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**Environmental Impact Statement
Proposed Plan of Subdivision
Part of Lot 18, Concession 3
Geographic Township of Beckwith
Lanark County**





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Submitted to:

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Part of Lot 18, Concession 3
Geographic Township of Beckwith
Lanark County**

August 14, 2025
Project: 100165.004 - Rev1

EXECUTIVE SUMMARY

GEMTEC Consulting Engineers and Scientists Limited (GEMTEC) was retained by M Signature Homes to complete an Environmental Impact Statement (EIS) for the property located on part of Lot 18, Concession 3 in the Geographic Township of Beckwith, Lanark County, Ontario. This EIS has been completed in support of a proposed plan of subdivision 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 numerous 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 throughout the spring and summer of 2021 and 2025. The focus of the field investigations was to describe, in general, the natural and physical setting of the subject property with a focus on confirming the presence or absence of natural heritage features and potential SAR or their habitat as identified in the desktop review.

Following completion of the desktop review and field investigations the following natural heritage features were identified on-site or within the study area: local wetlands and fish habitat, significant wildlife habitat for woodland amphibian breeding habitat (*confirmed*), and special concern and rare wildlife habitat (eastern wood-pewee and eastern whip-poor-will). The following SAR and their habitat were identified as having a potential to occur on-site: eastern red bat, eastern small-foot myotis, hoary bat, little brown myotis, silver-haired bat, tri-colored bat, butternut, and black ash. No butternut trees were observed on-site. Black ash was observed within the swamp on-site.

Potential impacts to the natural heritage features were primarily associated with the loss of woodland and forest habitat, the loss of wetland habitat, and indirect impacts to local wetlands, significant wildlife habitat and fish habitat. Impacts to local wetlands, significant wildlife habitat and fish habitat include the loss of wetland habitat to permit the subdivision access road as well as indirect impacts associated with alterations to water quality through increased nutrient and sediment loading.

Potential impacts to natural heritage features on-site are likely to be mitigated through the implementation of development setbacks from surface water features. For the protection of the on-site local wetlands and associated fish habitat and significant wildlife habitat, a 30 m setback is recommended. As black ash was identified on-site, a black ash health assessment is recommended to determine the health of black ash on-site prior to disturbance.

Additionally, to provide additional protection to potential SAR and their habitat on-site, reptile and amphibian exclusion fencing should be installed around all future construction areas prior to any development or site alteration, to prevent the immigration of SAR turtles and other wildlife into the construction area. Should any SAR be discovered throughout the course of any development on-site, operations should stop and the species at risk biologist with the local MECP district should

be contacted immediately for further direction. Furthermore, to ensure compliance with applicable legislation, all best management practices and adherence to vegetation clearing for birds and bats, outlined in Section 7 should be followed to ensure no negative impacts occur to natural heritage features on-site.

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

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1.0 INTRODUCTION

GEMTEC Consulting Engineers and Scientists Limited (GEMTEC) was retained by M Signature Homes to carry out an Environmental Impact Statement (EIS) for the property located on Part of Lot 18, Concession 3, in the Geographic Township of Beckwith, FORMTEXT |Lanark County (hereafter referred to as “the subject property”). The general location of the subject property is illustrated on Figure A.1 in Appendix A.

1.1 Purpose

The proponent is seeking to develop a large, approximately 34 hectare (ha) property into a future residential subdivision. Based on Section 5 of the Lanark County Official Plan (Lanark County, 2012) an EIS is required showing that the proposed plan of subdivision will not negatively impact any potential natural heritage features which may be present within the study area. The study area is defined as the property boundary and the adjacent lands encompassing an area of 120 m beyond the property boundary. The subject project and the extents of the study area are illustrated on Figure A.2.

1.2 Objective

The 2024 Provincial Planning Statement (MMAH, 2024) issued under Section 3 of the Planning Act states that “development and site alteration shall not be permitted in: habitats of species at risk, significant wetlands, significant woodlands and significant wildlife habitat unless it has been demonstrated that there will be no negative impacts on the natural features or their ecological functions.” Similarly, the 2024 Provincial Planning Statement dictates that ‘development and site alteration shall not be permitted in fish habitat except in accordance with provincial and federal requirements.”

The objective of the work presented herein is twofold; 1) to identify and evaluate the significance of any natural heritage features, as defined in the Provincial Planning Statement (MMAH, 2024), on the subject property and within the broader study area and; 2) to assess the potential impacts from the proposed plan of subdivision 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);
- Fisheries Act (Canada, 1984);
- Conservation Authorities Act (Ontario, 1990);
- Migratory Birds Convention Act (Government of Canada, 1994);
- Invasive Species Act (Ontario, 2015);

- Natural Heritage Reference Manual (OMNR, 2010);
- Township of Beckwith Official Plan (Beckwith, 2027) and
- Lanark County Official Plan (Lanark County, 2012).

1.3 Physical Setting

The subject property is located on part of Lot 18, Concession 3, in the Geographic Township of Beckwith, Lanark County, and is comprised of a swamp, coniferous woodlands, and cultural thickets. The subject property is bound to the north by Richmond Road (County Road 10) and to the south by the Concession 2 and Concession 3 Road allowance. To the east the site is bound by the neighboring property of Lot 18, Concession 3 and to the west the site is bound by neighbouring lots on Lot 17, Concession 3.

1.4 Land Use Context

The subject property is situated within a larger rural residential-agricultural area. The existing land use designation from the Lanark County OP is rural area. The land-use from Beckwith Township is rural lands, the zoning by-law from the township is rural (RU).

2.0 METHODOLOGY

2.1 Desktop Review

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

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

- Make A Map: Natural Heritage Areas (OMNRF, 2014a);
- Land Information Ontario (OMNR, 2011c);
- Lanark County Official Plan (Lanark County, 2012);
- Ontario Geological Survey (OGS, 2019);
- Fisheries and Oceans Canada SAR Maps (DFO, 2019);
- Natural Heritage Information Centre Biodiversity Explorer (OMNRF, 2013);
- Breeding Bird Atlas of Ontario (Cadman et al., 2007)
- Atlas of Mammals of Ontario (Dobbyn, 1994);
- Ontario Herpetofaunal Atlas (Oldham and Weller, 2000);
- Ontario Ordonata Atlas (OMNR, 2005); and
- Ontario Reptile and Amphibian Atlas (Ontario Nature, 2019).

2.2 Field Investigations

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

Field investigations completed in support of this EIS are outlined in Table 2.1 below. Photographs of site features taken during field investigations are provided in Appendix B.

Table 2.1 Summary of Field Investigations

Date	Time	Weather	Purpose
April 9, 2021	08:15-15:00	14°C, ~30% cloud cover, Beaufort 1, no precipitation	Preliminary Constraints, Bat Maternity Roost Survey
April 13, 2021	09:35-12:30	13°C, ~90% cloud cover, Beaufort 0, no precipitation	Amphibian Breeding Survey
May 19, 2021	12:30-17:00	24°C, ~40% cloud cover, Beaufort 1, no precipitation	Amphibian Breeding Survey, Whip-poor-will Breeding Survey
June 1, 2021	04:15-04:45	13°C, ~50% cloud cover, Beaufort 1, light precipitation	Whip-poor-will Breeding Survey
June 2, 2021	08:25-10:15	17°C, ~30% cloud cover, Beaufort 1, no precipitation	Breeding Bird Survey, Ecological Land Classification
June 17, 2021	09:30-10:10	17°C, ~10% cloud cover, Beaufort 3, no precipitation	Breeding Bird Survey
June 22, 2021	05:40-07:45	12°C, ~90% cloud cover, Beaufort 2, no precipitation	Breeding Bird Survey, Ecological Land Classification
June 24, 2021	00:37-01:30	21°C, ~70% cloud cover, Beaufort 1, no precipitation	Whip-poor-will Breeding Survey
June 29, 2021	05:15-7:10	19°C, ~60% cloud cover, Beaufort 0, no precipitation	Breeding Bird Survey
July 6, 2021	21:15-23:15	23°C, ~100% cloud cover, Beaufort 3, light precipitation	Amphibian Breeding Survey
May 13, 2025	11:30 – 14:00	24°C, ~65% cloud cover, Beaufort 2, no precipitation	Ecological Land Classification

2.2.1 Ecological Land Classification

Vegetation communities on the subject property were delineated during the desktop review stage of this EIS using publicly available air photos and confirmed in the field on June 2 and June 22, 2021, following the Ecological Land Classification System for Southern Ontario (Lee et al., 2008). Vegetation communities were re-confirmed during the 2025 field investigation. 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 in 2021 on four occasions at eight point count locations; breeding bird survey locations are provided on Figure A.2 in Appendix A. 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). Surveys were conducted no earlier than 30

minutes before sunrise and were completed within 5 hours of sunrise, to encompass peak song bird activity. Breeding bird surveys consisted of 5 minutes of passive listening in which all birds heard or seen within the survey period were recorded, including species, sex and breeding behaviour, if possible.

A list of all avian species identified on-site is provided in Table C.1 in Appendix C.

2.2.3 Amphibian Breeding Surveys

Amphibian breeding surveys were conducted in 2021 on three occasions at three point count locations; breeding amphibian survey locations are provide on Figure A.2. Breeding amphibian surveys followed protocols from the Marsh Monitoring Program (Bird Studies Canada, 2008). Surveys were conducted no earlier than 30 minutes after sunset and were completed by midnight, to encompass peak amphibian calling activity. Breeding amphibian surveys consisted of 3 minutes of passive listening in which all amphibians calling during the survey period were recorded, along with their call code.

A list of all amphibian species identified on-site is provided in Table C.1 in Appendix C.

2.2.4 Nocturnal Whip-Poor-Will Surveys

Nocturnal whip-poor-will surveys were conducted in 2021 on three occasions at two point count locations; whip-poor-will survey locations are provided on Figure A.2. Whip-poor-will surveys followed protocols from the MNRF (MNRF, 2014). Surveys were completed on May 19, June 1 and June 24, 2021.

2.2.5 Bat Maternity Roost Surveys

Potential bat maternity roosting sites were surveyed for in each forested ecosite on-site on November 26, 2019, following the protocol for identifying candidate maternity roosts outlined in the OMNR (2011a) Bats and Bat Habitats: Guidelines for Wind Power Projects.

2.3 Data Analysis

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

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

3.0 EXISTING ENVIRONMENT

3.1 Ecoregion

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

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

3.2 Study Area Land Use

Figure 1 below illustrates the land use changes on-site and within the study area from 1985 to 2024. A review of available aerial photographs indicates that the subject property and surround area have not undergone and major changes in land use since 1985.

The 1985 aerial photograph shows that the majority of the subject property and surrounding area are occupied by agricultural lands and forested habitats.

The 2009 aerial imagery illustrates a small increase in single family residential development along Richmond Road compared to the 1985 aerial photograph.

By 2015, the surrounding study area is in an identical state to the present-day land-use, apart from vegetation removal and slight excavation on-site, as illustrated in the 2024 imagery. The study area primarily consists of single-family residential properties, active agricultural fields, fallow pastures and forested habitats. No major changes to land use within the study area have occurred since 2024.

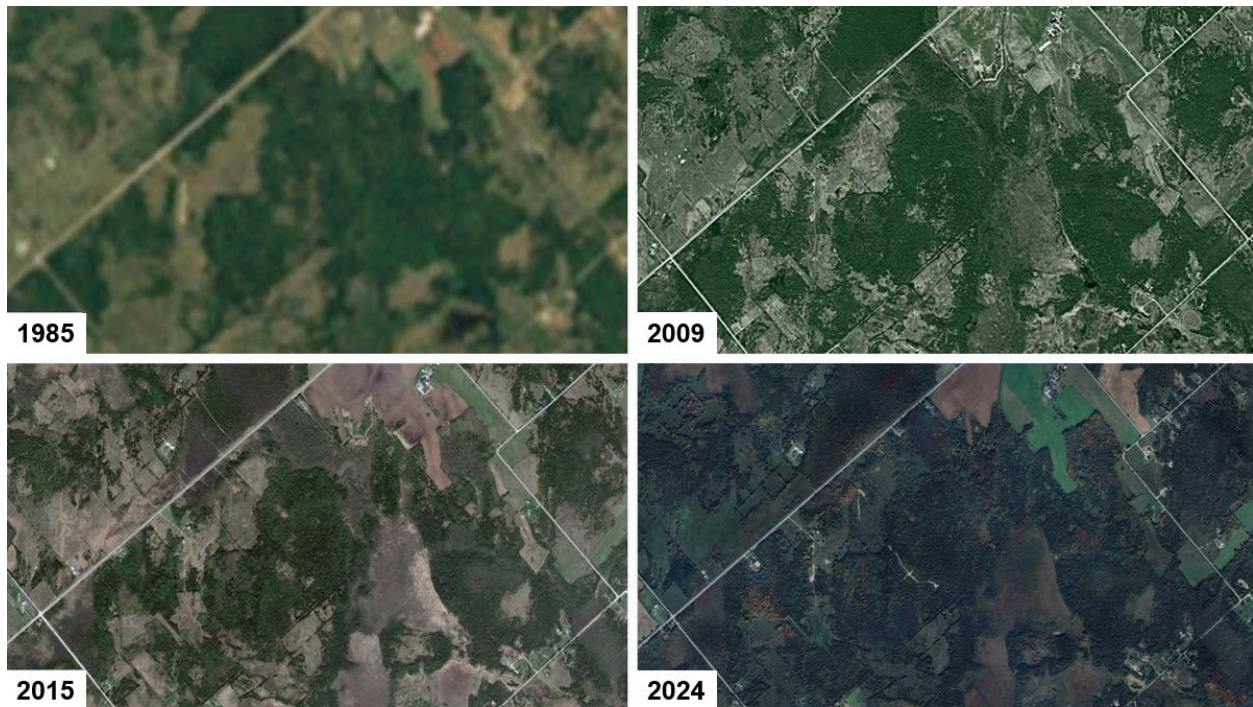


Figure 1. Temporal Changes in Land Use

3.3 Landforms, Soils and Bedrock Geology

The topography of the site is relatively flat, with a gentle downward slope from a topographical high of 135 mASL to a topographical low of 131 mASL towards the southeast corner of the property.

Two topographical landforms, as mapped by Chapman and Putnam (1984) are described on the subject property: limestone plains and peat and muck deposits of the Smiths Falls Limestone Plains physiographic region. Limestone plains occur throughout the northwest and extreme southwest portions of the property, whereas peat and muck deposits are found throughout the extreme northern, centre and southeast portions of the property.

The Ontario Geological Survey (OGS, 2019) identifies two surficial soil units on the subject property, the largest of which is a bedrock-drift complex in Paleozoic terrain that occurs in two large bands across the northern and the extreme southern portion of the property. The next largest surficial soil unit on site are organic deposits comprised of peat, muck and marl occurring in the northwest corner and centre of the property.

Bedrock at the site, as described by OGS (2019) is composed entirely of the Beekmantown Group comprised of dolostone and sandstone.

3.4 Surface Water, Groundwater and Fish Habitat

Surface water on the subject property consists of a single unevaluated wetland occurring along the northern property boundary, adjacent to Richmond Road. No other surface water features were identified on-site.

A fisheries assessment was not conducted as part of this EIS until such a time that a fisheries assessment is completed the local wetland on-site is assumed to provide fish habitat for small-bodied fish species.

Groundwater investigations were not completed in support of this EIS.

3.5 Vegetation Communities

Vegetation communities on-site were confirmed by GEMTEC in 2021 and 2025, following protocols utilized in the Southern Ontario Ecological Land Classification System (Lee et al., 2008). Vegetation at the site represents a mosaic of forests, cultural thickets, swamps, and constructed areas. Table 3.1 below provides a summary of the various vegetation communities identified on-site while Figure A.3 in Appendix A provides an illustration of the various vegetation communities.

Table 3.1 Vegetation Communities On-site

ELC Type	Description	Size (ha)
Dry White Cedar Calcareous Bedrock Coniferous Forest (FOC2-2)	Located throughout the rear end of the property is a white cedar bedrock coniferous forest. This community was dominated by eastern white cedar (<i>Thuja occidentalis</i>), with common associates of white spruce (<i>Picea glauca</i>), balsam fir (<i>Abies balsamea</i>) and trembling aspen (<i>Populus tremuloides</i>). The canopy was patchy and relatively open. Subcanopy was primarily populated by saplings of the dominant tree species and herbaceous layer was sparse but included grass and Canada mayflower (<i>Maianthemum canadense</i>).	16.75
Fresh-Moist White Cedar Coniferous Forest (FOC4-1)	Located along the boundary of the ash swamp, at the north end of the property, is a white cedar coniferous forest. This community was dominated almost entirely by eastern white cedar. The subcanopy was comprised of balsam fir and largetooth aspen (<i>Populus grandidentata</i>). The herbaceous layer was sparsely populated and consisted of Canada mayflower and trillium (<i>Trillium grandiflorum</i>).	1.32
Dry – Fresh Sugar Maple Deciduous Forest (FODM5)	Located along the boundary of the cultural thicket, at the north end of the property, is a sugar maple deciduous forest. This community was dominated by sugar maple, and to a lesser extent red maple (<i>Acer rubrum</i>), ironwood (<i>Ostrya virginiana</i>), and red oak (<i>Quercus rubra</i>). The subcanopy was sparse and was comprised of white spruce and ironwood. Herbaceous vegetation included grass, yellow trout lily	0.83

ELC Type	Description	Size (ha)
	(<i>Erythronium americanum</i>), blue cohosh (<i>Caulophyllum thalictroides</i>), hairy solomon's seal (<i>Polygonatum pubescens</i>), bloodroot (<i>Sanguinaria canadensis</i>), northern lady fern (<i>Athyrium filix-femina</i>), and trillium.	
Cultural Thicket (CUT)	Located throughout the north central portion of the property, and occurring in a small section in the south is a cultural thicket. This community was dominated by shrubs, with minimal tree and canopy cover. Dominant species included buckthorn (<i>Rhamnus</i> sp.), chokecherry (<i>Prunus</i> sp.), and saplings of eastern white cedar, bur oak (<i>Quercus macrocarpa</i>), white ash (<i>Fraxinus americana</i>), and trembling aspen. Herbaceous layer was populated by a variety of grasses and forbs, including: common juniper (<i>Juniperus communis</i>), common milkweed (<i>Asclepias syriaca</i>), dandelion (<i>Taraxacum officinale</i>), aster (<i>Aster</i> sp.), great mullein (<i>Verbascum thapsus</i>), common yarrow (<i>Achillea millefolium</i>), goldenrod (<i>Solidago</i> sp.), Virginia strawberry (<i>Fragaria virginiana</i>), wild carrot (<i>Daucus carota</i>) and red clover (<i>Trifolium pratense</i>).	11.92
Ash Mineral Swamp (SWD2)	Occurring along the north edge of the property, adjacent to Richmond Road is an ash mineral swamp. This community was dominated by green ash (<i>Fraxinus pennsylvanica</i>). Lesser constituents included black ash (<i>Fraxinus nigra</i>). The canopy was extremely patchy and the shrub layer was sparse. The herbaceous layer was mostly concentrated along Richmond Road and was primarily composed of reed canary grass (<i>Phalaris arundinacea</i>) with slender cattail (<i>Typha latifolia</i>).	2.65
Constructed (CV)	Located throughout the central portion of the property is a disturbed, constructed area. Vegetation was sparse and isolated to the edge of this community. Herbaceous vegetation included wild carrot, dandelion, great mullein, aster, common blue violet, and common yarrow.	0.57

3.6 Wildlife

Wildlife observed on-site and within the study area during field investigations completed in 2021 and 2025 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, *significant habitats of endangered species and threatened species, significant wildlife habitat* and *significant areas of natural and scientific interest*, which are important for their environmental and social values as a legacy of the natural landscape of an area”.

4.1 Significant Wetlands

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

No significant wetlands were identified on-site or within the study area during the desktop review or any of the field investigations. As no significant wetlands occur on-site or within the study area, significant wetlands are not evaluated or discussed further in this EIS.

A single local, unevaluated wetland occurs on-site, in a small band along the north property boundary, adjacent to Richmond Road. A series of local, unevaluated wetlands occur off-site to the southeast, along the limits of the study area. Potential impacts to unevaluated wetlands are discussed in Section 6 below.

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.

Table C.2 in Appendix C, presents the screening rationale for significant woodlands applied in this EIS. The Official Plan of the Township of Beckwith did not identify any significant woodland within the planning area. The Lanark County Official Plan Schedule A also does not indicate that any of the woodland present on-site is significant. For comparison of woodland criteria used in

Table C.2, outlined in the natural heritage reference manual (OMNR, 2010) it is assumed that the woodland coverage within the planning area is between 30% and 60% of the land area, therefore the minimum woodland size for determining significance is 50 ha or greater.

As outlined in the Natural Heritage Reference Manual (OMNR, 2010), the identification of significant woodlands and inclusion within the natural heritage system overlay for the planning jurisdiction is the responsibility of the regional planning authorities. As indicated neither the Township of Beckwith nor the County of Lanark have included the on-site woodlands within their respective natural heritage systems.

Accordingly, significant woodlands are not identified or discussed further in this EIS.

4.3 Significant Valleylands

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

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

As discussed in Section 3.2, the site is relatively flat and no valleylands have been identified on-site, as such valleylands are not discussed or evaluated further in this EIS.

4.4 Significant Areas of Natural and Scientific Interest

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

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

4.5 Significant Wildlife Habitat

The natural heritage reference manual (OMNR, 2010), in combination with the significant wildlife habitat technical guide (OMNR, 2000) and the significant wildlife habitat ecoregion criterion

schedules (OMNRF, 2015) were used to identify and evaluate potential significant wildlife habitat on-site. The significant wildlife habitat is broadly categorized as habitats of seasonal concentration of animals, rare vegetation communities, specialized habitats for wildlife, habitats of species of conservation concern and animal movement corridors. Table C.3, C.4, C.5 and C.6 in Appendix C, provide the screening rationale for each category of significant wildlife habitat, respectively.

4.5.1 Habitats of Seasonal Concentrations of Animals

Seasonal concentration areas are habitats where large numbers of species congregate at one particular time of the year. The significant wildlife habitat technical guides (OMNR, 2000) and significant wildlife habitat ecoregion criterion schedules (OMNRF, 2015) identify 12 types of seasonal concentration habitats that may be considered significant wildlife habitat. These 12 types of seasonal habitat are presented in Table C.3 in Appendix C, including a brief description of the rationale as to why or why they are not assessed further in this EIS.

Following review of Table C.3 in Appendix C, no *candidate* habitats of seasonal concentration of animals are present on-site, as such they are not discussed or evaluated further in this EIS.

4.5.2 Rare Vegetation Communities

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

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

4.5.3 Specialized Habitats for Wildlife

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

Following review of Table C.4 in Appendix C, two *candidate* specialized habitats for wildlife are present on-site or within the broader study area: waterfowl nesting area and woodland amphibian breeding habitat. The *candidate* SWH are discussed in detail in the subsections below.

4.5.3.1 Candidate Waterfowl Nesting Area

Candidate waterfowl nesting area SWH has been identified on-site and is associated with all upland habitats within 120 m of the local wetlands on-site where waterfowl breeding is known to occur, as defined in the SWH criteria schedule (OMNRF, 2015a).

Nine waterfowl species are listed as indicator species for waterfowl nesting areas: American black duck, northern pintail, northern shoveler, gadwell, blue-winged teal, green-winged teal, wood duck, hooded merganser, and mallard.

The defining use criteria for *confirmed* waterfowl nesting SWH is a total of 3 or more nesting pairs of listed species (excluding mallards) or 10 or more nesting pairs of listed species (including mallards). Based on observations from breeding bird surveys, none of the listed species were observed on-site. Furthermore, habitat conditions present on-site are unlikely to provide *confirmed* SWH for nesting waterfowl.

As such waterfowl nesting SWH is not present on-site and is not discussed or evaluated further in this EIS.

4.5.3.2 Woodland Amphibian Breeding SWH

Candidate woodland amphibian breeding habitat was identified on-site within the on-site swamp communities. Woodland amphibian breeding habitat provides critically important breeding habitat for the following wildlife species: eastern newt, blue-spotted salamander, spotted salamander, gray treefrog, spring peeper, western chorus frog and wood frog. Woodland amphibian breeding habitat can be located in all ecosites associated with coniferous, mixed and deciduous forests or swamps. The defining criteria for confirmed woodland amphibian breeding SWH is the presence of breeding populations of one or more listed newt/salamander species, two or more of the listed frog/toad species with at least 20 individuals, or two or more of the listed frog/toad species with a call level code 3.

To evaluate the potential for the habitats on-site to provide amphibian breeding habitat, a series of amphibian breeding surveys were conducted. Table 4.2 below summarizes the results of the amphibian breeding surveys described in Section 2 of this report. Figure A.2 in Appendix A illustrates the survey locations.

Table 4.1 Summary of Amphibian Breeding Call Surveys

Survey Location	Breeding Habitat	Species / Highest Call Code / Date	Confirmed SWH
1	Woodland	CHFR / 1-2 / April 13, 2021	Yes
		NLFR / 1-2 / April 13, 2021	
		WOFR / 1-3 / April 13, 2021	
		SPPE / 3* / April 13 and May 19, 2021	
		GRTR / 3* / May 19, 2021	
		GRFR / 1-3 / July 6, 2021	
2	Woodland	AMTO / 1-3 / April 13, 2021	No
		SPPE / 3* / April 13, 2021	
		CHFR / 1-1 / April 13, 2021	
		GRTR / 2-7 / May 19, 2021	
		AMTO / 1-1 / May 19, 2021	
3	Woodland	AMTO / 1-1 / April 13, 2021	Yes
		CHFR / 1-2 / April 13, 2021	
		SPPE / 3* / April 13, 2021	
		GRTR / 3* / May 19, 2021	
		SPPE / 2-7 / May 19, 2021	

Notes: SPPE = Spring Peeper, GRTR = Gray Treefrog, GRFR = Green Frog, NLFR = Northern Leopard Frog, AMTO = American Toad, WOFR = Wood Frog, CHFR = Western Chorus Frog. Call Codes: the first number indicates the call code where: (1) number of individuals can be accurately counted, (2) individuals can be readily estimated, (3) calls are continuous and overlapping, such that estimates of individuals are not reliable. The second number identifies the number of individuals calling. Call codes of 3 do not have a second number, as individual estimates are not possible.

*Species abundance number was not recorded during the survey.

Based on review of Table 4.2 above, woodland habitat on-site meets the defining use criteria for *confirmed* woodland amphibian breeding SWH, for stations 1 and 3, which correspond to the ash mineral swamp (ELC codes SWD2) and a small off-site unevaluated wetland to the east of the subject site respectively. While the wetland immediately off-site to the east does not meet the required 0.5 ha to be considered an ELC wetland community, it meets the minimum size requirement of greater than 500 m² outlined in the Criteria Schedules for wetlands or ponds to provide amphibian breeding habitat. 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. Station 2 did not meet the defining use criteria to provide *confirmed* woodland amphibian breeding habitat.

Confirmed woodland amphibian breeding habitat is illustrated on Figure A.4 in Appendix A. Impacts to woodland amphibian breeding habitat from the proposed development is 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-11 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 eastern wood-pewee. The *candidate* SWH are discussed in detail in the subsections below.

4.5.4.1 Special Concern and Rare Wildlife Species SWH

Based on observation data from the field investigations, two species of special concern have been identified on-site or within the broader study area, eastern wood-pewee and eastern whip-poor-will. No other species of special concern or rare wildlife species were identified on-site or within the broader study area.

Eastern Wood-Pewee

The eastern wood-pewee is a small flycatcher bird with an S-rank of S4 (uncommon but not rare) and is listed as a species of special concern in Ontario. Eastern wood-pewee was identified on-site during the field investigations. Eastern wood-pewee is a woodland species that is often found near clearings and edges and they were observed calling on-site during the field investigations. Given the mosaic of woodland and open habitat for eastern wood-pewee on-site, there is a high potential for eastern wood-pewee and their habitat to occur on-site.

Potential impacts to eastern wood-pewee and their habitat are discussed in Section 6 below.

Eastern Whip-poor-will

The eastern whip-poor-will is a medium-sized, insectivorous bird with an S-rank of S4B (uncommon but not rare; breeding population) and is listed as a species of special concern in Ontario.

At the time of the 2021 field investigations, eastern whip-poor-will were listed as threatened in Ontario. As such, three nocturnal breeding bird surveys were conducted on May 19, June 1 and June 24, 2021, under optimum conditions (moon phase, clear skies and air temperatures above 10°C) to target eastern whip-poor-will. The surveys were conducted at two locations on-site and are shown in Figure A.2 in Appendix A. Results of the nocturnal surveys are presented in Table 4.2 below.

Table 4.2 Summary of Whip-poor-will Survey Results

Survey Date	Whip-poor-will Detected On-site	Whip-poor-will Detected Off-site	Total Whip-poor-will Detected
May 19, 2021	0	4	4
June 1, 2021	0	1	1
June 24, 2021	0	0	0

Based on the results of surveys, eastern whip-poor-will were not recorded on-site; however, they were heard calling from the study area. Eastern whip-poor-will is a species that is often found near open woodlands. Given the mosaic of woodland and open habitat for eastern whip-poor-will on-site, and the individuals heard calling from off-site, there is a high potential for eastern whip-poor-will and their habitat to occur on-site.

Potential impacts to eastern whip-poor-will and their habitat are discussed in Section 6 below.

4.5.5 Animal Movement Corridors

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

Following review of Table C.6 in Appendix C, no animal movement corridors have been identified on-site. Furthermore, the MNRF has not identified any animal movement corridors on the publicly available data sets for wildlife values area (OMNRF, 2020a) or wildlife values site (OMNRF, 2020b). As such, animal movement corridors are not discussed or evaluated further in this EIS.

4.6 Fish Habitat

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

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

A fisheries assessment was not conducted as part of this EIS, until such a time that a fisheries assessment is completed, the local wetland on-site is assumed to provide fish habitat for small bodied fish species.

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

4.7 Species at Risk

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

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

5.0 PROPOSED PROJECT

The proposed project assessed for potential impacts on the natural heritage features determined to be present within the broader study area is a plan of subdivision application for part of Lot 18, Concession 3, Lanark County.

A conceptual plan of development is illustrated on Figure A.5 in Appendix A. This conceptual plan of development includes the creation of one residential road providing access to 41 residential lots and two block lots occupying the entire 34 ha property. All lots will be on private services. Access to the proposed subdivision will be from Richmond Road.

Future components of the proposed project considered in the impact assessment presented in Section 6 include: tree clearing and vegetation grubbing, fill placement and elevation grading, road construction, laneway construction, excavation and pouring of foundations, construction of single family dwellings, drilling of individual lot groundwater wells and septic system installation, general landscaping activities and the creation of stormwater management facilities adjacent to the subdivision.

The timeline for the proposed project, from lot creation to completion of residential construction is currently unknown. For the purpose of assessing impacts to natural heritage features, it is assumed in this EIS that the creation of individual residential lots will happen in the near-term and will not result in any physical alterations to the natural environment of the site and the broader study area. Future construction of single family residential homes on each of the subdivision lots is assumed to occur over a several year period, and that the construction of any one residential home will be completed such that the duration of any potential impacts on the natural environment during construction will be approximately six months.

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 5 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, disturbance of the natural soil mantle, increased noise generation, increased human disturbance, increase storm water generation and potentially increased nutrient and sediment loading to adjacent surface water features.

6.1 Local Wetlands and Fish Habitat

As outlined in Section 3.5 and Section 4.1, one local, unevaluated wetland, of approximately 2.65 ha is present on the subject property. Additionally, one small local, unevaluated wetland was identified just off-site to the east, and a larger series of local, unevaluated wetlands were identified off-site to the south just along the study area.

In order to provide access to the subdivision, a roadway will be required to cross through the on-site local wetland. Based on the proposed development plan, the roadway will result in the loss of 0.16 ha of the total 2.65 ha (6%) of local wetland on-site. Impacts to local wetlands on-site will include the direct loss of wetland area and the cumulative loss of habitat complexity and structure, primarily for breeding woodland amphibian species. As no in-water work is proposed for off-site wetlands, impacts to off-site wetlands are limited to indirect impacts discussed below. No direct impacts are anticipated to occur to off-site wetlands.

Impacts to the hydraulic regime and hydro-period of off-site roadside ditches which receive seasonal flows from local wetlands are not anticipated to be impacted by the development due to the net increase in stormwater storage provided by the proposed development and the maintenance of connectivity to existing drainage networks off-site along Richmond Road.

Impacts relating to habitat loss can be partially offset through application of natural design principles to locations of the residential development envelopes and the design and construction of naturalized stormwater management ponds. Mitigation measures intended to minimize impacts associated with loss of local wetland area are discussed in Section 7.

6.2 Significant Wildlife Habitat

The potential presence of significant wildlife habitat on-site and within the study area was evaluated in Section 4.5, as a result of this assessment two types of significant wildlife habitat were determined to be present on-site or within the study area: *confirmed* woodland amphibian breeding habitat and habitats of special concern and rare wildlife species.

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

6.2.1 Confirmed Woodland Amphibian Breeding Habitat

The ash mineral swamp (SWD2) on-site and the small, adjacent unevaluated wetland to the east of the subject property were *confirmed* to provide woodland amphibian breeding habitat. Based on the habitat description outlined in the Significant Wildlife Habitat Criteria Schedule (OMNRF, 2015) habitat for woodland breeding amphibians is the wetland area plus a 230 m radius of woodland area adjacent to the wetland. Non-woodland habitat adjacent to the wetlands is not considered SWH. The wetlands and the 230 m radius for woodland amphibian breeding habitat is illustrated on Figure A.4.

As outlined in Section 6.1 above, approximately 0.16 ha of the ash mineral swamp will be directly impacted due to the proposed access roadway. This proposed roadway will result in the loss of 0.16 ha of the approximately 2.65 ha (6%) of wetland habitat for woodland amphibian breeding.

As no in-water work is proposed for off-site wetlands, impacts to off-site wetlands are limited to indirect impacts discussed below. No direct impacts are anticipated to occur to off-site wetlands.

Most amphibians require surface water to carryout their life histories. During spring many of these species concentrate in breeding ponds to mate and lay eggs. Amphibian species, namely frog and toad species, either live in the wetland or at its edge and disperse away from the breeding area once they emerge to live in terrestrial habitats some distance from the wetland, returning in the spring to breed or in autumn to hibernate (OMNRF, 2014).

According to the Significant Wildlife Habitat Mitigation Support Tool (OMNRF, 2014), development activities associated with excavation and drainage have the potential to affect amphibian population dynamics in the vicinity of the development, primarily through alteration of wetland hydrologic regimes and loss of travel corridors. Other potential impacts resulting from residential subdivision development include the loss of surrounding woodland coverage and the corresponding loss of shelter and upland foraging habitat.

Direct impacts associated with wetland encroachment activities such as dredging, clearing and filling reducing the quality of wetland breeding sites. Impairment of breeding sites as a result of encroachment can result in increased predation and loss of habitat structure (OMNRF, 2014).

Cumulative indirect impacts to woodland amphibian breeding habitat include increased human disturbance (pet predation, frog catching, etc.), and reduced water quality through increases in stormwater generation, concomitant sediment transport and nutrient loading to surface water.

Mitigation measures intended to minimize and offset impacts to *confirmed* significant wildlife habitat for breeding wetland amphibians are presented in Section 7.

6.2.2 Habitats of Special Concern and Rare Wildlife Species SWH

6.2.2.1 Eastern Wood-Pewee

Eastern wood-pewee (*Contopus virens*) lives in a variety of deciduous, mixed, and to a lesser extent, coniferous woodland habitat (COSEWIC, 2012a). In Ontario, the eastern wood-pewee is listed as a species of special concern.

Impacts to eastern wood-pewee and their habitat on-site from the proposed development is limited to the wooded and forested habitat on-site (ELC Codes FOC2-2, FOC4-1, and FODM5 on Figure A.3 in Appendix A), which may provide suitable nesting and foraging habitat. Impacts to eastern wood-pewee habitat may include loss of forest habitat and increased human presence and disturbance.

While the proposed development may result in the loss of suitable habitat on-site, suitable habitat is readily available within the broader study area. Impacts from increased human presence are anticipated to be negligible given the existing development surrounding the proposed development and the availability of suitable habitat in the broader study area.

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

6.2.2.2 Eastern Whip-poor-will

The eastern whip-poor-will (*Caprimulgus vociferous*) is a medium-sized, insectivorous bird with a large round head, and stout chest that tapers to a long tail and wings. In Ontario, eastern whip-poor-will are listed as special concern.

The breeding and foraging habitat of eastern whip-poor-will depends more on forest structure than composition. The species avoids both wide-open spaces and closed-canopy forests, favouring semi-open forests or patchy forests with clearing, such as barrens and forests that are regenerating (COSEWIC, 2009).

Impacts to eastern whip-poor-will on-site from the proposed development is limited to the open forested and thicket habitat on-site (ELC Codes: CUT, FOC2-2, and FODM5 on Figure A.3 in Appendix A), which may provide suitable nesting and foraging habitat. Impacts to eastern whip-poor-will and their habitat on-site from the proposed plan of subdivision includes development and disturbance, which may include vegetation removal, increased human disturbance during construction and post construction disturbance such as increased noise and light pollution and increased wildlife and human interaction.

While the proposed development may result in the loss of suitable habitat on-site, suitable habitat is readily available within the broader study area. Impacts from increased human presence are anticipated to be negligible given the existing development surrounding the proposed development and the availability of suitable habitat in the broader study area.

Mitigation measures intended to prevent negative impacts to nesting and foraging eastern whip-poor-will are presented in Section 7.

6.2.2.3 Snapping Turtle

Snapping turtle (*Chelydra serpentina*) is the largest freshwater turtle found in Canada. In Ontario the snapping turtle is listed as a species of special concern.

Threats to snapping turtle are primarily related to their life-history: their slow recruitment, late maturity, long lifespan and high adult survival makes them extremely vulnerable to a variety 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). A review of NHIC occurrence data indicates the species has been observed within 2 km of the site; however, the species was not observed during the field investigations.

Potential habitat for snapping turtle on-site includes the local wetland (ELC code: SWD2). During the 2025 field investigation, the on-site wetland was observed to have a mosaic of standing water and patches of grass with trees. While water depths were not measured, some areas were estimated to be approximately 30 cm deep. As such, the local wetland on-site is not anticipated to maintain suitable water depths for turtle overwintering habitat; however, may support suitable basking and foraging habitat. No soft substrates, suitable for turtle nesting was observed within the wetland.

Minimal in-water work is anticipated as part of the proposed development; therefore, impacts to snapping turtle are anticipated to be associated with indirect wetland impacts and the potential loss of regulated habitat.

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 snapping turtles are anticipated to be associated with the potential loss of wetland habitat and increased interactions with transient snapping turtles. Based on the proposed development plan, the roadway will result in the loss of 0.16 ha of the total 2.65 ha (6%) of local wetland on-site.

Avoidance and mitigation measures intended to prevent harm to snapping turtles who have the potential to occur on-site are presented in Section 7.

6.3 Species at Risk

As outlined in the Endangered Species Act (Ontario, 2007), only species listed as threatened or endangered and their habitat receive automatic protection. Following enactment of Bill 5, species specific habitat regulations are no longer valid for species protection, this includes documents such as general habitat descriptions that outlined Category 1, Category 2 and Category 3 habitats for species. Presently, habitat protections refer to the definition outlined in Bill 5 as follows:

“habitat” means:

- a) In respect of an animal species:*
 - i. A dwelling-place such as a den, nest or other similar place, that is occupied or habitually occupied by one or more members of a species for the purposes of breeding, rearing, staging, wintering or hibernating, and*
 - ii. The area immediately around a dwelling place described in subclause (i) above that is essential for the purposes set out in that subclause.*
- b) In respect of a vascular plant species: the critical root zone surroundings a member of the species, and*
- c) In respect of all other species: an area on which any member of a species directly depends in order to carry on its life processes”*

Under the ESA, species of special concern and their habitat do not receive protection under the ESA.

Potential impacts associated with the proposed project to threatened or endangered species identified as having a moderate or high potential to occur on-site in Section 4.8, are discussed on a species-by-species basis in subsections below.

6.3.1 Blanding’s Turtle

Blanding’s turtles (*Emydoidea blandingii*) have a highly domed, smooth black carapace with small, irregular tan or yellow flecking. The most distinctive characteristic of this species is the bright yellow chin and throat. Their hinged plastron is yellow with a large dark blotch in the corner of each scute, but may also be entirely black (Oldham and Weller, 2000).

In Canada, Blanding’s turtles are found throughout southern and south-central Ontario from south of Manitoulin Island to western Quebec. In Ontario, Blanding’s turtles are often observed utilizing eutrophic habitats with clear water (COSEWIC, 2016). This turtle species occurs primarily in

shallow water; adults are generally found in open or partially vegetated sites, where as juveniles prefer areas that contain thick aquatic vegetation. Blanding's turtles are known to make large overland journeys between connected lakes, rivers, streams, marshes or ponds, upwards of 6 km in a single active season. Overwintering occurs in permanent pools that average about one metre in depth, or slow flowing streams (COSEWIC, 2016).

During the site investigation, Blanding's turtles were not detected on-site however the site is located within a greater area of known Blanding's turtle occurrences. Based on NHIC observation data the species has been documented within 2 km of the site. Protected habitat for Blanding's turtle under the Endangered Species Act is limited to overwintering sites, and nesting sites.

Potential habitat for Blanding's turtle on-site includes the local wetland (ELC code: SWD2). During the 2025 field investigation, the on-site wetland was observed to have a mosaic of standing water and patches of grass with trees. While water depths were not measured, some areas were estimated to be approximately 30 cm deep. As such, the local wetland on-site is not anticipated to maintain suitable water depths for turtle overwintering habitat; however, may support suitable basking and foraging habitat. No soft substrates, suitable for turtle nesting was observed within the wetland.

No overwintering habitat and no nesting sites, or suitable nesting habitat was identified on-site during the EIS. As such regulated habitat, as defined under the Endangered Species Act is not present on-site.

In-water work is anticipated to support the proposed road crossing through the wetland. Wetland habitat will be lost to permit the roadway access. Potential direct impacts to Blanding's turtles are anticipated to be associated with the potential loss of wetland habitat and increased interactions with transient Blanding's turtles. Based on the proposed development plan, the roadway will result in the loss of 0.16 ha of the total 2.65 ha (6%) of local wetland on-site.

Additional impacts may also 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. Impacts to transient Blanding's turtles will be more likely during migratory and nesting periods.

In-water work, and general construction has the potential to impact individual turtle species, however these impacts can be mitigated through implementation of avoidance measures and best management practices during construction.

As the proposed project will not impact protected overwintering or nesting habitat, and impacts to individual turtle species can be mitigated during construction, it is GEMTEC's opinion that further

consultation with the MECP is not required at this time and no permit is required for the proposed work.

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

6.3.2 Eastern Red Bat

Eastern red bat (*Lasiurus borealis*) is a medium-large sized (typically 10-17 g), insectivorous bat found in Ontario. The fur of an eastern red bat is usually orange, but can vary from yellowish-red to yellowish-grey, with white or white-tipped hairs (COSEWIC, 2023).

The eastern red bat is found throughout Canada (except Prince Edward Island), the United States, and northeast Mexico; with distribution uncommon west of the Western Cordillera. In Ontario, the species occurs throughout Ontario, appearing as far north as James Bay (COSEWIC, 2023).

Eastern red bats overwinter in warmer climates in the southern extent of the United States, typically beneath leaf litter (COSEWIC, 2023). In comparison to many other Ontario bat species, they do not overwinter in caves. During the spring and summer months, they typically utilize the foliage of trees and occasionally shrubs for roosting habitat, with a preference for roosting near the edge of the crown and at sufficient heights to prevent access from mammalian predators (COSEWIC, 2023).

Although the forest habitat on-site does not meet the requirements to support bat maternity colonies, given the availability of habitat on-site and within the study area, there is a potential for eastern red bat to occur on the property, primarily for foraging or non-maternal roosting. Impacts to eastern red bat are primarily associated with habitat loss, encroachment and increased wildlife-human interaction. Mitigation measures intended to protect eastern red bat from impacts of the proposed development are discussed in Section 7.

6.3.3 Eastern Small-footed Myotis

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

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

Eastern small-footed Myotis overwinter primarily in caves and abandoned mines with low humidity and temperatures and stable microclimates (Humphrey, 2017). In comparison to other Ontario

bat species, they are able to tolerate much colder temperatures, drier conditions and draftier locations for hibernating (Humphrey, 2017). During the spring and summer months, they utilize a variety of habitats for roosting, including under rocks or rock outcrops, in buildings, under bridges, or in caves, mines or hollow trees (Ontario, 2023).

Although the forest habitat on-site does not meet the requirements to support bat maternity colonies, given the availability of habitat and buildings on-site and within the study area, there is a potential for eastern small-footed *Myotis* to occur on the property, primarily for foraging or non-maternal roosting. Impacts to eastern small-footed *Myotis* are primarily associated with habitat loss, encroachment and increased wildlife-human interaction. Mitigation measures intended to protect eastern small-footed *Myotis* from impacts of the proposed development are discussed in Section 7.

6.3.4 Hoary Bat

Hoary bat (*Lasiurus cinereus*) is a large (typically 16-38 g), insectivorous bat found in Ontario and is the largest bat found in Canada. The fur of a hoary bat is dense and include a complex mixture of colors, ranging from light to dark brown, and have white tipped hairs on the dorsal and ventral sides (COSEWIC, 2023). The hoary bat is distinguishable by the large size and light yellow-brown fur on the head, throat, and anterior margins of the wings (COSEWIC, 2023).

The hoary bat range spans across all provinces and territories within Canada, all the states within the United States, and has a wide distribution throughout Mexico (COSEWIC, 2023). In Ontario, the hoary bat is found throughout the province, and has been observed north of James Bay (COSEWIC, 2023).

Hoary bats overwinter in warmer climates in the southern extent of the United States, typically beneath leaf litter (COSEWIC, 2023). In comparison to many other Ontario bat species, they do not overwinter in caves. During the spring and summer months, they typically utilize the foliage of trees and occasionally shrubs for roosting habitat, with a preference for roosting near the edge of the crown and at sufficient heights to prevent access from mammalian predators (COSEWIC, 2023).

Although the forest habitat on-site does not meet the requirements to support bat maternity colonies, given the availability of habitat on-site and within the study area, there is a potential for hoary bat to occur on the property, primarily for foraging or non-maternal roosting. Impacts to hoary bat are primarily associated with habitat loss, encroachment and increased wildlife-human interaction. Mitigation measures intended to protect hoary bat from impacts of the proposed development are discussed in Section 7.

6.3.5 Little Brown Myotis

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

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

Little brown Myotis overwinter in caves and abandoned mines, they require highly humid conditions and temperatures that remain above the freezing mark (Ontario, 2021). During the summer months, maternity colonies are often located in buildings or large-diameter trees. Little brown Myotis roost in trees and buildings. Foraging occurs over water and along waterways, forest edges and in gaps in the forest. Open fields and clearcuts are not typically utilized for foraging (COSEWIC, 2013).

Although the forest habitat on-site does not meet the requirements to support bat maternity colonies, given the availability of habitat and buildings on-site and within the study area, there is a potential for little brown Myotis to occur on the property, primarily for foraging or non-maternal roosting. Impacts to little brown Myotis are primarily associated with habitat loss, encroachment and increased wildlife-human interaction. Mitigation measures intended to protect little brown Myotis from impacts of the proposed development are discussed in Section 7.

6.3.6 Silver-haired Bat

Silver-haired bat (*Lasionycteris noctivagans*) is a medium-sized (typically 9-17 g), insectivorous bat. The fur is one of the darkest of all bats in Canada, with black skin membranes and black to dark brown fur (COSEWIC, 2023).

In North America, the silver-haired bat is widely distributed and spans from the southern extent of the Canadian provinces to east-central Mexico (COSEWIC, 2023). In Canada, the distribution spans from coast to coast, but appears to be uncommon in Atlantic Canada. In Ontario, the species occurs throughout Ontario, appearing as far north as James Bay (COSEWIC, 2023).

Silver-haired bats overwinter in mines, rock crevices, trees, and snags across North America, including the United States, the Great Lakes region of Ontario, and in some areas of British Columbia (COSEWIC, 2023). Foraging typically occurs in young and old forests. Silver-haired bat roost primarily under bark and in cavities of trees; however, may occasionally roost on or in buildings (COSEWIC, 2023).

Although the forest habitat on-site does not meet the requirements to support bat maternity colonies, given the availability of habitat and buildings on-site and within the study area, there is

a potential for silver-haired bat to occur on the property, primarily for foraging or non-maternal roosting. Impacts to silver-haired bat are primarily associated with habitat loss, encroachment and increased wildlife-human interaction. Mitigation measures intended to protect silver-haired bat from impacts of the proposed development are discussed in Section 7.

6.3.7 Tri-Colored Bat

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

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

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

Although the woodlands on-site do not meet minimum snag density requirements to support bat maternity colony habitat, given the availability of habitat on-site there is a potential for tri-colored bat to occur on the property, primarily for foraging or non-maternal roosting. Impacts to tri-colored bat are primarily associated with habitat loss, encroachment and increased wildlife-human interaction. Mitigation measures intended to protect tri-colored bat from impacts of the proposed development are discussed in Section 7.

6.3.8 Butternut

Butternut (*Juglans cinerea*) is a relatively short lived, medium-sized tree that can reach heights of up to 30 m. It is easily distinguished by its compound leaves, made up of 11 to 17 leaflets, arranged in a feather-like pattern. Each leaflet is 9 to 15 centimetres in length. The bark is grey and smooth on young trees, becoming more ridged with age. Butternut is a member of the walnut family and produces edible nuts in the fall.

The Canadian range for Butternut extends through southern Ontario into southern Quebec, and New Brunswick (COSEWIC, 2003). Butternut is a shade intolerant tree that is commonly found in riparian habitats, and sites in a regenerative state. Butternut can also be found on rich, moist, well-drained gravels, favouring those of limestone origin. Common associates of Butternut trees include: basswood, black cherry, beech, black walnut, elm, hickory, oak, red maple, sugar maple, yellow poplar, white ash and yellow birch.

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

6.3.9 Black Ash

Black ash (*Fraxinus nigra*) is a medium-sized, shade-intolerant hardwood tree species that is typically found on moist to wet sites, including swamps, bogs, and riparian areas.

The Canadian range for black ash extends from western Newfoundland to southeastern Manitoba (Ontario, 2025). Black ash was added to the Species at Risk in Ontario list in January 2022.

Black ash was identified within the ash mineral swamp community (ELC code: SWD2) on-site, as illustrated on Figure A.4 in Appendix A. Black ash were searched for during the 2025 field investigation and confirmation of the ELC boundaries. A formal black ash health assessment was not completed for the subject property.

Habitat for black ash protected under the Endangered Species Act is limited to the critical root zone of healthy trees. A black ash health assessment will be required prior to construction to determine which trees are healthy and thus protected under the Endangered Species Act. As outlined in the MECP Black Ash Health Assessment Guidelines, black ash health assessment should be conducted as close as possible to the date of an activity that may impact Black Ash trees or its protected habitat. Based on this GEMTEC recommends completing the black ash health assessment closer to construction, or any development activity that has the potential to negatively impact black ash trees.

Following completion of the Black Ash Health Assessment, any trees identified as healthy will require further consultation with the MECP to determine authorization and compensation requirements under the Endangered Species Act.

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

6.4 Cumulative Impacts

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

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

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

7.0 RECOMMENDED AVOIDANCE AND MITIGATION MEASURES

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

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

Vegetated buffers, particularly buffers that are vegetated with a mix of grassy herbaceous vegetation and shrubby or woody vegetation are most effective in mitigating impacts associated with anthropogenic activities in adjacent lands (Beacon, 2012). Buffers recommended in the following subsections and illustrated on Figure A.6, are done so within the context of the existing environmental disturbances but also to promote reasonable natural rehabilitation. In the subsections below, where possible, literature references for studies used as the basis of the recommended buffer widths are provided.

7.1 Unevaluated Wetlands and Fish Habitat

No negative impacts on the integrity of the unevaluated wetlands are anticipated as a result of the proposed development if all mitigation measures recommended below area enacted and best management practices followed. Wetlands on-site can be protected against potential impacts of the proposed development through the implementation of a construction setback. With the exception of the access roadway no construction or development shall be permitted within the 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 (SWH for breeding woodlands amphibians). Wetland buffer widths have a moderate risk of not providing adequate mitigation for water quality impacts at widths equal to or greater than 10 m. Wetland buffer widths have a low risk of not providing adequate mitigation for human disturbance/land use change impacts at widths equal to or greater

than 30 m. Wetland buffer widths have a moderate risk of not providing adequate mitigation for core habitat protection at widths greater than 20 m.

In consideration of the local wetlands, and the nature of the proposed development, a minimum 30 m setback from the local wetlands 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, development is not anticipated to negatively impact the core habitat functions of the wetlands and adjacent woodlands. As such a 30 m setback is sufficient to protect core habitat within the local wetlands.

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

- Buffers should be comprised of a mixture of native and non-invasive, self-sustaining trees, shrubs and tall grasses.
- All future development and construction activities within the study area, including ditching, culvert installation, erosion and sediment control and storm water management should be completed in accordance with Ontario Provincial Standard Specification 182 and OPSS 805.
- All in-water activities should be conducted in isolation of open or flowing water while maintaining the natural flow of water downstream.
- Culverts should be installed such that it is imbedded in the streambed, ensuring the culvert remains passable (i.e. does not become perched).
- No in-water work should occur between March 15 and July 15 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 in the near shore area.
- Ensure all applicable permits for relocating fish, if required, are obtained and relocate any fish that become trapped in the work area.
- Silt fencing should be installed along all setbacks to provide visual demarcation of the setbacks to prevent machinery encroachment and sediment transport.
- Install and maintain effective sediment and erosion control measures before starting work.
- Schedule work to avoid wet, windy and rainy periods.
- When native soil is exposed, sediment and erosion control work in the form of heavy-duty sediment fencing shall be positioned along the down gradient edge of any construction envelopes adjacent to waterbodies.
- A storm water management plan should be prepared by a qualified engineer with the purpose of reducing suspended sediment in roadside ditches, if applicable.
- The development plan should include lot-side swales and/or road side ditches designed to promote infiltration.

- Operate machinery on land above the high water mark, in a manner that minimizes disturbance to the banks and bed of the watercourse.
- 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.
- Best practices for siting of septic systems should be adhered to and be installed by a licenced septic system contractor ensuring all applicable regulations are met and required permits obtained.
- Maintain as much permeable surface area as possible in future development plans to limit the generation of stormwater runoff.
- Stormwater generated from the proposed development is to be managed on-site such that dewatering discharge during construction and discharge to watercourse post-development, are both equal to pre-development discharge rates. Site stormwater management should also be treated to achieve a reduction of 80% TSS prior to discharge.

7.2 Significant Wildlife Habitat

7.2.1 Confirmed Woodland Amphibian Breeding Habitat

The 30 m setback from local wetlands on-site, presented above, is sufficient to protect *confirmed* woodland amphibian breeding habitat. Additionally, prior to any site work, reptile and amphibian exclusion fencing should be installed around the entire perimeter of any active construction areas to prevent the migration of amphibians and other wildlife into the construction zone. Given the size and scale of the proposed development, it is anticipated that lots will be developed at different times, it is assumed to begin that active roadways will be fenced. As individual lots start to become developed, they should be fenced around the property boundary, or 30 m setback (where applicable), as development starts on each lot. Temporary fencing will provide a visual demarcation of the work 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).

7.2.2 Habitats of Special Concern and Rare Wildlife Species – Eastern Wood Pewee and Eastern Whip-poor-will

To minimize the impact of the proposed development on eastern wood-pewee and eastern whip-poor-will habitat, vegetation removal should occur outside the key breeding bird period (typically April 15 to August 15) as identified by Environment Canada for the protection of nesting and foraging avian species and to avoid contravention of the Migratory Bird Convention Act. If

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

7.2.3 Habitats of Special Concern and Rare Wildlife Species – Snapping Turtle

The 30 m setback from local wetlands, presented above, is sufficient to protect potential snapping turtle habitat on-site. Additionally, prior to any site work, reptile and amphibian exclusion fencing should be installed around the entire perimeter of any active construction areas to prevent the migration of turtles and other wildlife into the construction zone. Given the size and scale of the proposed development, it is anticipated that lots will be developed at different times, it is assumed to begin that active roadways will be fenced. As individual lots start to become developed, they should be fenced around the property boundary, or 30 m setback (where applicable), as development starts on each lot. Temporary fencing will provide a visual demarcation of the work 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).

7.3 Species at Risk

7.3.1 Blanding's Turtle

Outside of roadway construction, no construction or alteration is proposed within the wetland. The 30 m wetland setback is sufficient to protect watercourse habitat from encroachment and habitat loss. During construction Blanding's turtles will be excluded from the work area, but following construction completion the remaining habitat (outside of the new roadway) will still be available for use by Blanding's turtles.

Protected Blanding's turtle habitat (overwintering or nesting) is not anticipated to be impacted by the proposed development. As such it is GEMTEC's opinion that the proposed project will not contravene the ESA and further consultation with the MECP is not required at this time, provided mitigation measures to protect individual turtle species below are enacted.

Should components of the project change, that may impact regulated habitat, consultation with the MECP may be required.

In addition to the mitigation measures presented in Section 7.1 above for the protection of the local wetland and fish habitat, the following mitigation measures are expected to be implemented to avoid contravention of the ESA:

- Outside of constructing the road access, all development should occur outside of the prescribed 30 m wetland setback. The maintenance of a vegetated buffer will provide mitigation for impacts associated with sediment and nutrient loading to the wetlands.
- To minimize impacts to Blanding's turtle, vegetation removal should occur outside of the turtle active season, of April 1 to October 31, of any given year.

- Prior to any site work, reptile and amphibian exclusion fencing should be installed around the entire perimeter of any active construction areas to prevent the migration of Blanding's Turtles and other wildlife into the construction zone. Given the size and scale of the proposed development, it is anticipated that lots will be developed at different times, it is assumed to begin that active roadways will be fenced. As individual lots start to become developed, they should be fenced around the property boundary, or 30 m setback (where applicable), as development starts on each lot. Temporary fencing will provide a visual demarcation of the work area for workers during construction. Exclusion fencing should follow the protocols outlined in the Species at Risk Branch: Best Practices Technical Note: Reptile and Amphibian Exclusion Fencing Version 1.1 (MNRF, July 2013).
- Each day of construction a daily pre-work sweep of the construction area should occur to ensure no SAR are present and to remove any wildlife from inside the construction area.
- All staff working on-site should be provided Species at Risk training to identify species at risk which a potential to occur on-site including: Blanding's turtle. Training will also outline the stop work procedures and MECP reporting/consultation prior to resuming work.
- During construction if any SAR is identified on-site all work should stop and a qualified professional and the MECP should be contacted for next steps. SAR sightings should be reported to the MECP and the NHIC.
- Septic system installation should follow best practices to avoid impacts to water quality.
- Cover all stockpiled material with a geotextile to prevent turtles from nesting in the material between May 1 and August 1 of any year.
- To protect aquatic habitat for Blanding's turtles, machinery should be maintained in good working condition and all machinery should be fueled a minimum of 30 metres from the high water mark.
- Following construction completion, homeowners 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 if species are encountered.

7.3.2 SAR Bats

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

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

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

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

7.3.3 Black Ash

As mentioned in Section 6.3.9, black ash was observed within the swamp on-site.

Prior to construction, site disturbance or any other development activity that may negatively impact black ash, a Black Ash Health Assessment is required to be completed and submitted to the MECP to identify healthy black ash trees protected under the Endangered Species Act. 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* (Ontario, 2007). Any work within the critical root zone (based on individual tree size) 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.

Following the Black Ash Health Assessment, consultation with the MECP will be required to determine permit, authorization and compensation requirements for any healthy black ash trees impacted by the proposed project.

In accordance with guidance from the Government of Ontario, and the MECP, “Black Ash health assessments should be conducted as close as possible to the date of an activity that may impact the Black Ash tree or its habitat” (Ontario, 2024). Based on this, GEMTEC recommends completing the black ash health assessment within 1.5 years of the start of development to allow proper time to assess the trees health and also consult with the MECP for impacts and permitting as required.

7.4 Wildlife

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

- Vegetation removal should occur outside of March 15 - November 30 to avoid the key breeding bird period and bat summer active season. The timing windows provides protection of migratory birds, roosting bats and avoids contravention of the Migratory Bird Convention Act and Endangered Species Act. If vegetation clearing activities must take place during the timing window then a nest and roost survey shall be conducted by a qualified professional.
- Installation of silt fence barriers around the entire construction envelope of each future residential dwelling to prohibit the emigration of wildlife into the construction area.
- Cover all stockpiled material with a geotextile to prevent turtles from nesting in the material between May 1 and August 1 of any year.
- Perform daily pre-work sweeps of the construction area to ensure no 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.

7.5 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 the creation of a residential subdivision on an existing 34 ha property.

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

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

- No significant impacts to natural heritage features identified on-site, including local wetlands and fish habitat, 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 Planning Statement.
- The proposed development complies with the natural heritage policies of the Lanark County 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 M Signature Homes and is intended for the exclusive use of M Signature Homes. This report may not be relied upon by any other person or entity without the express written consent of GEMTEC and M Signature Homes. Nothing in this report is intended to provide a legal opinion.

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

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

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

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

Sincerely,



Emily Pentz, B.Sc.
Junior Biologist



Taylor Warrington, B.Sc.
Biologist

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APPENDIX A

Report Figures

Figure A.1 – Site Location

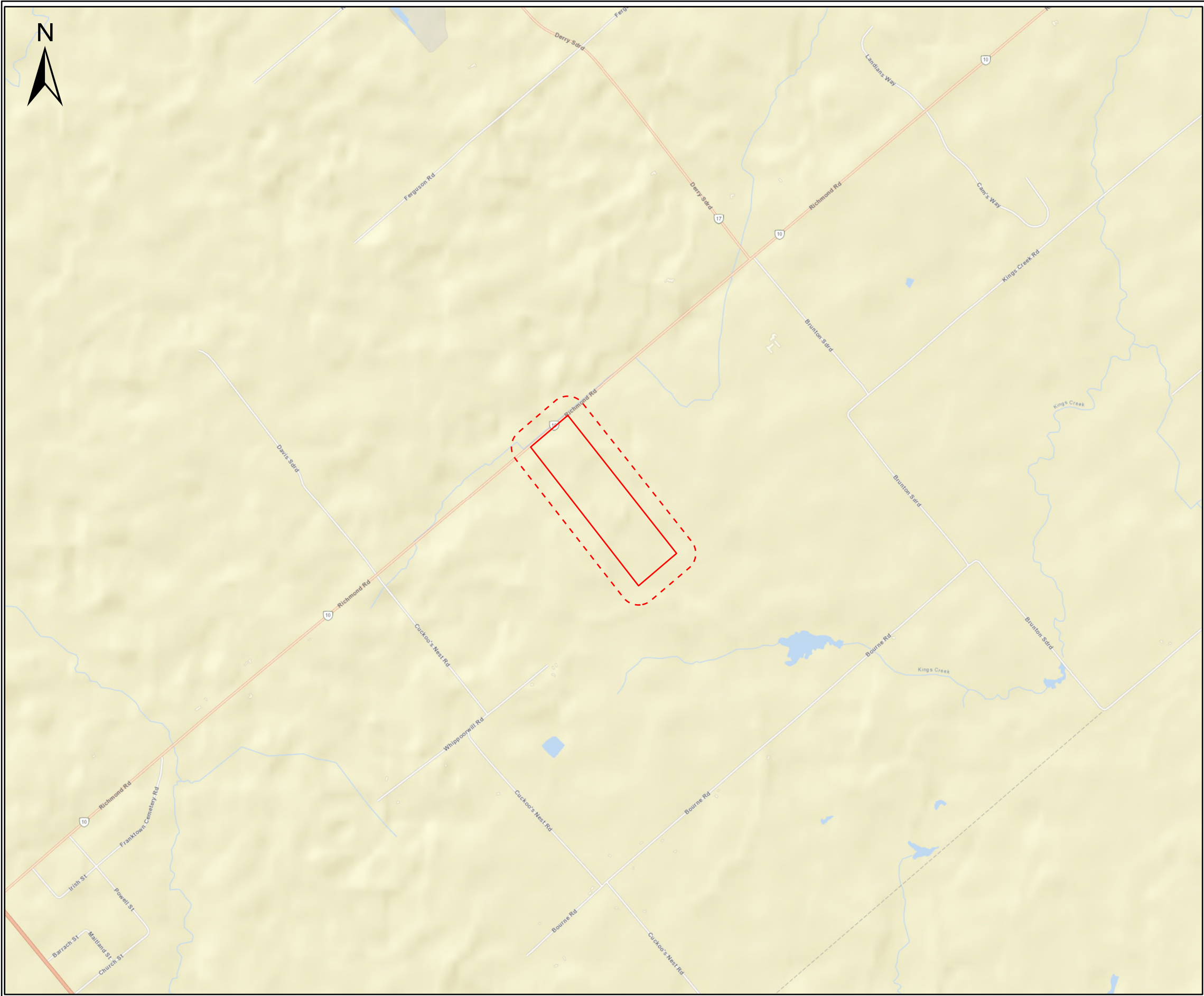
Figure A.2 – Site Layout

Figure A.3 – Vegetation Communities

Figure A.4 – Natural Heritage Features

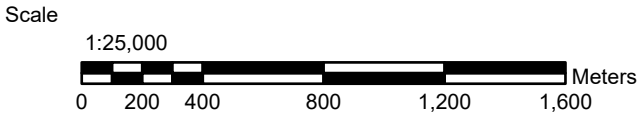
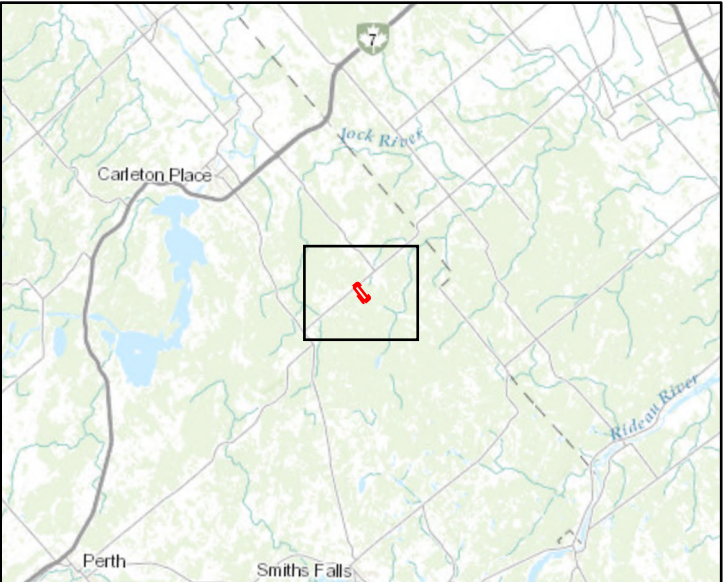
Figure A.5 – Proposed Development Plan

Figure A.6 – Mitigation Measures



Legend

- Property Boundary
- Study Area



32 Steacie Drive,
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www.gemtec.ca
ottawa@gemtec.ca

Client:	M Signature Homes	Project:	100165.004
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Location

Part of Lot 18, Concession 3
Beckwith Township, Ontario

Drwn By: EP	Chkd By: TW	Site Location
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Date: August 2025	Rev.	Figure A.1
© Queen's Printer for Ontario	0	



Legend

- Property Boundary
- Study Area
- Local Wetland
- Amphibian Breeding Survey Location (100 m radius)
- Breeding Bird Survey Location (100 m radius)
- Whip-Poor-Will Survey Location (300 m radius)

Scale

1:5,800

0

50

100

200

300

400

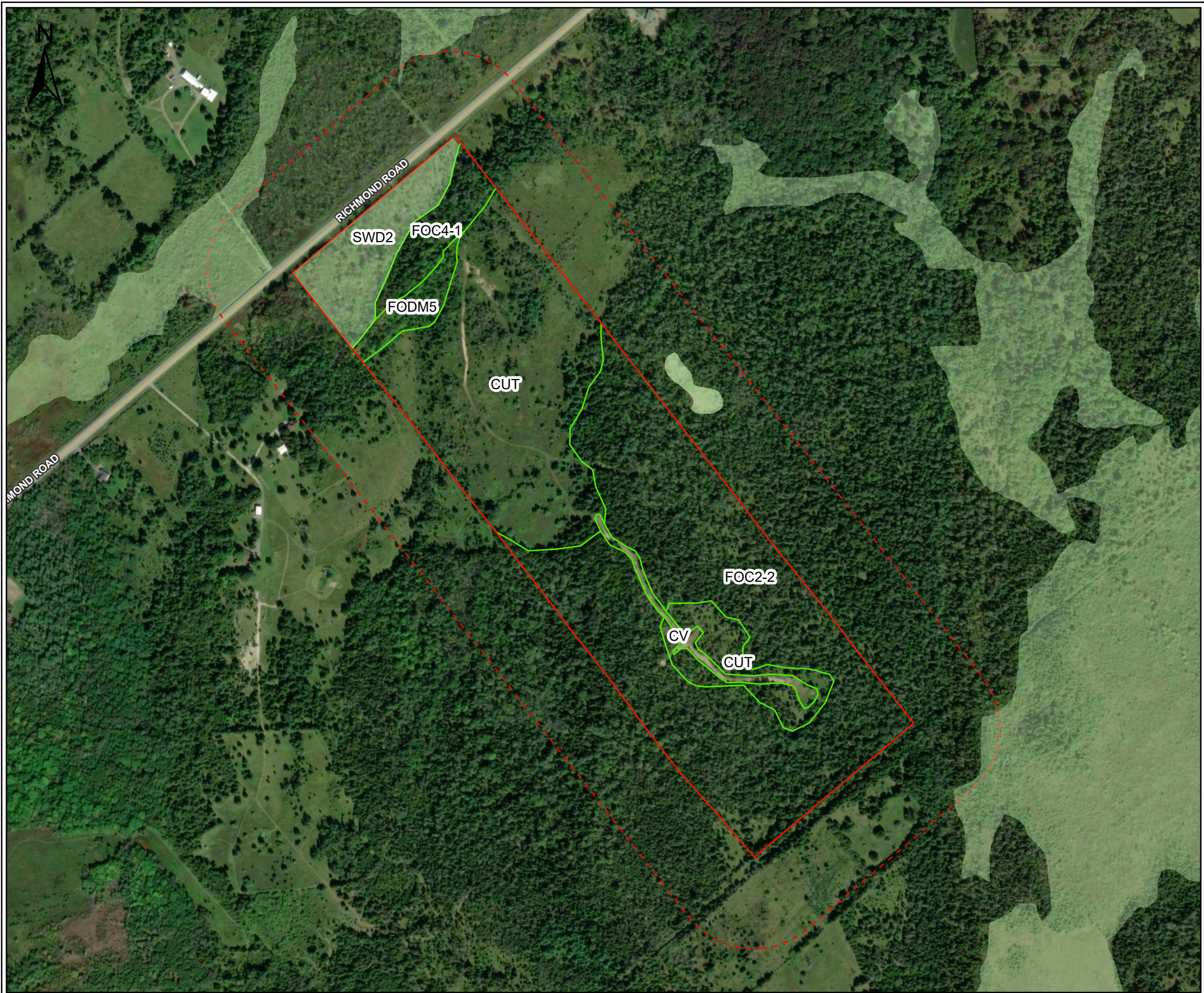
Meters



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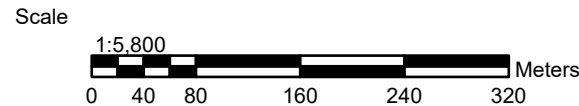
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Client:		Bredan Developments		Project:		100688.002	
Location							
5360 Bank Street Ottawa, Ontario							
Drwn By:		Chkd By:		Site Layout			
EP		TW					
Date: August 2025						Rev.	
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Figure A.2							



Legend

- Property Boundary
 - Study Area
 - Local Wetland
 - Vegetation Community
- FOC2-2 = White Cedar Bedrock Coniferous Forest
FOC4-1 = White Cedar Coniferous Forest
FODM5 = Dry – Fresh Sugar Maple Deciduous Forest
SWD2 = Ash Mineral Swamp
CUT = Cultural Thicket
CV = Constructed





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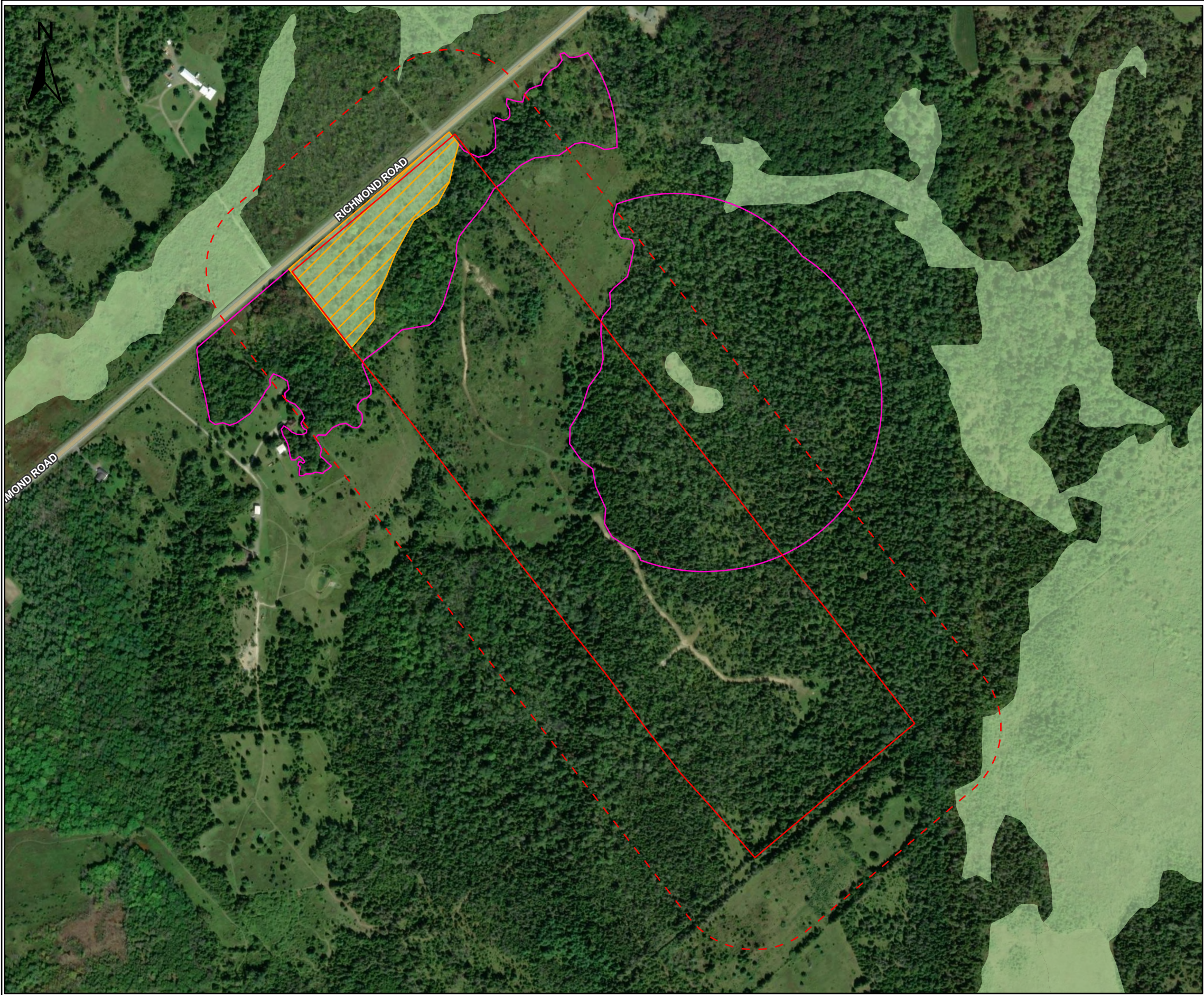
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Client:	M Signature Homes	Project:	100165.004
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Location	Part of Lot 18, Concession 3 Beckwith Township, Ontario
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Drwn By: EP	Chkd By: TW	Vegetation Communities
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Date: August 2025	Rev. 0	Figure A.3
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Legend

- Property Boundary
- Study Area
- Local Wetland
- Woodland Amphibian Breeding SWH
- Black Ash Occurrence

Scale

1:5,800

0 40 80 160 240 320 Meters



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Location							
Part of Lot 18, Concession 3 Beckwith Township, Ontario							
Drwn By:		Chkd By:		Natural Heritage Features			
EP		TW					
Date: August 2025						Rev.	
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Figure A.4							



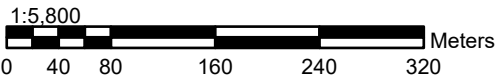
Legend

- Property Boundary
- Study Area
- Local Wetland

Development Concept

- Lot
- Block
- Road

Scale



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Client:

M Signature Homes

Project:

100165.004

Location

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Beckwith Township, Ontario

Drwn By:
EP

Chkd By:
TW

Development Concept

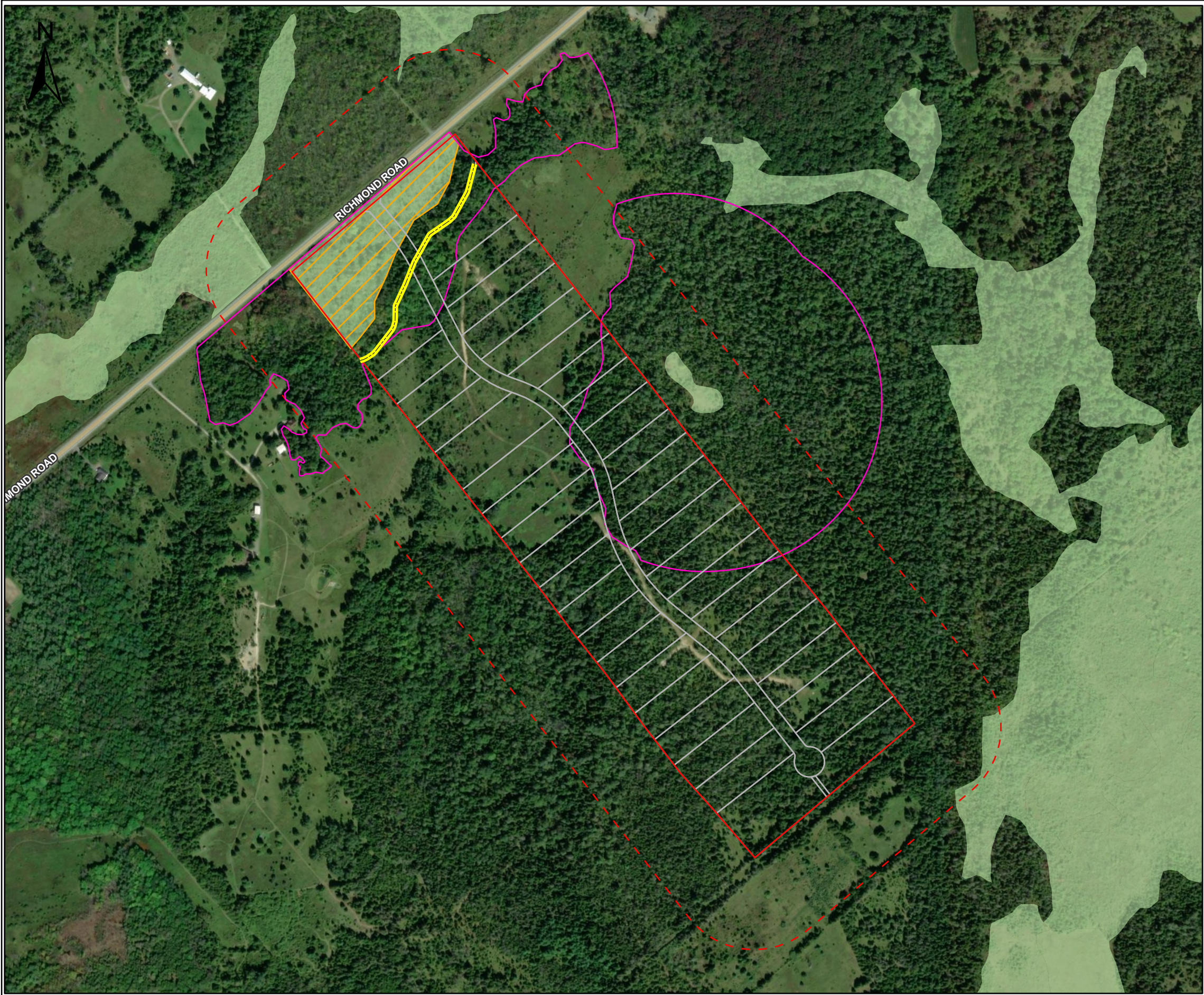
Date: August 2025

Rev.

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0

Figure A.5



Legend

- Property Boundary
- Study Area
- Local Wetland
- Development Concept
- Woodland Amphibian Breeding SWH
- Black Ash Occurrence
- 30 m Setback

Scale

1:5,800

0 40 80 160 240 320 Meters



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Location							
Part of Lot 18, Concession 3 Beckwith Township, Ontario							
Drwn By:		Chkd By:		Mitigation Measures			
EP		TW					
Date: August 2025				Rev.			
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APPENDIX B

Site Photographs



Site Photograph 1 – Ash Mineral Swamp (SWD2).



Site Photograph 2 – Dry White Cedar Calcareous Bedrock Coniferous Forest (FOC2-2).



Site Photograph 2 – Fresh-Moist White Cedar Coniferous Forest (FOC4-1).



Site Photograph 2 – Dry – Fresh Sugar Maple Deciduous Forest (FODM5).



Site Photograph 5 – Cultural thicket (CUT) within center of property.



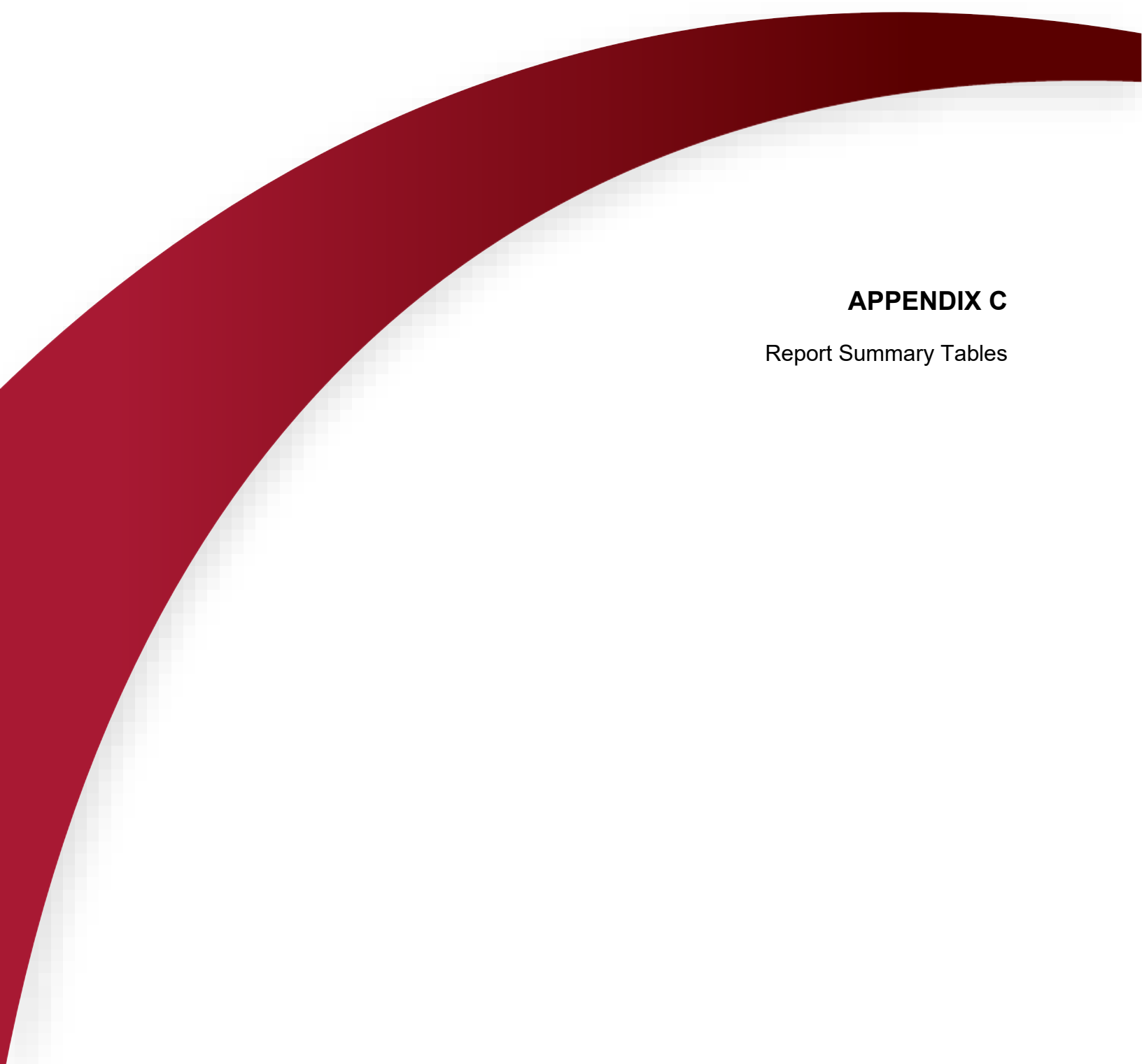
Site Photograph 6 – Cultural thicket (CUT) within rear of property.



Site Photograph 7 – Example of vernal pool within Constructed (CV).



Site Photograph 8 – Constructed (CV).



APPENDIX C

Report Summary Tables

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

Common Name	Scientific Name	S-Rank	Year Observed	Evidence
Avian Species				
American crow	<i>Corvus brachyrhynchos</i>	S5B	2021, 2025	Heard calling
American goldfinch	<i>Spinu tristis</i>	S5B	2021, 2025	Heard calling
American redstart	<i>Setophaga ruticilla</i>	S5B	2021	Heard calling
American robin	<i>Turdus migratorius</i>	S5B	2021, 2025	Heard calling, observed foraging
American woodcock	<i>Scolopax minor</i>	S4B	2021	Flushed
Barred owl	<i>Strix varia</i>	S5	2021	Heard calling
Black-and-white warbler	<i>Mniotilta varia</i>	S5B	2021, 2025	Heard calling
Black-capped chickadee	<i>Poecile atricapillus</i>	S5	2021	Heard calling
Black-throated green warbler	<i>Setophaga cvirens</i>	S5B	2021	Heard calling
Blue jay	<i>Cyanocitta cristata</i>	S5	2021, 2025	Heard calling
Brown creeper	<i>Certhia americana</i>	S5B	2021	Observed foraging
Canada goose	<i>Branta canadensis</i>	S5	2025	Observed on-site
Chipping sparrow	<i>Spizella passerina</i>	S5B	2021	Heard calling
Common raven	<i>Corvus coraz</i>	S5	2021	Heard calling
Common yellowthroat	<i>Geothlypis trichas</i>	S5B	2021	Heard calling
Eastern kingbird	<i>Tyrannus tyrannus</i>	S4B	2021	Heard calling, observed perched
Eastern phoebe	<i>Sayornis phoebe</i>	S5B	2021	Heard calling
Eastern towhee	<i>Pipilo erythrophthalmus</i>	S4B	2021	Heard calling
Eastern whip-poor-will	<i>Antrostomus vociferus</i>	S4B	2021	Heard calling
Eastern wood-pewee	<i>Contopus virens</i>	S4B	2021	Heard calling
Field sparrow	<i>Spizella pusilla</i>	S4B	2021, 2025	Heard calling
Gray catbird	<i>Dumetella caroliniensis</i>	S4B	2021	Heard calling
Great crested flycatcher	<i>Myiarchus crinitus</i>	S5B	2025	Heard calling
Hairy woodpecker	<i>Picoides villosus</i>	S5	2021	Heard calling
Mourning dove	<i>Senaida macroura</i>	S5	2021, 2025	Heard calling
Nashville warbler	<i>Leiothlypis ruficapilla</i>	S5B	2025	Heard calling
Northern flicker	<i>Colaptes auratus</i>	S4B	2021	Heard calling, observed foraging
Northern cardinal	<i>Cardinalis cardinalis</i>	S5	2021	Heard calling
Northern waterthrush	<i>Parkesia noveboracensis</i>	S5B	2021	Observed on-site
Ovenbird	<i>Seiurus aurocapilla</i>	S4B	2021, 2025	Heard calling
Red-breasted nuthatch	<i>Sitta canadensis</i>	S5	2021, 2025	Heard calling
Red-eyed vireo	<i>Vireo olivaceus</i>	S5B	2021	Heard calling
Red-winged blackbird	<i>Agelaius phoeniceus</i>	S4B	2021, 2025	Heard calling
Ruffed grouse	<i>Bonasa umbellus</i>	S4	2021	Heard drumming, flushed
Song sparrow	<i>Melospiza melodia</i>	S5B	2021, 2025	Heard calling
Turkey vulture	<i>Cathartes aura</i>	S5B,S3N	2025	Observed flying overhead
White-breasted nuthatch	<i>Sitta carolinensis</i>	S5	2021, 2025	Heard calling
White-crowned sparrow	<i>Zonotrichia leucophrys</i>	S4B	2021	Heard calling
White-throated sparrow	<i>Zonotrichia albicollis</i>	S5B	2021, 2025	Heard calling
Wild turkey	<i>Meleagris gallopavo</i>	S5	2021	Observed on-site
Wilson's snipe	<i>Gallinago delicata</i>	S5B	2021	Heard winnowing
Yellow warbler	<i>Setophaga petechia</i>	S5B	2021	Heard calling
Yellow-bellied sapsucker	<i>Sphyrapicus varius</i>	S5B	2021	Heard calling and drumming
Mammalian Species				
American black bear	<i>Ursus americanus</i>	S5	2021	Camera trap
Porcupine	<i>Erethizon dorsatum</i>	S4	2021	Observed on-site
White-tailed deer	<i>Odocoileus virginianus</i>	S5	2021	Observed on-site
Amphibian Species				
American toad	<i>Anaxyrus americanus</i>	S5	2021	Heard calling
Gray treefrog	<i>Hyla versicolor</i>	S5	2021	Heard calling
Green frog	<i>Lithobates clamitans</i>	S5	2021, 2025	Heard calling
Northern leopard frog	<i>Lithobates pipiens</i>	S5	2021	Heard calling
Spring peeper	<i>Pseudacris crucifer</i>	S5	2021	Heard calling
Western chorus frog	<i>Pseudacris triseriata</i>	S4	2021	Heard calling
Wood frog	<i>Lithobates sylvaticus</i>	S5	2021	Heard calling
Reptilian Species				
Eastern milksnake	<i>Lampropeltis triangulum</i>	S4	2021	Observed on-site

Notes:
Subnational Conservation Status Ranks:
S1 - Critically Imperilled, at very high risk of extirpation, very few populations or occurrences or very steep population decline
S2 - Imperilled, 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 RATIONALE FOR SIGNIFICANT WOODLANDS

Woodland Criteria	Further Considered in EIS	Rationale
Woodland Size	Yes	Contiguous woodlands on-site and off-site meet the minimum size requirement for the planning area (> 50 ha).
Ecological Functions		
a) Woodland Interior	No	Interior woodlands on-site does not meet the minimum size requirement for the planning area (> 8 ha).
b) Proximity	Yes	Woodlands on-site are proximate to local wetlands.
c) Linkages	No	Woodlands on-site do not provide linkages to other natural heritage features.
d) Water Protection	Yes	Woodlands on-site are proximate to local wetlands.
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
Winter Deer Yard	No	While there are stands of coniferous woodlands on-site, as outlined in the Significant Wildlife Habitat Criteria Schedules (OMNRF, 2015) winter deer yards and deer management are an MNRF responsibility. Based on review of publicly available data from the OMNRF on Land Information Ontario Geo-hub, no Stratum I deer yards, Stratum II deer yards, or winter congregation areas have been identified on-site or within the broader study area. The closest deer yard to site is a patch of Stratum I deer yard located approximately 20 km to the west.
Colonial Bird Nesting Habitat	No	No suitable habitat located on-site or within the study area to support colonial bird nesting.
Waterfowl Stopover and Staging Areas	No	Wetland habitat on-site is too small and lacks abundant food supplies (aquatic invertebrates and vegetation in shallow water) to provide aquatic SWH for waterfowl stopover and staging areas. Furthermore, no indicator species were observed on-site during the site investigations. Terrestrial stopover and staging areas are not present on-site.
Shorebird Migratory Stopover Area	No	Shorebird stopover sites are typically well-known and have a long history of use. The site does not contain suitable shoreline habitat for shorebird foraging.
Raptor Wintering Area	No	While the site contains both forest and upland habitat, it does not meet the candidate habitat criteria as the upland habitat for CUM, CUT, CUS and CUW habitat on-site does not meet the minimum size criteria of greater than 20 ha. The OAG habitat on-site does not meet the candidate habitat criteria due to the heavily disturbed nature of the site, due to on-going pasture field and active farming within the ecosite.
Bat Hibernacula	No	Cave and crevice habitat is not present on-site or within the study area.
Bat Maternity Colonies	No	Woodlands on-site do not meet minimum snag density (>10 snags/hectare) requirement to be considered SWH for bat maternity colonies.
Turtle Wintering Area	No	No suitable aquatic habitat on-site to provide adequate protection from winter elements.
Reptile Hibernaculum	No	No structures such as large rock piles, bedrock outcrops, services or other karstic features have been identified on-site.
Migratory Butterfly Stopover Area	No	The site is not located within 5 km of Lake Ontario and therefore does not meet the defining criteria.
Landbird Migratory Stopover Area	No	The site is not located within 5 km of Lake Ontario and therefore does not meet the defining criteria.

TABLE C.4
SCREENING RATIONALE FOR SPECIALIZED WILDLIFE HABITATS

Specialized Wildlife Habitat	Further Considered in EIS	Rationale
Waterfowl Nesting Area	Yes	Potentially suitable upland habitat is present adjacent to deciduous swamp habitat on-site.
Bald Eagle and Osprey Nesting, Foraging and Perching Habitat	No	The site is located >120 m from any habitat which could support foraging bald eagles or osprey. Nesting sites for these species are uncommon in Ecoregion 6E (MNRF, 2012).
Woodland Nesting Raptor Habitat	No	Nesting may occur in any ecosite and species preference is towards mature forest stands >30 ha with >10 ha of interior habitat with a 200 m buffer. Contiguous forest stands >30 ha are present; however, interior forest habitat with a 200 m buffer does not meet the minimum size criteria. While an active stick nest was observed on-site Red-Tailed Hawks are not listed as a wildlife indicator species for woodland raptor nesting. No other sticks nests were observed on-site.
Turtle Nesting Habitat	No	No suitable habitat (exposed mineral soil with minimal vegetation cover) is present within 100 m of the wetlands on-site.
Seeps and Springs	No	Seeps were identified within the pasture land on-site. However, as outlined in the SWH Criteria Schedules seeps and springs are considered candidate SWH when they occur within any forested ecosite with less than 25% meadow, field or pasture habitat. As the seeps identified on-site do not meet the candidate criteria for ELC no seep or spring SWH is present on-site.
Woodland Amphibian Breeding Habitat	Yes	Swamp habitat on-site may provide suitable habitat to support woodland amphibian breeding habitat.
Wetland Amphibian Breeding Habitat	No	Suitable wetland habitat is not present on-site to support wetland amphibian breeding.
Woodland Area-Sensitive Bird Breeding Habitat	No	Woodland area-sensitive birds require interior forest habitat located >200 m from the forest edge in large (>30 ha) forest stands. Woodlands on-site do not meet the defining criteria.

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

General Habitats of Species of Further Considered Conservation Concern in EIS		Rationale
Marsh Breeding Bird Habitat	No	No suitable marsh habitat for marsh breeding bird nesting. While deciduous swamps are present on-site the swamps lack suitable structure (shrub cover and emergent aquatic vegetation) preferred by green heron. No
Open Country Breeding Bird Habitat	No	No suitable meadow habitat on-site to support open country bird breeding due to recent (< 5 years) agricultural disturbances.
Shrub/Early Successional Breeding Bird Habitat	No	Candidate early successional breeding bird habitat typically includes fallow fields transitioning to early successional forest habitats that are > 10 ha but have not been actively used for farming. The cultural thickets on-site are not considered SWH due to recent (< 5 years) agricultural disturbances.
Terrestrial Crayfish Habitat	No	Terrestrial crayfish are only found within southwestern Ontario (MNR, 2012).
Special Concern and Rare Wildlife Species	Yes	The following species of special concern were identified on-site during the site investigation: eastern wood-pewee and eastern whip-poor-will. Occurrence data for the NHIC also indicates that no other species of special concern or rare wildlife species have been observed on-site or in the study area.

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 <i>confirmed</i> wetland amphibian breeding habitat has been identified on-site.
Deer Movement Corridor	No	No winter deer yards have been identified on-site by the OMNRF.

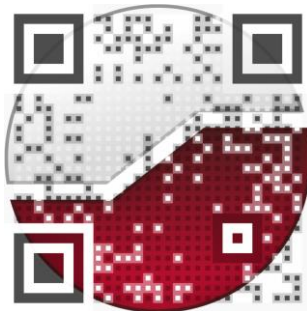
TABLE C.7
SCREENING RATIONALE FOR POTENTIAL SPECIES AT RISK ON-SITE OR WITHIN STUDY AREA

Species	ESA Status	Habitat Use	Probability of Occurrence On-Site or Within Study Area	Rationale
Avian				
Bank Swallow	Threatened	Colonial nester, burrows in eroding silt, to sand banks, sand pit walls, etc.	Low	Preferred foraging field habitat is located on-site, however, no suitable nesting habitat located on-site or within study area. No historical records for species in study area.
Barn Swallow	Special Concern	Nests in barns and other semi-open structures. Forages over open fields and meadows.	Low	Potentially suitable foraging habitat is present on-site and within surrounding study area. No suitable nesting habitat on-site. Species was not detected on-site during site investigations.
Bobolink	Threatened	Nests in dense tall grass fields and meadows, low tolerance for woody vegetation.	Low	No suitable grassland habitat on-site to support bobolink nesting or foraging. Species was not detected on-site during site investigations.
Canada Warbler	Special Concern	Prefers wet forests with dense shrub layers	Low	Forest structure within study area is unlikely to provide preferred habitat. Species was not observed or detected during any of the site investigations.
Cerulean Warbler	Threatened	Prefers mature deciduous forest habitat.	Low	Forest composition may provide suitable habitat. No historical records of species in study area. Species was not observed or detected during any of the site investigations.
Chimney Swift	Threatened	Nests in traditional-style open brick chimneys.	Low	Anthropogenic structures within study area may provide roosting habitat. No historical records of species. Species not observed during field investigations.
Common Nighthawk	Special Concern	Nests in a variety of open sites: beaches, fields and grave rooftops.	Low	Suitable habitat does not occur on-site. No historical records of species in study area. Species not observed during field investigations.
Eastern Meadowlark	Threatened	Nests and forages in dense tall grass fields and meadows, higher tolerance to woody vegetation.	Low	No suitable grassland habitat on-site to support eastern meadowlark nesting or foraging. Species was not detected on-site during site investigations.
Eastern Wood-Pewee	Special Concern	Woodland species, often found near clearings and edge habitat.	High	Suitable woodland habitat occurs on-site; species was observed during site investigations.
Evening Grosbeak	Special Concern	Nests in trees or large shrubs, preference to large coniferous forests, will use deciduous. Overwinters in Ottawa.	Low	Suitable habitat may occur on-site. No historical records of species in study area. Species not observed during field investigations.
Golden Eagle	Endangered	Nests on remote, bedrock cliffs, overlooking large burns, lakes or tundras	Low	Suitable nesting habitat does not occur on-site.
Golden-winged Warbler	Special Concern	Ground nesting, edge species. Breeds in successional scrub habitats surrounded by forests.	Low	Site is unlikely to provide suitable habitat for golden-winged warblers due to the lack of successional scrub habitat.
Grasshopper Sparrow	Special Concern	Ground-nesting grassland species. Prefers fields with low sparse vegetation on sand, alvars or poor soils.	Low	Grassland habitat not present on-site. No historical records of species in study area. Species not observed during field investigations.
Henslow's Sparrow	Endangered	Prefers open, moist, tallgrass fields.	Low	Suitable grassland habitat not present on-site. No historical records of species in study area. Species not observed during field investigations.
Least Bittern	Threatened	Prefers marshes, shrub swamps, usually near cattails	Low	Suitable habitat may be present within the study area; however, does not occur on-site. NHIC indicates species within 1 km of study area. Species not observed during field investigations.
Loggerhead Shrike	Endangered	Prefers grazed pastures with short grass and scattered shrubs, especially hawthorn.	Low	Preferred pasture habitat and shrub vegetation does not occur on-site.
Olive-sided Flycatcher	Special Concern	Forest edge species, forages in open areas from high vantage points in trees.	Low	No suitable forest on-site to provide suitable edge habitat for olive-sided flycatcher.
Peregrine Falcon	Special Concern	Nests on cliffs near water and on more anthropogenic structures such as tall buildings, bridges, and smokestacks.	Low	Project area lacks suitable nesting structure for peregrine falcon. No recent observations within 1 km of project area. Species not observed during field investigations.
Red-headed Woodpecker	Endangered	Prefers open deciduous woodlands, particularly those dominated by oak and beech.	Low	No woodlands in study area to provide preferred habitat and structure for nesting red-headed woodpeckers.
Rusty Blackbird	Special Concern	Wet wooded or shrubby areas (nests at edges of Boreal wetlands)	Low	Suitable habitat does not occur on-site.
Short-eared Owl	Threatened	Ground nester, prefers open habitats, fields and marshes.	Low	Suitable open field is present on site, but no open marsh habitat on-site.
Wood Thrush	Special Concern	Prefers deciduous or mixed woodlands.	Moderate	Suitable woodland habitat occurs on-site and within study area. No recent observations within 2 km of project area. Species was not observed on-site during the site investigations.
Mammalian				

TABLE C.7 SCREENING RATIONALE FOR POTENTIAL SPECIES AT RISK ON-SITE OR WITHIN STUDY AREA				
Eastern Red Bat	Endangered	Roosts in tree foliage; overwinters in leaf litter. Do not roost in anthropogenic structures.	Moderate	Potentially suitable vegetation adjacent to site. Potential summer habitat present within study area.
Eastern small-footed Myotis	Endangered	Roosts in rock crevices, barns and sheds. Overwinters in abandoned mines. Summer habitats are poorly understood in Ontario, elsewhere prefers to roost in open, sunny rocky habitat and occasionally in buildings (Humphrey, 2017).	Moderate	Potentially suitable vegetation and anthropogenic structures adjacent to site. Potential summer habitat present within study area.
Hoary Bat	Endangered	Roosts in tree foliage; overwinters in leaf litter. Do not roost in anthropogenic structures.	Moderate	Potentially suitable vegetation and anthropogenic structures adjacent to site. Potential summer habitat present within study area.
Little Brown Myotis	Endangered	Maternal colonies known to use buildings, may also roost in trees during summer. Affinity towards anthropogenic structures for summer roosting habitat and exhibit high site fidelity (Environment Canada, 2015).	Moderate	Potentially suitable vegetation and anthropogenic structures adjacent to site. Potential summer habitat present within study area.
Northern myotis (Northern Long-eared Bat)	Endangered	Occurs throughout eastern North America in associated with Boreal forests. Roosts mainly in trees, occasionally anthropogenic structures during summer (Environment Canada, 2015). Overwinters in caves and abandoned mines.	Low	Species affinity is for Boreal forests and species rarely roosts in anthropogenic structures.
Silver-haired Bat	Endangered	Roosts in tree foliage. Overwinters in in mines, rock crevices, trees, and snags. May use anthropogenic structures for roosting.	Moderate	Potentially suitable vegetation and anthropogenic structures adjacent to site. Potential summer habitat present within study area.
Tri-colored Bat	Endangered	Roosts in trees, rock crevices and occasionally buildings during summer. Overwinters in caves and mines.	Moderate	Potentially suitable vegetation and anthropogenic structures adjacent to site. Potential summer habitat present within study area.
Reptilian				
Blanding's Turtle	Threatened	Inhabits quiet lakes, streams and wetlands with abundant emergent vegetation. Frequently occurs in adjacent upland forests.	Moderate	Suitable wetland habitat may be present on-site. NHIC indicates species within 2 km of study area. Species not observed during field investigations. Overwintering and nesting habitat is not present on-site.
Eastern Musk Turtle	Special Concern	Wetlands. Highly aquatic habitats.	Low	Overwintering and nesting habitat is not present on-site. Species not observed during site investigations. No NHIC or Ontario Herptile Atlas occurrence records with in 10km of site.
Eastern Ribbonsnake	Special Concern	Marshy edges of wetlands and watercourses.	Low	Suitable habitat may be present on-site, in forests along edges of surface water features within the site. Species not observed during site visits.
Northern Map Turtle	Special Concern	Highly aquatic species, found only in lakes and large rivers.	Low	Overwintering and nesting habitat is not present on-site. Species not observed during site investigations. No NHIC or Ontario Herptile Atlas occurrence records with in 10km of site.
Snapping Turtle	Special Concern	Highly aquatic species, found in a wide variety of wetlands, water bodies and watercourses.	Moderate	Suitable wetland habitat may be present on-site. NHIC indicates species within 2 km of study area. Species not observed during field investigations. Overwintering and nesting habitat is not present on-site.
Spotted Turtle	Endangered	Secretive wetland species.	Low	Project area not likely to provide suitable habitat. No recent observations within 1 km of project area. Species not observed during field investigations.
Wood Turtle	Endangered	Primarily terrestrial forest species. Associated with clear, gravelly streams.	Low	Project area not likely to provide suitable habitat. No recent observations within 1 km of project area. Species not observed during field investigations.
Plants				
American Ginseng	Endangered	Rich, moist, relatively mature deciduous forests.	Low	Suitable habitat conditions are not present within project area. No recent occurrence records within 1 km of project area. Species was not observed during the field investigations.
Black Ash	Endangered	Predominantly a wetland species, found in swamps, floodplains and fens.	High	Suitable habitat present on-site. Species was observed during field investigations.

TABLE C.7 SCREENING RATIONALE FOR POTENTIAL SPECIES AT RISK ON-SITE OR WITHIN STUDY AREA				
Butternut	Endangered	Inhabits a wide range of habitats including upland and lowland deciduous and mixed forests.	Moderate	Portions of the property are in an open and regenerative state. No Butternut were observed on-site.
Lichens				
Pale-bellied Frost Lichen	Endangered	Grows on the bark of hardwood trees such as white ash, black walnut, American elm and ironwood. Can also be found growing on fence posts and boulders.	Low	Species believed to be extirpated from the Ottawa area. No recent occurrence records within 1 km of project area. Species was not observed during the field investigations.
Fish				
American Eel	Endangered	Primarily nocturnal, hiding in soft substrate or submerged vegetation during the day.	Low	No DFO or other records of species within the study area. Species not observed during field investigations.
Bridle Shiner	Special Concern	Prefers clear water with abundant vegetation over silty or sandy vegetation	Low	No DFO or other records of species within the study area. Species not observed during field investigations.
Channel Darter	Special Concern	Prefers clear water with abundant vegetation over silty or sandy vegetation	Low	No DFO or other records of species within the study area. Species not observed during field investigations.
Lake Sturgeon	Endangered	Large lakes and rivers. Forages in cool water, 4-9m deep over soft substrates. Spawns in shallower, fast-flowing areas over rocks or gravel.	Low	No DFO or other records of species within the study area. Species not observed during field investigations.
Northern Brook Lamprey	Special Concern	Prefers shallow areas with warm water. Larvae burrows in soft substrate for up to 7 years.	Low	No DFO or other records of species within the study area. Species not observed during field investigations.
River Redhorse	Special Concern	Prefers fast-flowing, clear rivers over rocky substrate	Low	No DFO or other records of species within the study area. Species not observed during field investigations.
Silver Lamprey	Special Concern	Larvae live 4-7 years in burrows, preference to soft substrate.	Low	No DFO or other records of species within the study area. Species not observed during field investigations.
Insects				
American Bumblebee	Special Concern	Nests at or above ground level, often in mats of long grass but also in other available shelters.	Moderate	Greater study area may provide suitable habitat. Species not observed during field investigations.
Bogbean Buckmoth	Endangered	Preferred food plant is bog bean, present in a variety of wetlands including bogs, swamps and fens.	Low	Preferred wetland habitat may be present within project area. Study area is outside of known range of Ontario populations. Species nor preferred food source observed during field investigations.
Gypsy Cuckoo Bumble Bee	Endangered	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	Caterpillars require milkweed plants confined to meadow and open areas. Adult butterflies use more diverse habitat with a variety of wildflowers	Moderate	Greater study area may provide suitable habitat. Species not observed during field investigations.
Mottled Duskywing	Endangered	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	Habitat generalist	Low	No recent occurrence reports in the area, thought to be locally extirpated.
Rusty-patched Bumble Bee	Endangered	Habitat generalist	Low	Currently the only known population occurs in Pinery Provincial Park.
Transverse Lady Beetle	Endangered	Habitat generalist	Low	No new records of traverse lady beetle in Ontario, species thought to be absent in former habitats.
West Virginia White Butterfly	Special Concern	Requires mature moist deciduous woods with larval host plant toothwort.	Low	Necessary vegetation and toothwort plant not present within project area or within study area.
Yellow-banded Bumble Bee	Special Concern	Habitat generalist; mixed woodlands, variety of open habitat	Moderate	Greater study area may provide suitable habitat. Species not observed during field investigations.

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