatus*	S4B,S2N	Observed nesting on-site, heard calling
Ruby-throated hummingbird	*Archilochus colubris*	S5B	Heard calling
Ruffed grouse	*Bonasa umbellus*	S5	Heard calling
Savannah sparrow	*Passerculus sandwichensis*	S5B,S3N	Observed on-site, heard calling
Scarlet tanager	*Piranga olivacea*	S5B	Observed on-site, heard calling
Song sparrow	*Melospiza melodia*	S5	Observed on-site, heard calling
Veery	*Catharus fuscescens*	S5B	Heard calling
Vesper sparrow	*Pooecetes gramineus*	S4B	Observed on-site, heard calling
White-breasted nuthatch	*Sitta carolinensis*	S5	Observed on-site, heard calling
White-throated sparrow	*Zonotrichia albicollis*	S5	Observed on-site, heard calling
Winter wren	*Troglodytes hiemalis*	S5B,S4N	Heard calling
Wood thrush	*Hylocichla mustelina*	S4B	Heard calling
Yellow-bellied sapsucker	*Sphyrapicus varius*	S5B,S3N	Observed on-site, heard calling
Mammalian Species			
Red squirrel	*Tamiasciurus hudsonicus*	S5	Observed on-site

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

White-tailed deer	*Odocoileus virginianus*	S5	Observed on-site
Amphibian Species			
Wood frog	*Lithobates sylvaticus*	S5	Heard calling

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

TABLE C.2
SCREENING RATIONAL FOR SIGNIFICANT WOODLANDS

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

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

Wildlife Habitat	Further Considered in EIS	Rationale
Waterfowl Stopover and Staging Areas	No	Based on review of publically available data from the OMNRF on Land Information Ontario Geo-hub, no waterfowl stopover and staging areas were identified on-site. Wetland habitat on-site unlikely to provide suitable conditions to support waterfowl stopover and staging areas (aquatic). No habiat for terrestrial stopover and staging areas was present on-site.
Shorebird Migratory Stopover Area	No	Shorebird stopover sites are typically well-known and have a long history of use. The site does not contain suitable shoreline habitat for shorebird foraging.
Raptor Wintering Area	Yes	Combination of woodlands on-site and adjacent contiguous upland communities in the study area meet minimum size requirements to support raptor wintering area habitat.
Bat Hibernacula	No	Cave and crevice habitat is not present on-site or within the study area.
Bat Maternity Colonies	Yes	Woodlands on-site may meet minimum snag density (>10 snags/hectare) requirements to be considered SWH for bat maternity colonies.
Turtle Wintering Area	No	No suitable wetland habitat located 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	While there are stands of coniferous woodlands on-site, as outlined in the the Signficant Wildlife Habitat Criteria Schedules (OMNRF, 2015) winter deer yards and deer managment are an MNRF responsibility. Based on review of publically available data from the OMNRF on Land Information Ontario Geo-hub, no deer yards or winter congregation areas have been identified on-site or within the broader study area.

TABLE C.4
SCREENING RATIONALE FOR SPECIALIZED WILDLIFE HABITATS

Specialized Wildlife Habitat	Further Considered in EIS	Rationale
Waterfowl Nesting Area	No	No suitable wetland habitat presnt on-site to support waterfowl nesting area.
Bald Eagle and Osprey Nesting, Foraging and Perching Habitat	No	No suitable habitat is located on-site or within the study area to support foraging bald eagles or osprey. Nesting sites for these species are uncommon in Ecoregion 6E (MNRF, 2012).
Woodland Raptor Nesting Habitat	Yes	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 with interior forest habitat >10 ha occurrs on-site. Barred owl and red-shouldered hawk were observed nesting on-site.
Turtle Nesting Habitat	No	No suitable habitat (exposed mineral soil with minimal vegetation cover) is present on-site.
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	Yes	Woodland area-sensitive birds require interior forest habitat located >200 m from the forest edge in large (>30 ha) forest stands. Woodlands on-site meet the definind size criteria.

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

General Habitats of Species of Conservation Concern	Further Considered in EIS	Rationale
Marsh Breeding Bird Habitat	No	Suitable habitat not present on-site to support marsh breeding birds.
Open Country Breeding Bird Habitat	No	Suitable meadow habitat does occur on-site to support open country bird breeding habitat however, upland habitat does not meet the minimum size criteria of > 30 ha.
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 succesional 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: barn swallow, eatern wood-pewee, wood thrush and snapping turtle.

TABLE C.6
SCREENING RATIONALE FOR ANIMAL MOVEMENT CORRIDORS

General Habitats of Species of Conservation Concern	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	Regional Distribution	Habitat Use	Probability of Occurrence On-Site or Within Study Area	Rationale
Avian					
Bank Swallow	Threatened	12 confirmed, 2 probable and 8 possible nests in recent OBBA.	Colonial nester, burrows in eroding silt, to sand banks, sand pit walls, etc.	Low	Suitable cliffs, banks or dune habitat not present on-site for species.
Barn Swallow	Special Concern	33 confirmed, 2 probable, and 3 possible nests in recent OBBA.	Nests in barns and other semi-open structures. Forages over open fields and meadows.	Moderate	Suitable grassland habitat available for foraging on-site and structures present within the broader study area to provide nesting habitat. OBBA data indicates species has been observed within 1 km of the site. Species was not observed on-site during field investigations.
Bobolink	Threatened	Widespread, confirmed or probable nests found in 39 of 40 local atlas squares during recent OBBA. Critical habitat identified in northwestern, southern and eastern Ottawa.	Nests in dense tall grass fields and meadows, low tolerance for woody vegetation.	Moderate	Suitable grassland habitat available on-site and within the study area. NHIC data indicates species has been observed within 1 km of the site. Species was not observed on-site during field investigations.
Canada Warbler	Special Concern	1 confirmed, 2 probable, 6 possible nests during recent OBBA. No critical habitat identified in region.	Prefers wet forests with dense shrub layers	Low	Suitable forest habitat on-site to support Canada warbler. No historical data records for species within the study area. Species was not observed on-site during field investigations.
Cerulean Warbler	Threatened	No nests reported during recent OBBA. SARO and SARA range maps include part of Ottawa.	Prefers mature deciduous forest habitat.	Low	Suitable forest habitat on-site to support cerulean warbler. No historical data records for species within the study area. Species was not observed on-site during field investigations.
Chimney Swift	Threatened	3 confirmed, 2 probable, and 11 possible nests in recent OBBA.	Nests in traditional-style open brick chimneys.	Low	Suitable nesting structures may be present within the broader study area. No historical data records for species within the study area. Species was not observed on-site during field investigations.
Common Nighthawk	Special Concern	6 probable, 5 possible nests reported in recent OBBA. No critical habitat identified in Ottawa region.	Nests in a variety of open sites: beaches, fields and gravel rooftops.	Low	Potentially suitable forest habitat on-site to support common nighthawk. No historical data records for species within the study area. Species was not observed on-site during field investigations.
Eastern Meadowlark	Threatened	22 confirmed, 11 probable and 3 possible nests reported in recent OBBA. Critical habitat identified in northwestern Ottawa.	Nests and forages in dense tall grass fields and meadows, higher tolerance to woody vegetation.	High	Suitable grassland habitat available on-site and within the study area. NHIC data indicates species has been observed within 1 km of the site. Species was observed on-site during field investigations.
Eastern Whip-poor-will	Threatened	7 squares with probable nests and 10 with possible nests in recent OBBA. Critical habitat tentatively identified in 4 squares in western Ottawa.	Nests on the ground in open deciduous or mixed woodlands with little underbrush, and bedrock outcrops.	Low	Suitable forest habitat on-site and within the study area to support eastern whip-poor-will. No historical data records for species within the study area. Species was not observed on-site during field investigations.
Eastern Wood-Pewee	Special Concern	4 possible, 15 probable and 19 confirmed nests in recent OBBA for Ottawa area	Woodland species, often found near clearings and edge habitat.	High	Suitable habitat on-site and within the study area to support eastern wood pewee. NHIC data indicates species has been observed within 1 km of the site. Species was observed on-site during field investigations.
Evening Grosbeak	Special Concern	5 confirmed, 6 probable, 8 possible nests in recent OBBA.	Nests in trees or large shrubs, preference to large coniferous forests, will use deciduous. Overwinters in Ottawa.	Low	Suitable coniferous forest habitat does occur on-site. Spceies was not observed during field investigations.

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

Golden-winged Warbler	Special Concern	1 confirmed, 1 probable nest in recent OBBA. Critical habitat identified in Quebec, northwest of Ottawa.	Ground nesting, edge species. Breeds in successional scrub habitats surrounded by forests.	Low	Suitable thicket habitat not present on-site or within the study area. No historical data records for species within the study area. Species not observed during field investigations.
Grasshopper Sparrow	Special Concern	4 confirmed, 5 probable and 2 possible nests in recent OBBA.	Ground-nesting grassland species. Prefers fields with low sparse vegetation on sand, alvars or poor soils.	Low	Suitable grassland habitat on-site and within the study area to support grasshopper sparrow. Species was not observed on-site during field investigations. No historical data records for species within the study area.
Least Bittern	Threatened	Confirmed nesting in 1 square, 3 probable and 4 possible in recent OBBA. Mississippi Snye identified as critical habitat.	Prefers marshes, shrub swamps, usually near cattails	Low	No suitable marsh habitat on-site or within the study arean. No historical data records for species within the study area. Species was not observed during field investigations.
Loggerhead Shrike	Endangered	Possible nests in Burnt Lands Provincial Park and Richmond area. Critical habitat in Montague Township, however no confirmed nests since 2002.	Prefers grazed pastures with short grass and scattered shrubs, especially hawthorn.	Low	Preferred pasture habitat and shrub vegetation does not occur on-site. No historical data records for species within the study area.
Olive-sided Flycatcher	Special Concern	1 probable, 1 possible nest in recent OBBA.	Forest edge species, forages in open areas from high vantage points in trees.	Low	Preferred habitat present on-site and within the study area. Species was not observed during the field investigation, nor through any online databases.
Peregrine Falcon	Special Concern	1 confirmed nest in recent OBBA and second nest established in 2011 in the Ottawa downtown.	Nests on cliffs near water and on more anthropogenic structures such as tall buildings, bridges, and smokestacks.	Low	Site lacks suitable nesting structure for peregrine falcon.
Red-headed Woodpecker	Endangered	1 confirmed, 1 probable and 2 possible during recent OBBA. Critical habitat identified in western Ottawa. Nesting pair reported from village of Constance Bay in recent years.	Prefers open deciduous woodlands.	Low	Suitable deciduous forest habitat is not present on-site or within the broader study area. No historical records for species in study area. Species not observed on-site.
Rusty Blackbird	Special Concern	No nests in recent OBBA. Primarily observed during migration.	Wet wooded or shrubby areas (nests at edges of Boreal wetlands)	Low	Suitable habitat does not occur on-site or within the study area.
Short-eared Owl	Threatened	1 confirmed, 2 probable, 2 possible nests in recent OBBA.	Ground nester, prefers open habitats, fields and marshes.	Low	Suitable field habitat present on-site or within the study area. Species not observed on-site. No historical occurrence records for species on-site or within the study area.
Wood Thrush	Special Concern	5 possible, 15 probable, and 16 confirmed nests in recent OBBA for Ottawa area.	Prefers deciduous or mixed woodlands.	High	Suitable woodland habitat available on-site and within the broader study area. NHIC data indicates species has been observed within 1 km of the site. Species observed on-site during field investigations.
Mammalian					
Eastern small-footed Myotis	Endangered	Historical record in downtown Ottawa.	Roosts in rock crevices, barns and sheds. Overwinters in caves and 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 on-site and adjacent to site. Available habitat on-site may meet bat maternity colony requirements and provide foraging and non-maternal roost habitat.
Little Brown Myotis	Endangered	Various sites in central and western parts of City. Critical habitat (hibernacula) identified to northwest of Ottawa.	Maternal colonies known to use buildings, may also roost in trees during summer. Affinity towards anthropogenic structures for summer roosting habitat and exhibit high site fidelity (Environment Canada, 2015).	Moderate	Potentially suitable anthropogenic structures on-site and adjacent to site. Available habitat on-site may meet bat maternity colony requirements and provide foraging and non-maternal roost habitat.

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

Northern myotis (Northern Long-eared Bat)	Endangered	Historical record in downtown Ottawa, more recent sites in east (Orleans, Clarence-Rockland). Critical habitat (hibernacula) identified to northwest of Ottawa.	Occurs throughout eastern North America in associated with Boreal forests. Roosts mainly in trees, occasionally anthropogenic structures during summer (Environment Canada, 2015). Overwinters in caves and abandoned mines.	Low	Species affinity is for Boreal forests and rarely roosts in anthropogenic structures.
Tri-colored Bat (East Pipistrelle)	Endangered	Unknown; historical records from sites in urban Ottawa, Lanark County. Critical habitat (hibernacula) identified to northwest of Ottawa.	Roosts in trees, rock crevices and occasionally buildings during summer. Overwinters in caves and mines.	Moderate	Potentially suitable anthropogenic structures on-site and adjacent to site. Available habitat on-site may meet bat maternity colony requirements and provide foraging and non-maternal roost habitat.
Reptilian					
Blanding's Turtle	Threatened	Scattered throughout, with numerous sites in western half of City. Critical habitat present in Ottawa.	Inhabits quiet lakes, streams and wetlands with abundant emergent vegetation. Frequently occurs in adjacent upland forests.	Moderate	NHIC data indicates species has been observed within 1 km of the site. The site may provide potentially suitable aquatic transient habitat for Blanding's turtle.
Snapping Turtle	Special Concern	Widespread	Highly aquatic species, found in a wide variety of wetlands, water bodies and watercourses.	Moderate	Based on data obtained from the Herp Atlas (Ontario Nature, 2019), snapping turtle has been observed 4 times between 2017 and 2019 within the 10 km2 grid square that encompasses the site. The site may provide potentially suitable aquatic transient habitat for snapping turtle.
Plants					
American Ginseng	Threatened	Various. Critical habitat broadly identified in Ottawa area.	Rich, moist, relatively mature deciduous forests.	Low	Suitable habitat may occur on-site. No historical data records for species within the study area. Species was not observed on-site during field investigation.
Black Ash	Endangered	Scattered throughout.	Predominantly a wetland species, found in swamps, floodplains and fens.	High	Suitable wet forest habitat present on-site and within the study area. Species observed on-site during field investigations.
Butternut	Endangered	Widespread	Inhabits a wide range of habitats including upland and lowland deciduous and mixed forests.	Low	Potentially suitable areas in a regenerative state on-site. Species was not identified on-site during the site investigation. No occurrence record for species on-site or within broader study area.
Insects					
American Bumble Bee	Special Concern	Unknown; COSEWIC identifies historical sightings in Ottawa and one nearby sighting in 2012.	Habitat generalist; mixed woodlands, variety of open habitat. Nests at or above ground leve, often in mats of long grass but also in other available shelters.	Moderate	Potentially suitable foraging habitat available for American bumble bee on-site.
Bogbean Buckmoth	Endangered	Richmond Fen	Preferred food plant is bog bean, present in a variety of wetlands including bogs, swamps and fens.	Low	Preferred wetland habitat is not present on-site.
Gypsy Cuckoo Bumble Bee	Endangered	Historic occurrences only. Range in Ontario uncertain.	Inhabits a wide range of habitats: open meadows, agricultural and urban areas, boreal forests and woodlands.	Low	Currently the only known population is in Pinery Provincial Park
Monarch Butterfly	Special Concern	Widespread	Caterpillars require milkweed plants confined to meadow and open areas. Adult butterflies use more diverse habitat with a variety of wildflowers	Moderate	Potentially suitable foraging vegetation available for Monarch on-site.
Mottled Duskywing	Endangered	Constance Bay area, Burnt Lands Alvar	Larval food plant (New Jersey Tea) found in sandy areas and alvars.	Low	Sandy areas and alvars not present in the study area.
Nine-spotted Lady Beetle	Endangered	Historically present but no reports in Ontario since mid-1990s	Habitat generalist	Low	No recent occurrence reports in the area, thought to be locally extirpated.
Rapids Clubtail	Threatened	None known	Occurs along Mississippi River in area upstram of City.	Low	Preferred aquatic habitat not present on-site.

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

Rusty-patched Bumble Bee	Endangered	Historic records in Ottawa and Gatineau	Habitat generalist	Low	Currently the only known population occurs in Pinery Provincial Park.
Transverse Lady Beetle	Endangered	Unknown in Ottawa region. No southern Ontario records since 1985	Habitat generalist	Low	No new records of traverse lady beetle in Ottawa area, species thought to be absent in former habitats.
West Virginia White Butterfly	Special Concern	Unknown. No NESS or NHIC records. SARO range map includes Ottawa.	Requires mature moist deciduous woods with larval host plant toothwort.	Low	Necessary vegetation and toothwort plant are not present on-site or within study area.
Yellow-banded Bumble Bee	Special Concern	Unknown. Historic occurrences and a few recent occurrences in Eastern Ontario/Western Quebec region.	Habitat generalist; mixed woodlands, variety of open habitat	Moderate	Potentially suitable foraging habitat available for yellow-banded bumble bee on-site.

APPENDIX D

General Habitat Description – Blanding's Turtle, Eastern Meadowlark

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

July 2013 - Updated March 2021

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:*

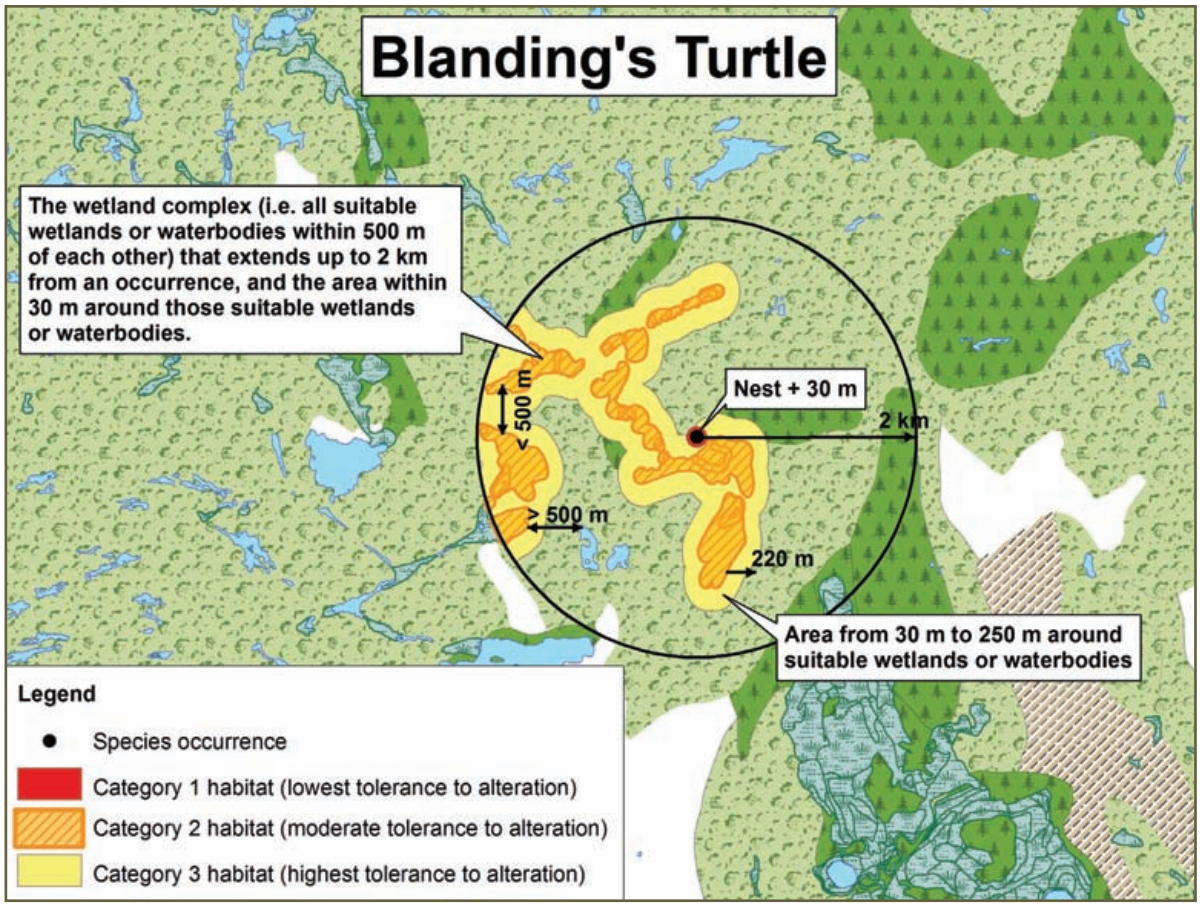
- Significant draining, infilling, dredging, or other significant alteration of wetlands or other suitable waterbodies.
- Significant alteration of shorelines, especially hardening (e.g. the use of gabion baskets, rip-rap, and rock armour).

* If you are considering an activity that may not be compatible with general habitat, please visit the species at risk website or contact SAROntario@ontario.ca 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



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Eastern Meadowlark General Habitat Description

This document is a technical, science-based description of the area of habitat protected for the Eastern Meadowlark.

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 10 m of the nest
2. The area between 10 m and 100 m of the nest or centre of approximated defended territory
3. The area of continuous suitable habitat between 100 m and 300 m of the nest or approximated centre of defended territory

Category 1

Eastern Meadowlark nests and the area immediately around the nest (i.e., 10 m) are highly sensitive features supporting the species' reproduction life cycle and have the lowest tolerance to alteration. These are areas the species depends on for egg laying, incubation, and rearing of young. Nests are used daily during the nesting season (~20-30 days). Juveniles continue to receive parental care for 2 weeks following fledging. During the first week after fledging, juveniles are not capable of extended flights and rely on areas surrounding the nest site to gain experience flying and to obtain food. At 1-3 days post-fledging, juvenile movements are restricted to hopping through grass and short flights or glides between 5 and 10 m (Kershner 2004). The area immediately surrounding the nest (i.e., 10 m) is important to maintain the microclimate around the nest and provide cover from predators.

It is important to note that Eastern Meadowlark nests are rarely identified due to their cryptic nature. It is inadvisable to search for nests as this may inadvertently jeopardize the nesting site and/or offspring. However, if a nest is identified, it and the area within 10 m shall be categorized as Category 1.

Category 2

The area between 10 m and 100 m of the nest or centre of approximated defended territory is included in Category 2 and is considered to have a moderate level of tolerance to alteration. This area includes the species' defended territory and is depended on daily for courtship, mating, rearing of young, feeding, resting, and bathing. Suitable habitat for this species includes but is not limited to pastures, hayfields, old or abandoned fields, and native prairies and savannahs (McCracken et al. 2013). Breeding males demonstrate strong territoriality during the breeding season (COSEWIC 2011). Eastern Meadowlark defended territories range from 1.2-6.1 ha and are on average 2.8-3.2 ha in size (or approximately the area within 100 m of a nest) (Lanyon 1995). Due to the polygynous nature of Eastern Meadowlarks, one territory may support multiple females and their nests. Both males and females show site fidelity to previously used breeding sites (Lanyon 1957, 1995).

Category 3

The area of continuous suitable habitat between 100 m and 300 m of a nest or centre of approximated defended territory is included in Category 3 and will be considered to have a high level of tolerance to alteration. Eastern Meadowlarks depend on this area for feeding, rearing of young, resting, dispersal and concealment from predators. This area also helps maintain the function of both Category 1 and 2 habitat. Suitable habitat for this species includes but is not limited to pastures, hayfields, old or abandoned fields, and native prairies and savannahs (McCracken et al. 2013).

Eastern Meadowlarks are grassland-dependent species but may not be strongly area-sensitive (McCracken et al. 2013). Studies in the U.S. have shown that breeding density was not influenced by patch size and the species was not affected by edge density, distance to another patch of grassland or forest, cover, patch size or core area of grassland (Bollinger 1995, Winter 1998, Horn et al. 2000, McCracken et al. 2013). Nevertheless, other studies have suggested that large tracts of grasslands are preferred over smaller fragments (Herkert 1991, Vickery et al. 1994) and that there may be regional differences in the degree of sensitivity to habitat fragmentation (O'Leary and Nyberg 2000, Hull 2003, Renfrew and Ribic 2008). Minimum patch area requirements to support breeding habitat for the species have been reported at 5 ha (Herkert 1994) however abundance and productivity are higher in larger patches and in patches surrounded by other open habitats (Herkert et al. 2003, Bollinger and Gavin 2004, Ribic and Sample 2005, Keyel et al. 2011, McCracken et al. 2013).

Activities in Eastern Meadowlark 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:

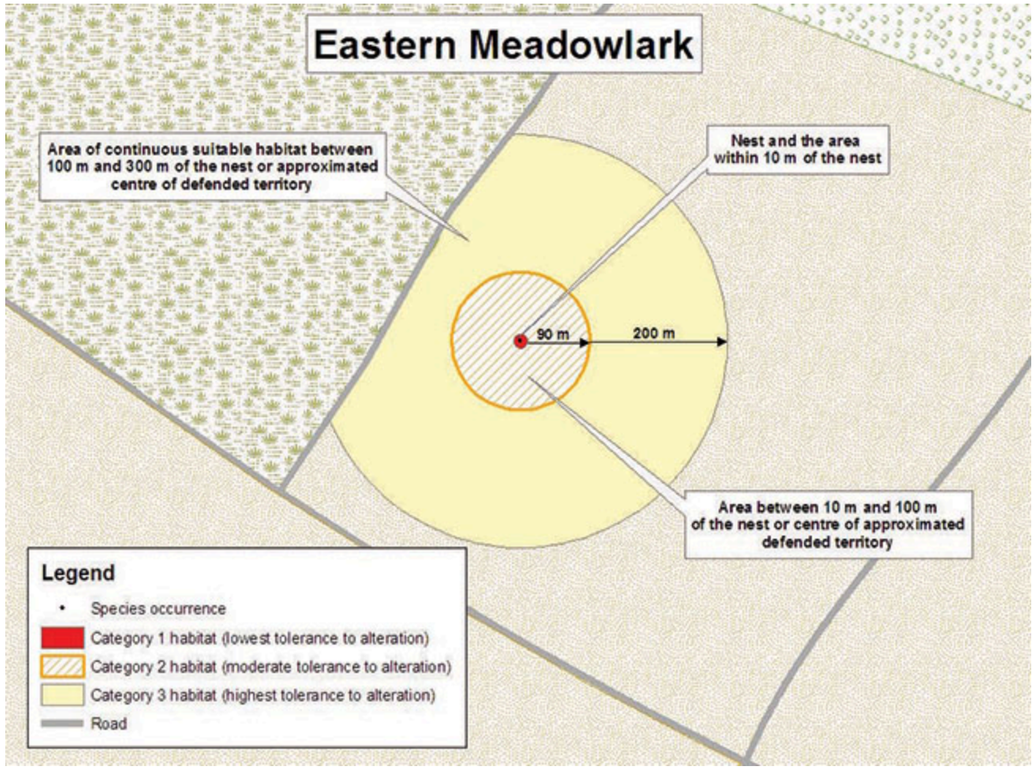
- Continuation of existing agricultural practices and planned management activities such as annual harvest, mowing, and rotational cattle
- Hiking and non-motorized vehicle use on existing recreational
- General yard work such as lawn care and

Generally not compatible[*]:

- Development activities that result in significant fragmentation or removal of large tracts of suitable
- Indiscriminate application of pesticides within

Sample application of the general habitat protection for Eastern Meadowlark

Map1: Sample application of the general habitat protection for Eastern Meadowlark



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Footnotes

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

experience • knowledge • integrity

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

expérience • connaissance • intégrité