ENVIRONMENTAL IMPACT STUDY

March 16, 2026

Pine Valley Estates Ltd.
9332 County Road 93
Town of Midland

Prepared for: Pine Valley Estates Ltd.

ROOTS ENVIRONMENTAL

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1 INTRODUCTION

Roots Environmental Inc. ("Roots") has been retained by Pine Valley Estates Ltd. to complete an Environmental Impact Study (EIS) for the property known as 9332 County Road 93 in the Town of Midland. The location of the property is illustrated on *Figure 1 – Site Location*.

The proposed development of the site is for residential uses. An EIS is required to support an Official Plan Amendment (OPA), Zoning By-Law Amendment (ZBA) and Draft Plan of Subdivision for the development of the site in accordance with the policy requirements of the Town of Midland Official Plan.

The purpose of the EIS is to identify the presence of any natural heritage features on the site or adjacent lands of 120 metres, assess any impacts resulting from the proposed development, and identify any preventative, mitigative or remedial measures to ensure no negative impacts.

The subject property has a total area of 27.63 ha. The applications include a development area of 17.10 ha. The study area for the EIS includes the proposed development area and adjacent lands of 120 metres as illustrated in *Figure 2 – Study Area*.

2 ENVIRONMENTAL LEGISLATION AND PLANNING POLICIES

A detailed review of relevant environmental legislation and policies will be included in Section 7 of this EIS. This review will include the Provincial Planning Statement (PPS), County of Simcoe Official Plan, Town of Midland Official Plan, *Endangered Species Act* (ESA) and *Migratory Birds Convention Act*.

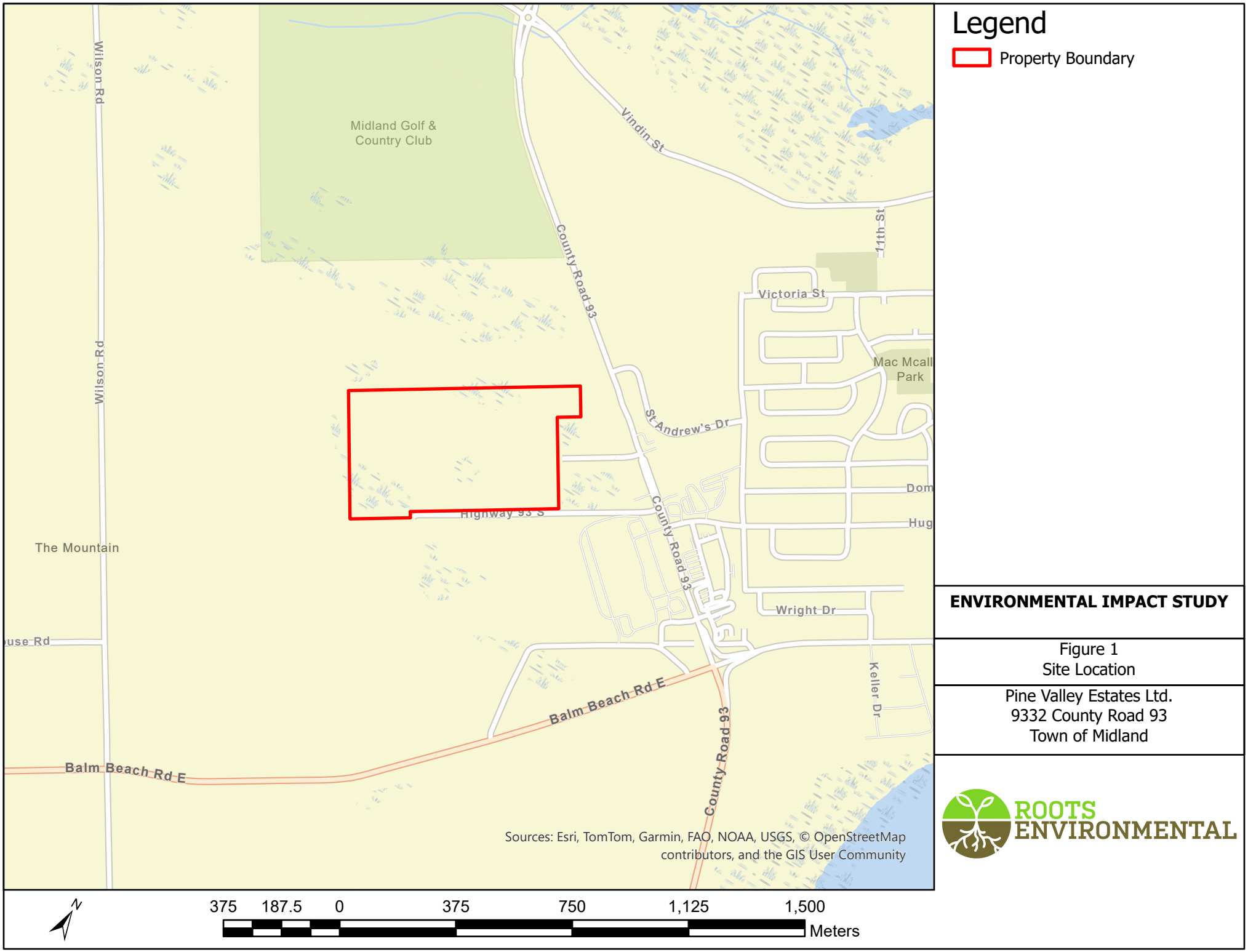
3 METHODOLOGY

Preparation for the EIS involves a desktop review of available information, field investigations and consultation with applicable agencies. The following provides a summary of tasks completed for the EIS.

3.1 Desktop Review

A desktop review was completed to identify previously known natural features and occurrences of rare species or SAR in the Study Area. Sources included the following:

- The Ministry of Natural Resources and Forestry (MNRF) Natural Heritage Information Centre (NHIC) Make A Map: Natural Heritage Areas;
- County of Simcoe and Town of Midland Official Plans;
- Natural Heritage Analysis: Highway 93 Secondary Plan, Town of Midland (PlanB December 2020);
- Ontario Nature Reptile and Amphibian Atlas;
- Atlas of Breeding Birds of Ontario; and
- iNaturalist.



ENVIRONMENTAL IMPACT STUDY

Figure 1
Site Location

Pine Valley Estates Ltd.
9332 County Road 93
Town of Midland

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Legend

- Property Boundary
- Adjacent Lands (120 metres)
- Development Area

125 62.5 0 125 250 375 500 Meters

ENVIRONMENTAL IMPACT STUDY

Figure 2
Study Area

Pine Valley Estates Ltd.
9332 County Road 93
Town of Midland

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3.2 Field Investigations

Site investigations were completed in 2021and 2025 based on a desktop review and habitats present in the Study Area. Table 1 below provides a summary of dates and tasks completed and *Figure 3 – Survey Locations* provides the location of breeding bird and bat roost surveys completed in the study area.

Detailed site investigations were limited to the subject property. Adjacent lands of 120 metres were investigated through roadside observations where possible, aerial photography and background mapping to avoid any contravention of the *Trespass to Property Act*.

Table 1: Summary of Surveys in 2021 and 2025

Task	Survey Dates (Duration)	Weather Conditions	Personnel
Breeding Bird Surveys	June 15, 2021 (0645-1000hrs) June 30, 2021 (0640-1000hrs)	15°C; 2 wind; 0% Cloud Cover (CC) 22°C; 1 wind; 100% CC	Kyle Fleming (Roots)
Vascular Plants Ecological Land Classification	June 7, 2021 (1030 – 1420hrs) August 5, 2021 (0900-1330hrs) October 6, 2021 (1030-1415hrs)	23°C; 1 wind; 0% CC 25°C; 1 wind; 0% CC 17°C; 1 wind; 90% CC	Kyle Fleming
Bat Maternity Roost Tree Survey	April 26, 2021 (0945-1515hrs)	6°C; 2 wind; 50% CC	Kyle Fleming
Whip-poor-will Surveys	May 25, 2021 (2110-2130hrs) June 22, 2021 (2136-2151hrs) June 24, 2021 (2137-2200hrs)	20°C; 1-2 wind; 0% CC 12°C; 1 wind; 0% CC 22°C; 1-2 wind; 75% CC	Kyle Fleming
Reconnaissance Visit	October 10, 2025	N/A	Kyle Fleming

3.2.1 Vascular Plants

Vascular plant surveys were completed in the spring, summer and fall growing seasons were completed using roving transects through all habitats within the subject property. Adjacent lands were completed using observations from the site property line.

Particular attention was paid during field investigations for rare species and Species at Risk listed under the Ontario *Endangered Species Act*. Incidental observations were also completed during other surveys on site.

The significance of vascular plants sampled was assessed based on the Natural Heritage Information Centre's (NHIC) rankings (S-rank) for provincial rarity.

Legend

- Property Boundary
- Adjacent Lands (120 metres)
- Development Area
- Breeding Bird Point Count Stations
- Bat Roost Tree Survey Points

125 62.5 0 125 250 375 500 Meters

ENVIRONMENTAL IMPACT STUDY

Figure 3
Survey Locations

Pine Valley Estates Ltd.
9332 County Road 93
Town of Midland

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3.2.2 Vegetation Communities

Vegetation communities were identified using the Ecological Land Classification (ELC) for Southern Ontario, First Approximation (Lee et al., 1998). Polygons within the development area were delineated using aerial photography, field sampled and classified into the most appropriate vegetation type. The polygons were identified based on vegetative cover, soils and landscape features. Vegetation communities within adjacent lands are identified to the Ecosite or Community level dependent on accessibility and/or sightlines from roadside observations.

The significance of the vegetation communities was assessed based on the Natural Heritage Information Centre's (NHIC) provincial rankings where applicable.

3.2.3 Breeding Birds

Two surveys for breeding bird species were completed using general protocols in the Ontario Forest Breeding Bird Program and Ontario Breeding Bird Survey Guide for Participants (2021 version).

Pre-determined point count sampling stations were spaced to ensure coverage of all habitats (i.e., forest, open meadow, cultural), site conditions (i.e., topography) did not reduce chances of affecting detections, and to minimize noise influence from adjacent anthropogenic areas.

Surveys were completed early in the morning between 0500-1000hrs, in calm weather conditions. Each survey lasted approximately 10 minutes in duration, where all species detected (auditory and visual) were documented. Additional observations were made during transit between survey stations.

3.2.4 Species At Risk

3.2.4.1 BAT MATERNITY ROOST (TREED)

All treed areas within the subject property were surveyed for the presence of any cavity/snag trees that could support maternity roosting habitat for SAR bat species using general criteria in the Species at Risk Bats Survey Note (MECP 2022).

Surveys included counting all trees that contained suitable snags and/or cavities at each station within a 12.6-m radius. An overall snag density was then calculated using the total number of snags and survey plots completed for treed habitats.

3.2.4.2 WHIP-POOR-WILL/NIGHTJAR SURVEYS

Surveys for the threatened Eastern Whip-poor-will (*Antrostomus vociferus*) were completed following protocols in the MNRF (Kemptville) 'Whip-poor-will Survey Instructions' (2015) and 'Ontario Nightjar Survey Instruction Manual' (Bird Studies Canada February 2021), which were adapted for this site. The surveys included:

- Three surveys from May-July during the breeding season.
- Begin each survey at least 30 minutes after sunset and end no later than 15 minutes before sunrise.
- Surveys are conducted when the moon is above the horizon and not obscured by clouds.

- Conducted during the appropriate phase of the lunar cycle, specifically when 50% or more of the visible moon face is illuminated and clearly visible.
- The weather conditions must be calm to light winds, no precipitation and temperatures above 10°C.

Two stations were surveyed along Foster Road abutting the south limit of the site to ensure coverage of habitats containing a mosaic of open areas and woodlands as illustrated in Figure 3.

3.2.5 Incidental Wildlife Observations

Incidental observations were made for mammals and herptiles (amphibians and reptiles) during field investigations through observations of physical evidence (scats, tracks) and for shelter, feeding and breeding sites (e.g., vernal pools, rock piles, etc.).

3.2.6 Aquatic Habitats

No aquatic features (i.e., wetlands, watercourses, vernal pools, etc.) were identified on site during the desktop review and field surveys completed in 2021 by Roots.

4 EXISTING CONDITIONS

4.1 Desktop Review

4.1.1 MNRF NHIC Make-A-Map: Natural Heritage Areas

The NHIC geographic search for the subject property and adjacent lands of 120-metres was completed to identify previous records for natural features and species in the area as shown on *Figure 4 – NHIC Natural Areas Map*. Occurrences documented by NHIC may include those beyond the site and on habitats suitable to those species. The following records of rare species or SAR were found:

- Colonial Waterbird Nesting Area
- Eastern Massasauga Rattlesnake (*Sistrurus catenatus*) (Threatened) (THR)
- Red-headed Woodpecker (*Melanerpes erythrocephalus*) (Endangered) (END)
- Wood Thrush (*Hylocichla mustelina*) (Special Concern) (SC)
- Eastern Wood-pewee (*Contopus virens*) (SC)

Unevaluated wetlands are also identified in NHIC mapping for the property is illustrated on *Figure 4-NHIC map*. No other features (i.e., Provincially Significant Wetlands, ANSI) were identified in the MNRF mapping and query. A summary of the records is included in Appendix A.

4.1.2 Ontario Nature Reptile and Amphibian Atlas

A geographic query of occurrence square 17NK85 was completed using the Ontario Natural Reptile and Amphibian Atlas for observations of species collected from 1970-2019. Occurrences will include those beyond the site and within habitats suitable to those species.

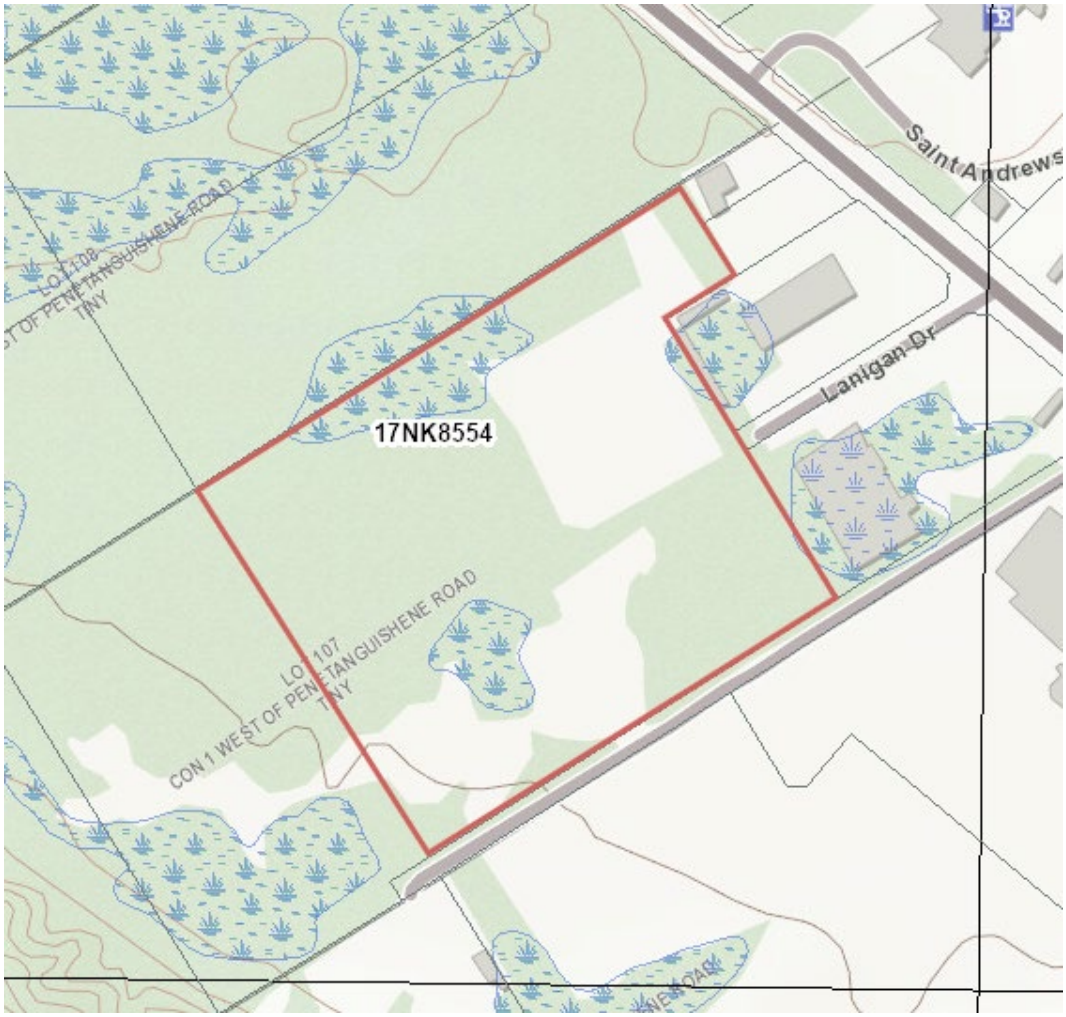


Figure 4: NHIC Natural Areas Map (Subject Property in red)

SAR or rare species identified by the query were:

- Blanding's Turtle (*Emydoidea blandingii*) (THR);
- Eastern Musk Turtle (*Sternotherus odoratus*) (SC);
- Northern Map Turtle (*Graptemys geographica*) (SC);
- Snapping Turtle (*Chelydra serpentina*) (SC);
- Eastern Hog-nosed Snake (*Heterodon platirhinos*) (THR); and
- Massasauga (THR).

Other species noted in the search are common to Ontario. A summary of the records is included in Appendix A.

4.1.3 Atlas of Breeding Birds of Ontario

A geographic query of occurrence square 17NK85 was completed using the Atlas Breeding Birds of Ontario for observations of species collected from 2001-2005. It is noted that these occurrence squares

encompass a large area that includes the subject property. Occurrences will include those beyond the subject property and on habitats suitable to those species.

SAR or rare species identified by the query were:

- Least Bittern (*Ixobrychus exilis*) (THR)
- Whip-poor-will (*Antrostomus vociferus*) (THR)
- Chimney Swift (*Chaetura pelagica*) (THR)
- Eastern Wood-Pewee (*Contopus virens*) (SC)
- Bank Swallow (*Riparia riparia*) (THR)
- Barn Swallow (*Hirundo rustica*) (SC)
- Wood Thrush (*Hylocichla mustelina*) (SC)
- Canada Warbler (*Cardellina canadensis*) (SC)
- Bobolink (*Dolichonyx oryzivorus*) (THR)
- Eastern Meadowlark (*Sturnella magna*) (THR)

Other species noted in the search are common to Ontario. A summary of the search is included in Appendix A.

4.1.4 iNaturalist

A geographic query was completed for iNaturalist records within the site and adjacent lands. All species were found to be common (S4 or higher) and non-at-risk in Ontario.

4.1.5 Town of Midland Official Plan

The subject property is located in a Secondary Pan Area and Greenlands area according to Schedule A and designated Natural Heritage based on Schedule C to the Town of Midland Official Plan. It is noted that the Town of Midland is identified as a major growth area within the region based on the Official Plan for the County of Simcoe which designates the subject lands as Settlements.

4.1.6 Natural Heritage Analysis: Highway 93 Secondary Plan- Town of Midland

A Natural Heritage System (NHS) analysis was completed for the Highway 93 Secondary Plan study area in the Town of Midland, which included the subject property. One of the key tasks of this analysis was to identify developable and non-developable lands in the secondary plan area through the identification of natural heritage features and determination of potential negative impacts per policies of the PPS. Through this study, an area on site was identified for future potential development in the secondary plan area and the following natural heritage features (per the PPS) were identified within the subject property and adjacent lands:

- Significant Woodlands; and
- Significant Wildlife Habitat.

4.2 Field Investigations

4.2.1 Vegetation Communities/Flora

Vegetation communities were identified on site using ELC to the vegetation type within the proposed development area. Adjacent lands are classified to the community level where possible. Provided below are descriptions of communities, which are shown on *Figure 5 – Existing Conditions* and *Table 2 – Site Photos*.

CUT1-1 (Sumac Cultural Thicket Type)

Small areas of culturally influenced (previously cleared) thicket were identified in the Study Area. These thickets were largely comprised of Staghorn Sumac (*Rhus typina*), with sporadic White Pine (*Pinus strobus*), Scots Pine (*Pinus sylvestris*), Green Ash (*Fraxinus pennsylanica*), Red Oak (*Quercus rubra),* Large-toothed Aspen (*Populus grandidentata*) and Hard Maple (*Acer saccharum*). Groundcover/shrub cover included Raspberry species (*Rubus* spp.), Bracken Fern (*Pteridium aquilinum*), Common Juniper (*Juniperus communis*), Poison Ivy (*Rhus radicans*), Kentucky Bluegrass (*Poa pratensis*), Calico Aster (*Symphyotrichum lateriflorum*) and Canada Goldenrod (*Solidago canadensis*). Exposed boulders were present, which may have been deposited in this location by past farming operations.

FOD3-1 (Dry – Fresh Poplar Deciduous Forest Type)

This community is largely dominated by Large-toothed Aspen with associates of Trembling Aspen (*Populus tremuloides*), Hard Maple, White Pine, Red Oak, and American Beech (*Fagus grandifolia*). Groundcover included Bracken Fern, Canada Mayflower (*Maianthemum candense*), Poison Ivy and Showy Tick Trefoil (*Desmodium canadense*).

FOM5-2 (Dry – Fresh Poplar Mixed Forest Type)

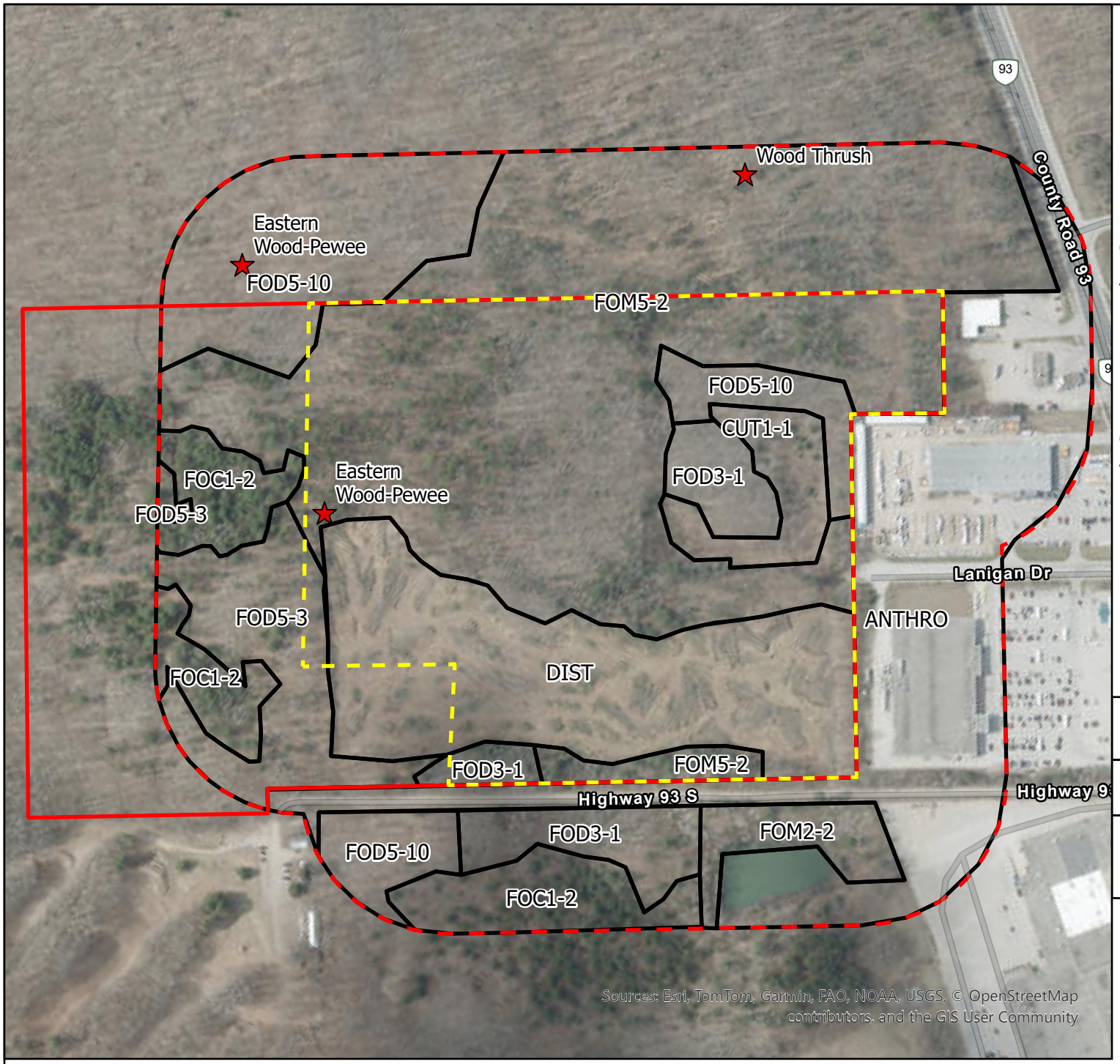
Mixed woodland habitat found on site was comprised of White Pine, Red Pine (*Pinus resinosa*), Lage-toothed Aspen, Hard Maple, Red Oak and Green Ash. Understory vegetation included Bracken Fern, Showy Tick Trefoil, Raspberry species, Canada Mayflower, Common Juniper, Drooping Wood Sedge (*Carex arctata*), and Orange Hawkweed (*Hieracium aurantiacum*).

FOD5-10 (Dry – Fresh Sugar Maple – White Birch – Poplar Deciduous Forest Type)

This area was found to be a young mixed stand of Hard Maple, Large-Toothed Aspen, Trembling Aspen and Red Oak. Understory vegetation included Garlic Mustard (*Alliaria petiolate*), Poison Ivy, Common Helleborine (*Epipactis helleborine*), Canada Mayflower, Sarasprillia (*Aralia nudicaulis*), Bracken Fern and Common Dandelion (*Taraxacum offinale*).

FOD5-3 (Dry – Fresh Sugar Maple – Oak Deciduous Forest Type)

This community in the west part of the study area was found to be a mixed deciduous forest comprised of semi-mature Hard Maple, Red Oak, Large-toothed Aspen and associate species including White Pine, Red Maple and American Beech. Understory species included Bracken Fern, Canada Mayflower and Poison Ivy.



Legend

- Property Boundary
- Adjacent Lands (120 metres)
- Development Area
- Special Concern Species
- ELC Communities

CUT1-1: Sumac Cultural Thicket Type
FOD3-1: Dry-Fresh Poplar Deciduous Forest Type
FOM5-2: Dry-Fresh Poplar Mixed Forest Type
FOD5-10: Dry-Fresh Sugar Maple - White Birch - Poplar Deciduous Forest Type
FOD5-3: Dry-Fresh Sugar Maple-Oak Deciduous Forest Type
FOC1-2: Dry-Fresh White Pine-Red Pine Coniferous Forest Type
ANTHRO: Anthropogenic
DIST: Disturbed

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Figure 5
Existing Conditions

Pine Valley Estates Ltd.
9332 County Road 93
Town of Midland

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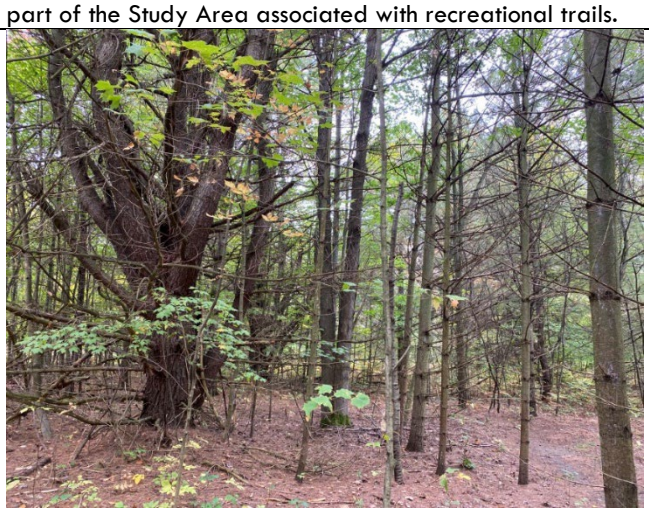
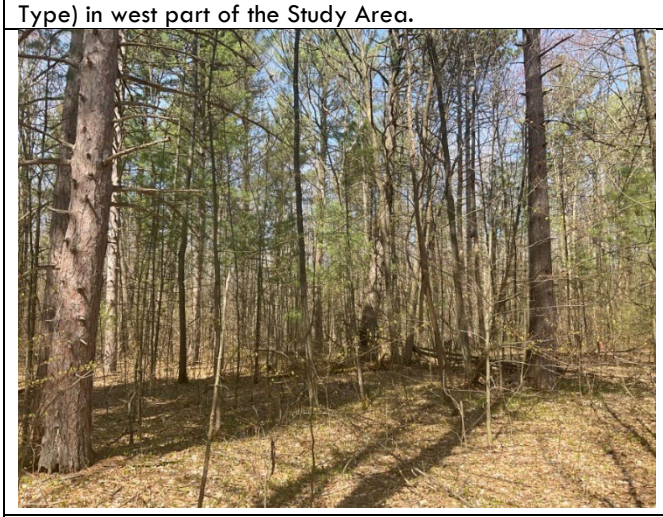
Table 2: Site Photos (Kyle Fleming 2021 and 2024)

	
CUT1-1 (Sumac Cultural Thicket Type) on the subject property.	CUM1-1: Dry Moist Old Field Vegetation within the west part of the Study Area associated with recreational trails.
	
FOD5-3 (Dry – Fresh Sugar Maple – Oak Deciduous Forest Type) in west part of the Study Area.	FOD5-1: Hard Maple Deciduous Forest Type in south part of the subject property.
	
CUP3-3 – Scotch Pine Coniferous Plantation Type in in north part of subject property.	DIST – previously cleared area on site.

FOC1-2 (Dry- Fresh White Pine – Red Pine Coniferous Forest Type)

These communities are dense stands of almost monoculture White and Red Pine with occasional Hard Maple, American Beech and Large-toothed Aspen. Remnant larger specimen trees are present that were likely left during past logging and agricultural activities.

ANTHRO (Anthropogenic)

This unit includes all anthropogenic land disturbances in the east and south parts of the Study Area.

DIST (Disturbed)

Logging/tree cutting occurred in the south part of the subject property in 2024. Based on previous ELC mapping completed by Roots in 2021, vegetation communities found within this area included Cultural Thicket (CUT1-1), Mixed Forest (FOM5-2) and Hardwood Forest (FOD3-1 and FOD5-3). Descriptions of these communities are provided above, as they extended outside that disturbed area.

Surveys completed for the property found no rare species or SAR. Plan B also noted that no rare species were noted during site visits completed in 2020. All species were found to be common to similar habitats found in Ontario or are listed as non-native/exotic species. A detailed list of species is provided in Appendix B.

4.2.2 Breeding Birds

40 bird species were documented on site or on adjacent lands. Two Species of Special Concern, the Eastern Wood-Pewee (*Contopus virens*) and Wood Thrush (*Hylocichla mustelina*) were found in the periphery of the Study Area in the west and north parts.

Surveys completed in May and June 2021 for the Eastern Whip-poor-will found no detections for this species within the Study Area.

All remaining species were found to be common within this area and Ontario. A list of species observed is included in Appendix B.

4.2.3 Bats

Bat roost tree surveys completed for the Study Area found only two cavities in the entire development area, illustrating the low quality of potential maternity roosting habitat. Forest structure within most of the Study Area was considered young-to-semi mature and cultural thicket. Older tree specimens were largely White Pine and Red Pine, were found not to have cavities and are not a preferred tree species for roosting bat species.

4.2.4 Incidental Wildlife

Incidental wildlife observations made during site visits included the Coyote (*Canis latrans*), Raccoon (*Procyon lotor*), White-Tailed Deer (*Odocoileus virginianus*), Porcupine (*Erethizon dorsatum*) and Eastern Garter Snake (*Thamnophis sirtalis*).

5 ANALYSIS OF NATURAL HERITAGE FEATURES

Identification of natural heritage features is based on the PPS, the MNR "Natural Heritage Reference Manual" (2nd Edition) (MNRF 2010), Town of Midland Official Plan, "Significant Wildlife Habitat Criteria Schedules for Ecoregion 6E" (MNR January 2015), and listings and habitat descriptions for species listed in the ESA.

5.1 Significant Wetlands (and Coastal Wetlands)

A review of the MNR NHIC mapping found no Provincially Significant Wetland in the Study Area.

5.2 Other Wetlands (Unevaluated, Evaluated Non-Provincially Significant)

A review of the MNR NHIC mapping identifies the presence unevaluated wetlands in the subject properties. Site investigations in 2021 and those conducted by Plan B in 2020 found no wetland habitat present.

5.3 Significant Woodlands

The Natural Heritage Reference Manual (OMNR 2010) (Section 7.3) states that planning authorities should undertake comprehensive studies to identify significant woodlands in their planning area. The Town of Midland Official Plan does not identify criteria for the identification of Significant Woodlands; however, Significant Woodlands are included in the Natural Heritage designation on Schedule C of the Official Plan. It is assumed that woodlands within the subject properties and Study Area that are part of this Natural Heritage designation have been deemed Significant.

Table 7-2 in the NHRM provides criteria for the identification of Significant Woodlands within municipalities. For a municipality with 30-60% woodland cover, woodlands 50 ha in size or larger should be considered significant. Table 3 below provides a summary of criteria within NHRM Table 7-2 and an assessment of woodlands in the Study Area in relation to those criteria.

Table 3: Significant Woodlands Criteria

Woodland Criteria	Site Evaluation	Significant or Not Significant
Woodland Size	Where woodland cover is 30-60% of the land cover, woodlands 50ha in size or larger should be considered significant. Woodland cover on the Study Area is contiguous with woodlands to the north, west and south that were found to be greater than 50ha in total size as shown on *Figure 6 – Significant Natural Features*.	**Significant**
Ecological Functions		
2.a. Woodland Interior	No woodland interior (>200m from edge) is present on site or adjacent lands.	Not Significant
2.b. Proximity to other Woodlands or other habitats	Woodlands within the Study Area are part of a much larger woodland tract that extends to the west, south and north. While not within the Study Area, this larger	**Significant**

	woodland does overlap and abut other significant features, including the Lalligan Lake PSW to the east.	
2.c. Linkages	Woodlands in the Study Area are part of the municipal Natural Heritage System in the Town of Midland Official Plan. Linkages to adjacent woodlands to the east, north and south may be present where a gap between woodlands is less than 20 metres in width.	**Significant**
2.d. Water Protection	The Study Area is located within a Significant Groundwater Recharge Area (SGRA) as identified in the County of Simcoe and Town of Midland Official Plans.	**Significant**
2.e. Woodland Diversity	Woodland vegetation types found in the subject property are common to Ontario (S5) and not considered in decline.	Not Significant
Uncommon Characteristics	Composition of the woodland and vegetation types are considered secure (S5) in Ontario. The woodlands are a mix of immature to semi-mature woodlands less than 100 years in age based on diameters of trees on site and historic aerial photography.	Not Significant
Economic and Social Functional Values	The site is not presently utilized for any commercial harvesting. Parts of this woodland were utilized for agriculture in the past. Recreational trails are located in west part of the Study Area; however, these trails are not part of any Town trail system.	Not Significant

26.58 ha of woodlands identified as significant are present within the study area as illustrated in *Figure 6 –Natural Heritage Features*. Using MNR woodland areas mapping (2025), these woodlands on site are part of a larger woodland area exceeding 189.11 ha in size. This total area in the surrounding landscape may be underrepresented, as additional wooded areas may be present that are either connected or have gaps <20-metres in width.

Based on the presence of Significant Woodlands within the study area, an impact assessment will be completed in Section 6.

5.4 Significant Valleylands

No significant valley land features were identified during the desktop review or found during field investigations on the site.

5.5 Significant Wildlife Habitat

As analysis of candidate Significant Wildlife Habitat has been completed using the "*Significant Wildlife Habitat Criteria Schedules for Ecoregion 6E*" (MNRF 2015) based on the results of the desktop review and field investigations. This assessment is included as Appendix C. Table 4 summarizes potential candidate Significant Wildlife Habitat (SWH) features and Figure 6 illustrates the extent of these habitats within the study area.

Legend

- Property Boundary
- Adjacent Lands (120 metres)
- Development Area
- SWH (Special Concern Species)
- Significant Woodlands

125 62.5 0 125 250 375 500 Meters

ENVIRONMENTAL IMPACT STUDY

Figure 6
Natural Heritage Features

Pine Valley Estates Ltd.
9332 County Road 93
Town of Midland

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Table 4: Candidate Significant Wildlife Habitat

SWH	ELC Units	Area (ha)
Special Concern and Rare Wildlife Species	Special Concern Eastern Wood-Pewee and Wood Thrush. Deciduous and mixed woodlands habitat (FOD5-3, FOD5-10, FOD3-1 and FOD5-2).	22.51

Based on the presence of SWH features identified on site and adjacent lands, an impact assessment will be completed in Section 6.

5.6 Significant Areas of Natural and Scientific Interest

A desktop review of available information found no Provincially Significant ANSI in the study area.

5.7 Fish Habitat

A review of available mapping and field investigations did not identify any watercourses or waterbodies within the study area.

5.8 Habitat of Endangered Species and Threatened Species

No habitat for threatened or endangered species was identified on site by an analysis of desktop resources, field investigations completed in 2021 and by Plan B in 2020.

6 PROPOSED DEVELOPMENT

6.1 Development Overview

The proposed development will include 1051 units, which will include townhouses, stacked townhouses and an apartment building as illustrated in *Figure 7 – Site Plan*. Two roadways will be created, with Street B providing access to an adjacent property to the south, and an extension of Lanigan Drive from the east, which will also extend to per Town requirements to the northeast at County Road 93.

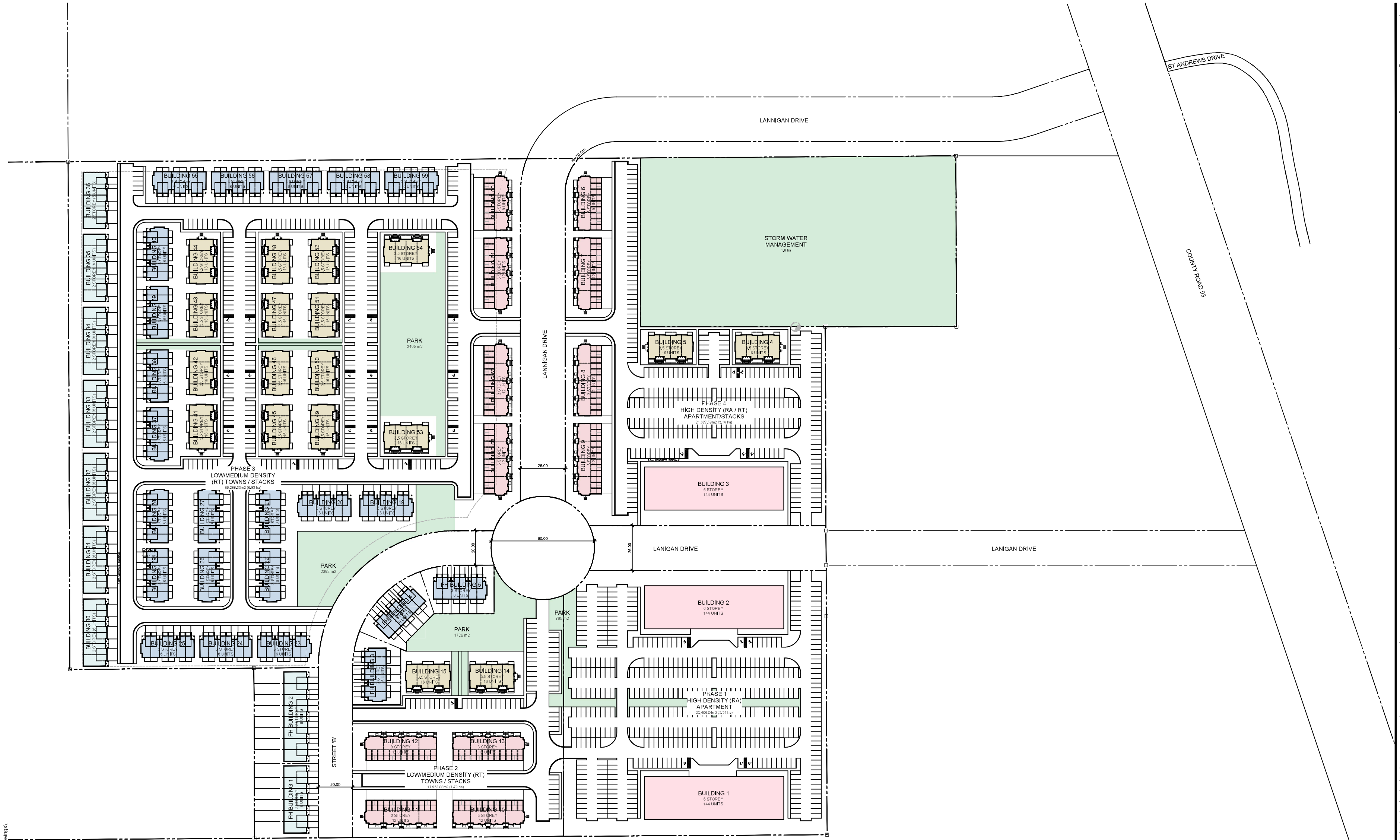
The development will also include parks, a stormwater management facility, and retention of an Environmental Block in the west part of the site.

7 IMPACT ASSESSMENT AND MITIGATION

Two natural heritage features were confirmed within the study area: Significant Woodlands and Significant Wildlife Habitat.

This section will assess potential impacts to these features and ecological functions as a result of the proposed development and provides mitigation measures to ensure no negative impacts. This report utilizes the definition of a "negative impact" in the PPS (Page 48) "*in regard to other natural heritage features and areas, degradation that threatens the health and integrity of the natural features or ecological functions for which an area is identified due to single, multiple or successive development or site alteration activities.*"

Figure 7



FOSTERS ROAD

UNITS BREAKDOWN						
PHASE	APARTMENT UNITS	REAR LANE UNITS	STACKED TOWNS	3 STOREY TOWNS	2 STOREY TOWNS	TOTAL NUMBER OF UNITS
PHASE 1	288	0	0	0	0	288
PHASE 2	0	48	32	0	0	80
PHASE 3	0	45	224	120	41	430
PHASE 4	144	45	32	0	0	221
FREEHOLD	0	0	0	18	14	32
TOTAL	432	138	288	138	55	1051

PARKING CALCULATIONS				
PHASE	NUMBER OF UNITS	REQUIRED PARKING SPACES	REQUIRED VISITOR SPACES (25% OF REGULAR SPACES)(NOT ADDITIONAL)	PROVIDED PARKING SPACES
PHASE 1	288	288 x 1.5 = 432	108	441
PHASE 2	98	98 x 1.5 = 147	37	159
PHASE 3	432	432 x 1.5 = 648	162	697
PHASE 4	224	224 x 1.5 = 336	84	378
TOTAL	1042	1042 x 1.5= 1563	391	1675

UNIT LEGEND	# units
21' (6.4m) 2 STOREY TOWN	55 units
16' - 6" (5.0m) 3 STOREY TOWN	138 units
20'-10"(6.3m) 3.5 STOREY STACKED TOWN	288 units
33' -7" (10.2m) 3 STOREY STACKED REAR LANE TOWN	138 units
6 STOREY APARTMENT BUILDING	432 units
TOTAL UNITS =	1051 units

COMMUNITY TRAIL / LINEAR PARK

P:\1-Projects\Pine Valley Homes\16142_9332 County Road 93, Midland\2-Drawings\

North Arrow
True North

ORCHARD DESIGN STUDIO INC.
marketingmeetsarchitecture

Project Information

PINE VALLEY HOMES

PINE VALLEY ESTATES
9332 County Road 93, Midland ON

Set Issuance

No.	Date	Description

Sheet Information

SITE PLAN

Project No. 16142
Project Start Date: 2025-10-16
File: 9332 County Road 93 - Site Plan.dwg
Drawn by: MGL
Scale: 1:1000

PRELIMINARY

A1.01

Plot Date|Time - 12/12/2025 12:14:45 PM

7.1 Significant Woodlands

Significant Woodlands are present within the subject property and adjacent lands to the north, west and south as illustrated in Figure 6. The test of 'negative impact' in this case is to determine if removal of woodland would result in a reduction in the overall size and degradation of those supporting characteristics that would diminish or eliminate significance.

Using MNR Wooded Areas (2025) layers, woodlands on site are part of a larger woodland feature that exceeds over 189.11 ha in size and is contiguous to the south, north and west of the study area as illustrated in *Figure 8 – Significant Woodlands*. This a conservative estimate, as linkages across roadways (<20-m separation) may increase the overall size of the connected woodland in the landscape to well over 500 ha. Note that part of the subject property was not included in the MNR Wooded Areas mapping, likely because it has historically disturbed and has only recently (<20 years) grown to the point where it would be considered an intact woodland.

The total woodlands area to be removed resulting from the proposed development is 11.54 ha, which would result in an overall decrease of 6.1% in the landscape. 9.90 ha of woodlands will be retained in the west part of the subject property plus an area of 0.71 ha, which will be restored with native species (trees and shrubs). These retained and restored areas, and the remaining woodland feature within the landscape, which is contiguous to the subject site will continue to meet the criteria for size (>50ha). It contains all secondary criteria for significance (i.e., linkages through the subject property, proximity to other features, etc.).

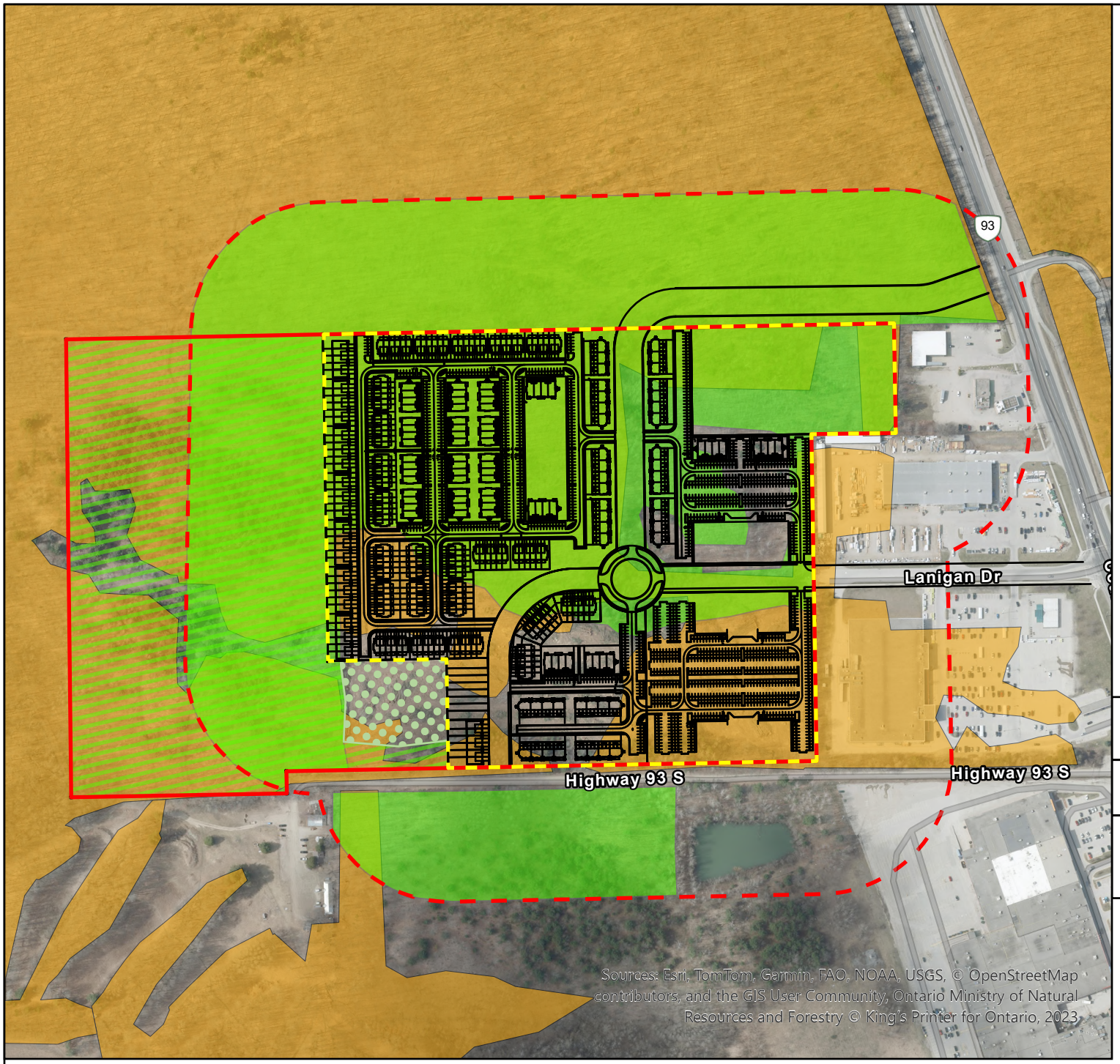
The proposed development area also utilizes areas that abut existing roads and commercial development, is part of previously disturbed areas, and is, based on field investigations, of lower quality than mature woodlands in the west and north parts of the site. Retained woodlands in the west part of the property are comprised of mature woodland habitat and will continue to provide a linkage in a north-south direction through the property.

Potential indirect impacts to Significant Woodlands on adjacent lands resulting from the proposed development during and post-construction could include the following:

- Impacts to adjacent retained vegetation during construction, including incidental harm or soil compaction from machinery in the rooting zone.
- Human disturbance through encroachment, dumping of refuse and garden waste, etc.
- Planting of non-native invasive species that can impact native species in the retained woodland.

To minimize indirect impacts resulting from the proposed development, the following mitigation measures are recommended:

- Establish a Tree Protection Limit along the west development limit abutting the retained woodland edge. The protection limit shall be clearly marked prior to and during construction to ensure no incidental intrusion in this area.
- Locate all equipment, storage areas, fueling outside of the Tree Protection Limit.



Legend

- Property Boundary
- Adjacent Lands (120 metres)
- Development Area
- Wooded Area (MNR) (2025)
- Significant Woodlands
- Retained Natural Heritage Area (9.90 ha)
- Restoration Area (0.71ha)

ENVIRONMENTAL IMPACT STUDY

Figure 8
Significant Woodlands

Pine Valley Estates Ltd.
9332 County Road 93
Town of Midland

ROOTS ENVIRONMENTAL

- Preparation of an Edge Management Plan that will illustrate the Tree Protection Limit, mitigation measures to reduce impacts to abutting treed areas, and planting of native, non-invasive trees, shrub, and groundcover along new forest edge where appropriate as determined by a qualified professional.
- Grade to match existing grades at the tree dripline along the Protection Limit to maintain drainage patterns.
- Installation of fencing (ex. post-wire, cedar rail, etc.) along the rear lot lines of all development abutting the new forest edge.
- An Environmental Pamphlet is prepared and provided for new purchasers of residences abutting the retained woodlands. This handbook shall advise residents of the potential impacts of removing vegetation with the woodlands, planting non-native invasive species, dumping of refuse and garden waste into the woodland area, and allowing urban pets (i.e., cats) to free-range outside of their properties.

Based on the retention of woodlands on site and adjacent woodlands which will continue to meet size requirements for significance, and implementation of mitigation measures to reduce indirect impacts pre-to-post-development, no negative impacts are anticipated resulting from the proposed development.

7.2 Significant Wildlife Habitat

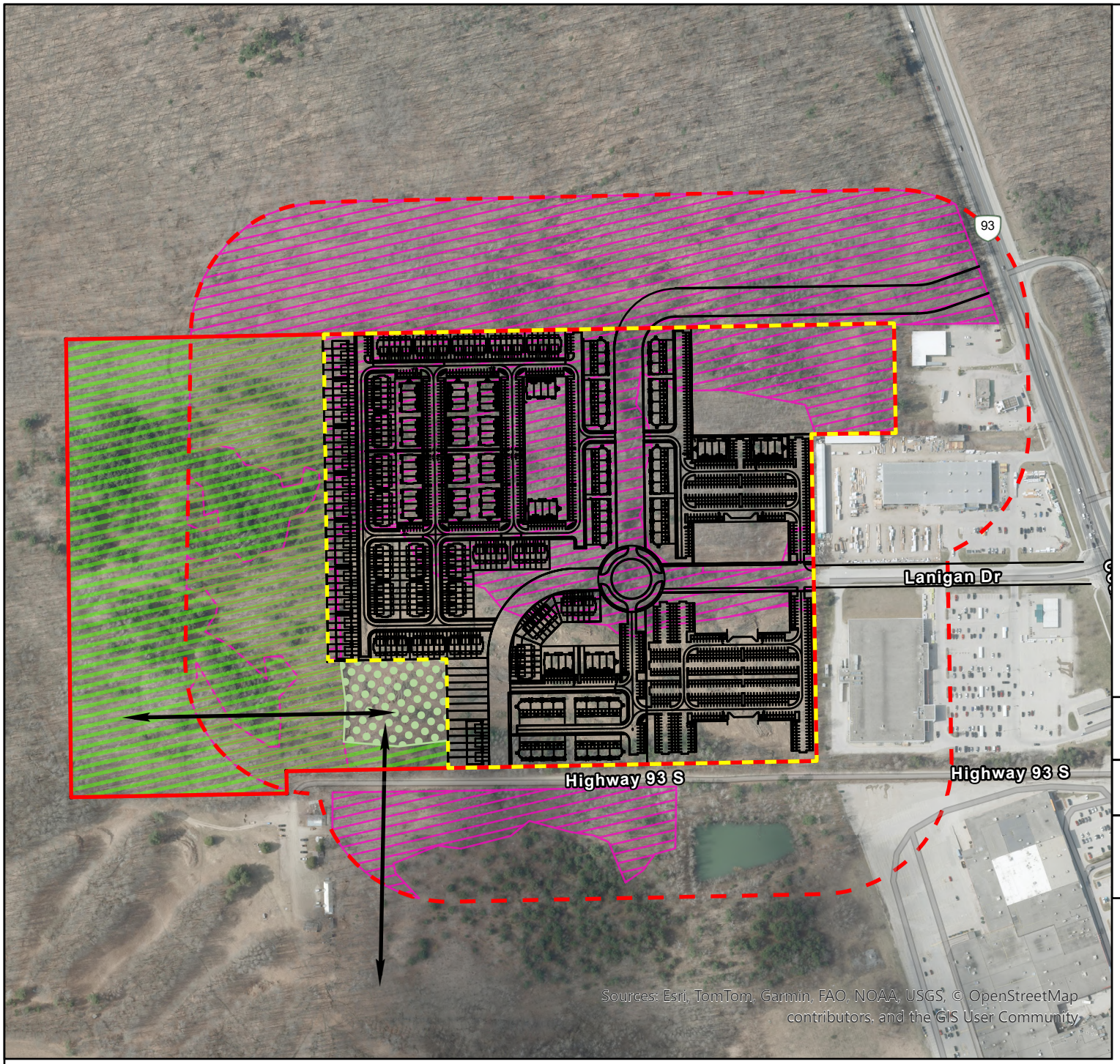
The identification of Significant Wildlife Habitat (SWH) within the Study Area is based on the presence of species of special concern (Eastern Wood-Pewee and Wood Thrush) and potential bat maternity roost habitat on adjacent lands. The test of a negative impact in this case is to determine if removal of woodland habitats within the development area would result in the degradation of habitat within this area and adjacent lands, thereby no longer meeting the criteria of significance.

Candidate SWH within the study area is approximately 22.51 ha. 9.25-ha of this habitat will be removed resulting from the proposed development. Within the west part of the subject property (Natural Heritage Area) and adjacent lands, 13.26 ha will be retained. In addition, adjacent woodlands to the south, north and west containing over similar or higher-quality woodland habitat will continue to provide habitat for the Eastern Wood-Pewee and Wood Thrush post-development. It is expected that Eastern Wood-Pewee and Wood Thrush displaced by removal of habitat in the development area will continue to utilize woodland habitats within the subject property and adjacent lands.

There will be no removal of potential bat maternity roost habitat on adjacent lands to the west or north within more mature deciduous woodlands.

A 100-metre or greater woodland corridor has been maintained in the west part of the subject property to allow for continued wildlife movement in a north-south direction through the subject property, adjacent lands and the surrounding landscape as shown on *Figure 9 – Significant Wildlife Habitat*.

To avoid potential direct impacts (i.e. destruction of nests), it is recommended that no clearing of vegetation occur between April 1 – August 31st per Environment Canada's general nesting periods of migratory birds. This window will also provide protection for other migratory bird species on site.



Legend

- Property Boundary
- Adjacent Lands (120 metres)
- Development Area
- SWH (Special Concern Species)
- Retained Natural Heritage Area (9.90 ha)
- Restoration Area (0.71ha)
- Wildlife Corridor (100m wide)

125 62.5 0 125 250 375 500 Meters

ENVIRONMENTAL IMPACT STUDY

Figure 9
Significant Wildlife Habitat

Pine Valley Estates Ltd.
9332 County Road 93
Town of Midland

ROOTS ENVIRONMENTAL

Potential indirect impacts to Significant Wildlife Habitat on adjacent lands resulting from the proposed development during and post-construction could include the following:

- Noise and light pollution to local wildlife within the adjacent woodlands;
- Human disturbance post-construction (i.e., trampling of vegetation, informal trails, removal of habitats, etc.).; and
- Residential pets that may harm local wildlife.

To minimize indirect impacts resulting from the proposed development, the following mitigation measures are recommended:

- Establish a Tree Protection Limit along the west development limit abutting the retained woodland habitats. The protection limit shall be cleared marked prior to and during construction to ensure no incidental intrusion in this area.
- Preparation of an Edge Management Plan that will illustrate the Tree Protection Limit, mitigation measures to reduce impacts to abutting treed areas, and plantings of native, non-invasive trees, shrub, and groundcover along new forest edge where appropriate as determined by a qualified professional.
- Installation of fencing (ex. post-wire, cedar rail, etc.) along the rear lot lines of all development abutting the edge of the retained habitats.
- An Environmental Pamphlet is prepared and provided for new purchasers of residences abutting the retained woodlands. This handbook shall advise residents of the potential impacts of removing vegetation with the woodlands, planting non-native invasive species, dumping of refuse and garden waste into the woodland area, and allowing urban pets (i.e., cats) to free-range outside of their properties.
- All external lighting (i.e., streetlights) includes deflectors to direct impact downward and away from the retained woodlands.

Based on the retention of woodlands on site and adjacent lands which will continue to meet size requirements for significance, and implementation of mitigation measures to reduce indirect impacts pre-to-post-development, no negative impacts are anticipated resulting from the proposed development.

7.3 Additional Recommendations

Based on discussions in March 2026 with the Severn Sound Environmental Association (SSEA), who will be reviewing the EIS on behalf of the Town, additional surveys will be completed in 2026 for the Red-headed Woodpecker (END) within the proposed development area. The results of the surveys will be provided as an Addendum to this EIS.

Surveys completed for the woodpecker will use guidelines in document "*Red-headed Woodpecker (Melanerpes erythrocephalus) Species Guidance*" (Wisconsin Department of Natural Resources (updated June 2017). This guideline was provided to Roots by MECP during consultation on other projects, as no specific guideline for Ontario has been developed.

7.4 Summary of Technical Recommendations

The following provides a summary of technical recommendations for mitigation measures made in this EIS to ensure no negative impacts to identified natural heritage features and their ecological functions, and for consistency and conformity with applicable municipal and provincial policy and legislation.

- Establish a Tree Protection Limit along the west development limit abutting the retained woodland edge. The protection limit shall be cleared marked prior to and during construction to ensure no incidental intrusion in this area.
- Locate all equipment, storage areas, fueling outside of the Tree Protection Limit.
- Preparation of an Edge Management Plan that will illustrate the Tree Protection Limit, mitigation measures to reduce impacts to abutting treed areas, and plantings of native, non-invasive trees, shrub, and groundcover along new forest edge where appropriate as determined by a qualified professional.
- Grade to match existing grades at the tree dripline along the Protection Limit to maintain drainage patterns.
- Installation of fencing (ex. post-wire, cedar rail, etc.) along the rear lot lines of all development abutting the new forest edge.
- An Environmental Pamphlet is prepared and provided to new purchasers of residences abutting the retained woodlands.
- No clearing of vegetation occurs between April 1 – August 31st.
- All external lighting (i.e., streetlights) includes deflectors to direct impact downward and away from the retained woodlands.
- Red-headed Woodpecker surveys be completed for the proposed development area in 2026 per MECP criteria and an addendum to the EIS be provided to the Town with the results of those surveys.

8 CONFORMITY WITH PLANNING POLICIES

The following tables provide a summary of planning policies and rationale for consistency/conformity with the Provincial Planning Statement, County of Simcoe Official Plan and Town of Midland Official Plan for the proposed development. This environmental policy analysis was undertaken by Charles F. Burgess, MCIP, RPP of Burgess Gleason Environmental Inc.

Table 5: Provincial Planning Statement (2024)

Section	Policy	Consistency
4.1.3	Natural heritage systems shall be identified in Ecoregions 6E and 7E[1] recognizing that they will vary in size and form in settlement areas, rural areas, and prime agricultural areas.	The Natural Heritage System (NHS) is illustrated on the Schedules of the Town of Midland's Official Plan. Based on these Schedules, the Study Area is located in the local NHS and, as a result, the appropriate environmental policies will apply.

4.1.4	Development and site alteration shall not be permitted in significant wetlands and coastal wetlands.	There are no significant wetlands or coastal wetlands within the subject property.
4.1.5	Development and site alteration shall not be permitted in valleylands, woodlands, wildlife habitat, and ANSI that are significant including coastal wetlands unless it has been demonstrated that there will be no negative impacts on the natural feature and their ecological functions.	The subject lands contain a significant woodland and significant wildlife habitat based on an assessment of existing information and site evaluations. It has been demonstrated through this analysis that there will be no negative impact from the proposed land use and development. In general, a large part of the significant woodland and wildlife habitat will remain on the landscape in a post-development situation. Refer to Section 7 of this EIS for greater detail and analysis.
4.1.6	Development and site alteration shall not be permitted in fish habitat except in accordance with provincial and federal requirements.	There are no watercourses or fish habitat on the subject lands.
4.1.7	Development and site alteration shall not be permitted in habitat of endangered species and threatened species except in accordance with provincial and federal requirements.	The field inspection and evaluation have demonstrated that the subject property is devoid of any habitat of endangered or threatened species. As a result, the provisions of the *Endangered Species Act* will be met prior to any development on the subject lands.
4.1.8	Development and site alteration shall not be permitted on adjacent lands to features identified in 4.1.4, 4.1.5, and 4.1.6 unless it has been demonstrated that there will be no negative impacts.	It has been demonstrated that there will be no negative impacts on the adjacent natural heritage features given a large part of the Significant Woodland and Wildlife Habitat will remain on the landscape in a post-development situation. Refer to Section 7 of this EIS for greater detail and analysis.

Table 6: County of Simcoe Official Plan (Office Consolidation 2023)

Section	Designation	Conformity
Schedule 5.1 to the Official Plan (OP)	The subject property is designated Settlements according to the Land Use Schedule to the Official Plan.	The Settlements designation in the County Official Plan is intended to reflect Settlement Areas. The Town of Midland is a defined Settlement Area where growth and development should be directed. On this basis, the proposed urban development within the Settlement Area of Midland complies with the County of Simcoe Official Plan. It should be noted that the County's Greenlands System and policies do not apply in Settlement Areas.

Schedules 5.2.2 and 5.2.3	These Schedules show the streams and evaluated wetlands, and ANSI within the County.	Based on these Schedules and site evaluations, the subject lands is devoid of any wetlands, ANSI, or watercourses.
Schedule 5.2.5	This Schedule illustrates the Highly Vulnerable Aquifers (HVA) within the County of Simcoe.	Based on this Schedule, the subject property is located outside any HVA.
Schedule 5.2.6	This Schedule shows the Significant Groundwater Recharge Area (SGRA) within the County.	The subject lands are within a SGRA. Through the planning and development process, proper studies and plans will be undertaken to ensure that the SGRA will be maintained. This includes storm water management, servicing, hydrogeological, and drainage plans that will be prepared to the satisfaction of the Town and applicable agencies.
3.3.15ii)	Development and site alteration is not permitted in Significant Woodlands and Significant Wildlife Habitat unless it has been demonstrated that there will be no negative impact on the natural features and their ecological function.	The analysis of this EIS (Section 7) has shown that the Significant Woodland and Wildlife Habitat within and adjacent the subject lands will exhibit no negative impacts despite the partial loss of feature. In general, a large part of the Significant Woodland and Wildlife Habitat will remain on the landscape in a post-development situation.
3.3.15vi)	Development and site alteration shall not be permitted on adjacent lands unless it has been demonstrated that there will be no negative impact on the natural feature or its ecological function. Adjacent lands are generally defined as 120 metres dependent upon the feature.	It has been demonstrated that there will be no negative impacts on the adjacent Significant Woodland and Significant Wildlife Habitat given a large part of these natural heritage features will remain on the landscape in a post-development situation. Refer to Section 7 of this EIS for greater detail and analysis.
4.5.6	In Settlement Areas, potential environmental impacts shall be mitigated using all reasonable methods within Significant Groundwater Recharge Areas.	Through the planning and development process, proper studies and plans will be undertaken to ensure that the SGRA will be maintained. These include storm water management, servicing, hydrogeological, and drainage plans that will be prepared to the satisfaction of the Town and applicable agencies.

Table 7: Town of Midland Official Plan (2025 – Office Consolidation)

Schedule	Designation	Conformity
Schedule A to the Official Plan (OP) Growth Areas	The Study Area and Pinevalley Landholding are within the Greenlands designation and within a Secondary Plan Area according to this land use Schedule.	This Environmental Impact Study is provided in support of an Official Plan Amendment process. It has been determined based on field evaluations and an associated analysis that urban uses and development can be permitted in limited scale within the Greenlands Area.

Schedule B to the Official Plan Urban Structure	This Schedule provides a broad land use classification within the Town.	Based on this Schedule, the subject property is primarily located within the Town's Greenlands. Given that the property is also within a Secondary Plan Area, it has been determined through this natural heritage analysis that limited urban uses may be permitted in the Greenlands designation.
Schedule C Land Use	The subject lands are within the Natural Heritage designation according to this land use Schedule.	It has been determined based on field evaluations and an associated analysis that urban uses and development can be permitted in limited scale on the subject lands within the Natural Heritage designation through an Official Plan Amendment process.
Schedule F Infrastructure	The subject property is located within the Urban Service Area according to this Schedule.	This Schedule allows in principle that an appropriate part of the subject lands from a natural heritage perspective can be developed and serviced with limited urban uses.
4.5.3 b) Natural Heritage Designation Intent	Subsection iv. identifies that any development proposed within or adjacent to the Natural Heritage designation must be supported by an Environmental Impact Study (EIS) and Species at Risk (SAR) evaluation.	The preparation of this Environmental Impact Study helps fulfill this policy requirement related to an evaluation of development within the Natural Heritage designation. The EIS also addresses the provisions of the *Endangered Species Act* and any SAR.
4.5.3 c) Elements	This section illustrates the components of the Natural Heritage designation.	Based on field evaluations and an analysis of existing information, it has been determined that the subject lands contain Significant Woodland and Significant Wildlife Habitat.
4.5.3.3 Acquisition	This policy section provides a framework for acquiring or securing natural heritage features within the Town.	Through the planning and development process, it is the intent that the natural heritage lands that are suitable for their long-term protection on the subject property can be dedicated and transferred to the Town for passive recreational uses.
4.5.3.4 e) Significant Boundary Adjustments	This subsection identifies the process and requirements to make any significant change to the boundary of the Natural Heritage designation.	The preparation of this Environmental Impact Study through the Official Plan Amendment process satisfies this policy as it relates to significant changes to the Natural Heritage land use designation.
4.5.3.6 EIS	This Section provides a framework for the creation of EIS.	This EIS has been prepared in the context of this policy framework.

8.1 Endangered Species Act

Based on field investigations, habitat present and a desktop review, we conclude that habitat for threatened and/or endangered species has not been identified within the developable area and no contravention of sections 9 and 10 of the *Endangered Species Act* is anticipated.

8.2 Migratory Birds Convention Act

Tree and shrub species found within the subject site can support nesting migratory birds as listed under the *Migratory Birds Convention Act*. Provided timing restrictions of April 1 – August 31st for any clearing of trees and/or shrubs is implemented, no contravention of the *Migratory Birds Convention Act* is anticipated.

9 CONCLUSIONS

Roots Environmental Inc. has been retained by Pine Valley Estates Ltd. to complete an Environmental Impact Study in support of applications for residential development on the property known at 9332 County Road 93, Town of Midland.

Two natural heritage features: Significant Woodland and Significant Wildlife Habitat, were identified on the property and adjacent lands to the proposed development.

Provided development occurs as shown in the defined envelope and mitigation measures in this report are implemented, we anticipate no negative impacts to the identified natural heritage features.

Respectively submitted by Roots Environmental Inc.:

Kyle Fleming, BSc. (Wildlife)
Senior Ecologist

REFERENCES

Government of Ontario. 2024. Provincial Planning Statement. Queen's Printer of Ontario.

Lee, H.T., W.D. Bakowsky, J. Riley, J. Bowles, M. Puddister, P.Uhlig and S. McMurray. 1998. Ecological Land Classification for Southern Ontario: First Approximation and its Application. Ontario Ministry of Natural Resources, Southcentral Science Section, Science Development and Transfer Branch. SCSS Field Guide FG-02.

Natural Heritage Information Centre (NHIC) Database. 2021. Provincial Status of Plants, Wildlife and Vegetation Communities Database. Ministry of Natural Resources and Forestry, Peterborough.

Ontario Ministry of Natural Resources and Forestry. January 2015. Significant Wildlife Habitat Criteria Schedules for Ecoregion 6E.

Ontario Ministry of Natural Resources and Forestry. March 2010. Natural Heritage Reference Manual for Natural Heritage Policies of the Provincial Policy Statement, 2005.

APPENDIX A

Desktop Review

NHIC Data

To work further with this data select the content and copy it into your own word or excel documents.

OGF ID	Element Type	Common Name	Scientific Name	SRank	SARO Status	COSEWIC Status	ATLAS NAD83 IDENT	COMMENTS
988578	SPECIES	Midland Painted Turtle	Chrysemys picta marginata	S4		SC	17NK8454	
988578	SPECIES	Red-headed Woodpecker	Melanerpes erythrocephalus	S3	END	END	17NK8454	
988578	SPECIES	Wood Thrush	Hylocichla mustelina	S4B	SC	THR	17NK8454	
988578	SPECIES	Eastern Wood-pewee	Contopus virens	S4B	SC	SC	17NK8454	
988578	SPECIES	Massasauga (Great Lakes / St. Lawrence population)	Sistrurus catenatus pop. 1	S3	THR	THR	17NK8454	
988578	WILDLIFE CONCENTRATION AREA	Colonial Waterbird Nesting Area	Colonial Waterbird Nesting Area				17NK8454	
988588	SPECIES	Red-headed Woodpecker	Melanerpes erythrocephalus	S3	END	END	17NK8554	
988588	SPECIES	Massasauga (Great Lakes / St. Lawrence population)	Sistrurus catenatus pop. 1	S3	THR	THR	17NK8554	
988588	WILDLIFE CONCENTRATION AREA	Colonial Waterbird Nesting Area	Colonial Waterbird Nesting Area				17NK8554	

NHIC Data

To work further with this data select the content and copy it into your own word or excel documents.

OGF ID	Element Type	Common Name	Scientific Name	SRank	SARO Status	COSEWIC Status	ATLAS NAD83 IDENT	COMMENTS
988587	SPECIES	Red-headed Woodpecker	Melanerpes erythrocephalus	S3	END	END	17NK8553	
988587	SPECIES	Massasauga (Great Lakes / St. Lawrence population)	Sistrurus catenatus pop. 1	S3	THR	THR	17NK8553	
988587	WILDLIFE CONCENTRATION AREA	Colonial Waterbird Nesting Area	Colonial Waterbird Nesting Area				17NK8553	

Species list for square 17NK85 (number of entries returned: 117)

Region	Square	Species	Breeding Evidence				Point Counts			
			Max BE	Categ	#Sq	Atlasser Name	#PC	%PC	Abun	#Sq
13	17NK85	Canada Goose	FY	CONF	1	3 atlassers	1	3.13	0.0938	1
13	17NK85	Trumpeter Swan	FY	CONF	1	Bob Bowles				
13	17NK85	Wood Duck	FY	CONF	1	Bob Bowles				
13	17NK85	Mallard	FY	CONF	1	Bob Bowles				
13	17NK85	Blue-winged Teal	FY	CONF	1	Dorothy Harper				
13	17NK85	Green-winged Teal	T	PROB	1	Dorothy Harper				
13	17NK85	Hooded Merganser	P	PROB	1	Richard G Miller				
13	17NK85	Wild Turkey	D	PROB	1	Richard G Miller				
13	17NK85	Common Loon	H	POSS	1	Richard G Miller				
13	17NK85	Pied-billed Grebe	FY	CONF	1	Bob Bowles				
13	17NK85	Double-crested Cormorant	H	POSS	1	Bob Bowles	2	6.25	0.0938	1
13	17NK85	American Bittern	T	PROB	1	Dorothy Harper				
13	17NK85	Least Bittern	NY	CONF	1					
13	17NK85	Great Blue Heron	NY	CONF	1	Dorothy Harper				
13	17NK85	Green Heron	FY	CONF	1	Bob Bowles				
13	17NK85	Black-crowned Night-Heron	H	POSS	1	Dorothy Harper				
13	17NK85	Turkey Vulture	T	PROB	1	Dorothy Harper				
13	17NK85	Osprey	H	POSS	1	Bob Bowles				
13	17NK85	Northern Harrier	H	POSS	1	Richard G Miller				
13	17NK85	Red-shouldered Hawk	FY	CONF	1					
13	17NK85	Broad-winged Hawk	P	PROB	1	Dorothy Harper				
13	17NK85	Red-tailed Hawk	H	POSS	1	Richard G Miller				
13	17NK85	American Kestrel	H	POSS	1	Richard G Miller				
13	17NK85	Merlin	H	POSS	1	2 atlassers				
13	17NK85	Virginia Rail	FY	CONF	1	Bob Bowles				
13	17NK85	Sora	T	PROB	1	Dorothy Harper				
13	17NK85	Common Gallinule	FY	CONF	1	2 atlassers				
13	17NK85	American Coot	FY	CONF	1	Bob Bowles				
13	17NK85	Sandhill Crane	T	PROB	1	Dorothy Harper				
13	17NK85	Killdeer	A	PROB	1					
13	17NK85	Rock Pigeon	P	PROB	1	Richard G Miller	1	3.13	0.0938	1
13	17NK85	Spotted Sandpiper	P	PROB	1	Richard G Miller				
13	17NK85	Common Snipe	S	POSS	1					
13	17NK85	American Woodcock	S	POSS	1	Richard G Miller				
13	17NK85	Black Tern	NY	CONF	1	Bob Bowles				
13	17NK85	Mourning Dove	T	PROB	1	Richard G Miller	15	46.88	0.875	1
13	17NK85	Eastern Screech-Owl	H	POSS	1	Dorothy Harper				
13	17NK85	Great Horned Owl	S	POSS	1					
13	17NK85	Barred Owl	T	PROB	1					
13	17NK85	Whip-poor-will	H	POSS	1	Dorothy Harper				
13	17NK85	Chimney Swift	T	PROB	1	Richard G Miller				
13	17NK85	Ruby-throated Hummingbird	FY	CONF	1	Ed Poropat	1	3.13	0.0313	1
13	17NK85	Belted Kingfisher	T	PROB	1	Dorothy Harper				
13	17NK85	Yellow-bellied Sapsucker	FY	CONF	1	Richard G Miller	1	3.13	0.0625	1
13	17NK85	Downy Woodpecker	T	PROB	1	Dorothy Harper				
13	17NK85	Hairy Woodpecker	A	PROB	1					
13	17NK85	Northern Flicker	T	PROB	1	Dorothy Harper	5	15.63	0.1563	1
13	17NK85	Pileated Woodpecker	H	POSS	1					
13	17NK85	Eastern Wood-Pewee	FY	CONF	1	Richard G Miller	8	25.0	0.3438	1
13	17NK85	Alder Flycatcher	S	POSS	1	2 atlassers	1	3.13	0.0313	1
13	17NK85	Willow Flycatcher	S	POSS	1	Dorothy Harper				
13	17NK85	Least Flycatcher	T	PROB	1	Richard G Miller	3	9.38	0.125	1
13	17NK85	Eastern Phoebe	NE	CONF	1	Bob Bowles	2	6.25	0.0625	1
13	17NK85	Great Crested Flycatcher	T	PROB	1	Richard G Miller	2	6.25	0.0938	1
13	17NK85	Eastern Kingbird	FY	CONF	1	Richard G Miller	3	9.38	0.125	1
13	17NK85	Blue-headed Vireo	S	POSS	1	Richard G Miller	1	3.13	0.0313	1
13	17NK85	Warbling Vireo	T	PROB	1	Richard G Miller	2	6.25	0.0625	1
13	17NK85	Red-eyed Vireo	T	PROB	1	Richard G Miller	18	56.25	0.7188	1
13	17NK85	Blue Jay	A	PROB	1	Richard G Miller	9	28.13	0.4063	1

13	17NK85	American Crow	CF	CONF	1	Richard G Miller	27	84.38	1.8438	1
13	17NK85	Common Raven	S	POSS	1	Richard G Miller				
13	17NK85	Purple Martin	H	POSS	1	Dorothy Harper				
13	17NK85	Tree Swallow	NE	CONF	1	Bob Bowles	2	6.25	0.0938	1
13	17NK85	Bank Swallow	AE	CONF	1	Richard G Miller	1	3.13	0.0625	1
13	17NK85	Barn Swallow	NE	CONF	1	Bob Bowles	2	6.25	0.0938	1
13	17NK85	Black-capped Chickadee	FY	CONF	1	Richard G Miller	11	34.38	0.625	1
13	17NK85	Red-breasted Nuthatch	S	POSS	1	Richard G Miller	2	6.25	0.0625	1
13	17NK85	White-breasted Nuthatch	FY	CONF	1	Richard G Miller	2	6.25	0.0625	1
13	17NK85	Brown Creeper	FY	CONF	1	Richard G Miller				
13	17NK85	House Wren	AE	CONF	1	Richard G Miller	10	31.25	0.375	1
13	17NK85	Winter Wren	S	POSS	1	Richard G Miller	1	3.13	0.0313	1
13	17NK85	Marsh Wren	NU	CONF	1	Bob Bowles				
13	17NK85	Eastern Bluebird	FY	CONF	1	Richard G Miller				
13	17NK85	Veery	S	POSS	1	Richard G Miller	2	6.25	0.0625	1
13	17NK85	Wood Thrush	D	PROB	1	Richard G Miller	5	15.63	0.1875	1
13	17NK85	American Robin	NY	CONF	1	Bob Bowles	23	71.88	1.125	1
13	17NK85	Gray Catbird	A	PROB	1	Richard G Miller	1	3.13	0.0625	1
13	17NK85	Brown Thrasher	FY	CONF	1	Richard G Miller	1	3.13	0.0625	1
13	17NK85	European Starling	CF	CONF	1	Richard G Miller	13	40.63	1.9063	1
13	17NK85	Cedar Waxwing	FY	CONF	1	Ed Poropat	9	28.13	0.5	1
13	17NK85	Nashville Warbler	S	POSS	1	Richard G Miller				
13	17NK85	Yellow Warbler	DD	CONF	1	Dorothy Harper	4	12.5	0.1875	1
13	17NK85	Chestnut-sided Warbler	T	PROB	1	Richard G Miller	3	9.38	0.125	1
13	17NK85	Magnolia Warbler	FY	CONF	1	Richard G Miller				
13	17NK85	Black-throated Blue Warbler	S	POSS	1	Richard G Miller				
13	17NK85	Yellow-rumped Warbler	FY	CONF	1	Richard G Miller	2	6.25	0.0625	1
13	17NK85	Black-throated Green Warbler	T	PROB	1	Richard G Miller	2	6.25	0.0625	1
13	17NK85	Blackburnian Warbler	T	PROB	1		1	3.13	0.0625	1
13	17NK85	Pine Warbler	T	PROB	1	Richard G Miller	6	18.75	0.25	1
13	17NK85	Black-and-white Warbler	P	PROB	1	Richard G Miller	2	6.25	0.0625	1
13	17NK85	American Redstart	CF	CONF	1	Ed Poropat	3	9.38	0.0938	1
13	17NK85	Ovenbird	T	PROB	1	Richard G Miller	9	28.13	0.3125	1
13	17NK85	Northern Waterthrush	T	PROB	1		1	3.13	0.0313	1
13	17NK85	Mourning Warbler	T	PROB	1	Richard G Miller	1	3.13	0.0313	1
13	17NK85	Common Yellowthroat	FY	CONF	1	Richard G Miller	6	18.75	0.2188	1
13	17NK85	Canada Warbler	S	POSS	1	Richard G Miller				
13	17NK85	Eastern Towhee	FY	CONF	1	Richard G Miller				
13	17NK85	Chipping Sparrow	FY	CONF	1	Richard G Miller	12	37.5	0.5	1
13	17NK85	Field Sparrow	T	PROB	1	Richard G Miller	1	3.13	0.0313	1
13	17NK85	Savannah Sparrow	FY	CONF	1	Richard G Miller	4	12.5	0.1875	1
13	17NK85	Song Sparrow	A	PROB	1	Richard G Miller	13	40.63	0.6563	1
13	17NK85	Swamp Sparrow	FY	CONF	1	Ed Poropat				
13	17NK85	White-throated Sparrow	S	POSS	1	Richard G Miller				
13	17NK85	Scarlet Tanager	S	POSS	1					
13	17NK85	Northern Cardinal	FY	CONF	1	Richard G Miller				
13	17NK85	Rose-breasted Grosbeak	FY	CONF	1	Richard G Miller	4	12.5	0.125	1
13	17NK85	Indigo Bunting	CF	CONF	1	Richard G Miller	9	28.13	0.2813	1
13	17NK85	Bobolink	T	PROB	1	Richard G Miller	2	6.25	0.1875	1
13	17NK85	Red-winged Blackbird	CF	CONF	1	Richard G Miller	8	25.0	1.0313	1
13	17NK85	Eastern Meadowlark	T	PROB	1	Richard G Miller	5	15.63	0.3125	1
13	17NK85	Common Grackle	CF	CONF	1	Richard G Miller	12	37.5	0.8125	1
13	17NK85	Brown-headed Cowbird	T	PROB	1	Richard G Miller	4	12.5	0.125	1
13	17NK85	Baltimore Oriole	T	PROB	1	Richard G Miller	2	6.25	0.0625	1
13	17NK85	Purple Finch	FY	CONF	1	Richard G Miller	1	3.13	0.0313	1
13	17NK85	House Finch	CF	CONF	1	Richard G Miller	1	3.13	0.0625	1
13	17NK85	American Goldfinch	FY	CONF	1	Richard G Miller	24	75.0	1.8125	1
13	17NK85	House Sparrow	T	PROB	1	Richard G Miller	1	3.13	0.0938	1

Species list in taxonomic order for square 17NK85

All species

Number of rows of data displayed below: 21.

Species #	Common Name	# of Records	Earliest Yr	Latest Yr
1	Blanding's Turtle	3	1984	2016
2	Eastern Musk Turtle	2	1973	1983
3	Midland Painted Turtle	13	1971	2019
4	Northern Map Turtle	5	1977	2018
6	Snapping Turtle	12	1978	2019
10	Dekay's Brownsnake	1	2011	2011
12	Eastern Gartersnake	5	1971	2018
13	Eastern Hog-nosed Snake	2	2013	2013
14	Eastern Massasauga	2	1967	1969
15	Eastern Milksnake	8	1937	2019
20	Northern Watersnake	1	2013	2013
24	Smooth Greensnake	1	1982	1982
28	Gray Treefrog	23	1989	2013
29	Green Frog	23	1992	2004
31	Northern Leopard Frog	23	1989	2004
32	Pickerel Frog	1	1999	1999
33	Spring Peeper	24	1988	2005
35	Wood Frog	8	1979	2003
36	American Toad	11	1971	2008
44	Eastern Red-backed Salamander	4	1971	2018
51	Red-spotted Newt	1	1986	1986

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APPENDIX B

Species List

Vascular Plant List (2022)
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SCIENTIFIC NAME	COMMON NAME	S RANK	SARO	SARA	G RANK
Abies balsamea	Balsam Fir	S5			G5
Acer negundo	Manitoba Maple	S5			G5
Acer pensylvanicum	Striped Maple	S4			G5
Acer rubrum	Red Maple	S5			G5
Acer saccharum	Sugar Maple	S5			G5
Actaea pachypoda	White Baneberry	S5			G5
Agrostis gigantea	Redtop	SNA			GNR
Alliaria petiolata	Garlic Mustard	SNA			GNR
Allium tricoccum var. tricoccum	Wild Leek	S4			G5
Ambrosia trifida	Great Ragweed	S5			G5
Anemonastrum canadense	Canada Anemone	S5			G5
Apocynum androsaemifolium	Spreading Dogbane	S5			G5
Aquilegia canadensis	Red Columbine	S5			G5
Aralia nudicaulis	Wild Sarsaparilla	S5			G5
Arctium lappa	Great Burdock	SNA			GNR
Arisaema triphyllum	Jack-in-the-pulpit	S5			G5
Asarum canadense	Canada Wild-ginger	S5			G5
Asclepias syriaca	Common Milkweed	S5			G5
Betula alleghaniensis	Yellow birch	S5			G5
Betula papyrifera	Paper Birch	S5			G5
Bromus arvensis	Field Brome	SNA			GNR
Carex arctata	Drooping Woodland Sedge	S5			G5
Carex communis	Fibrous-root Sedge	S5			G5
Carex plantaginea	Plantain-leaved Sedge	S5			G5
Carex rosea	Rosy Sedge	S5			G5
Cerastium arvense	Field Chickweed	S4			G5
Circaea canadensis	Broad-leaved Enchanter's Nightshade	S5			G5
Claytonia caroliniana	Carolina Spring Beauty	S5			G5
Clematis occidentalis	Purple Clematis	S4			G5
Clintonia borealis	Yellow Clintonia	S5			G5
Convolvulus arvensis	Field Bindweed	SNA			GNR
Cornus alternifolia	Alternate-leaved Dogwood	S5			G5
Crataegus spp.	Hawthorn Species	S5			G5
Dactylis glomerata	Orchard Grass	SNA			GNR
Daucus carota	Wild Carrot	SNA			GNR
Desmodium canadense	Canada Tick-trefoil	S4			G5
Diervilla lonicera	Northern Bush-honeysuckle	S5			G5
Dryopteris carthusiana	Spinulose Wood Fern	S5			G5
Epifagus virginiana	Beechdrops	S5			G5
Epipactis helleborine	Broad-leaved Helleborine	SNA			GNR
Equisetum arvense	Field Horsetail	S5			G5
Erigeron philadelphicus	Philadelphia Fleabane	S5			G5
Erythronium americanum	Yellow Trout-lily	S5			G5

SCIENTIFIC NAME	COMMON NAME	S RANK	SARO	SARA	G RANK
Eurybia macrophylla	Large-leaved Aster	S5			G5
Euthamia graminifolia	Grass-leaved Goldenrod	S5			G5
Fagus grandifolia	American Beech	S4			G5
Fragaria virginiana	Field Strawberry	S5			G5
Fraxinus americana	White Ash	S4			G5
Fraxinus pennsylvanica	Red Ash	S4			G5
Geranium robertianum	Herb-Robert	S5			G5
Geum aleppicum	Yellow Avens	S5			G5
Gymnocarpium dryopteris	Common Oak Fern	S5			G5
Hepatica americana	Round-lobed Hepatica	S5			G5T5
Hylodesmum glutinosum	Large Tick-trefoil	S4			G5
Juniperus communis	Common Juniper	S5			G5
Juniperus virginiana	Eastern Red Cedar	S5			G5
Lathyrus odoratus	Sweet Pea	SNA			GNR
Linaria vulgaris	Butter-and-eggs	SNA			GNR
Lonicera tatarica	Tatarian Honeysuckle	SNA			GNR
Lotus corniculatus	Garden Bird's-foot Trefoil	SNA			GNR
Lycopodium clavatum	Running Clubmoss	S5			G5
Lysimachia borealis	Northern Starflower	S5			G5
Maianthemum canadense	Wild Lily-of-the-valley	S5			G5
Maianthemum stellatum	Star-flowered False Solomon's Seal	S5			G5
Malus pumila	Apple	SNA			GNR
Matricaria discoidea	Pineappleweed	SNA			G5
Melilotus albus	White Sweet-clover	SNA			G5
Milium effusum	Wood Millet	S4S5			G5
Monarda fistulosa	Wild Bergamot	S5			G5
Monotropa uniflora	Indian-pipe	S5			G5
Nabalus albus	White Rattlesnakeroot	S5			G5
Ostrya virginiana	Eastern Hop-hornbeam	S5			G5
Parthenocissus quinquefolia	Virginia Creeper	S4?			G5
Petasites frigidus var. palmatus	Palmate Coltsfoot	S5			G5T5
Phleum pratense	Common Timothy	SNA			GNR
Picea glauca	White Spruce	S5			G5
Pilosella aurantiaca	Yellow Hawkweed	SNA			GNR
Pinus resinosa	Red Pine	S5			G5
Pinus strobus	Eastern White Pine	S5			G5
Pinus sylvestris	Scots Pine	SNA			GNR
Plantago major	Common Plantain	SNA			G5
Poa pratensis	Kentucky Bluegrass	S5			G5
Podophyllum peltatum	May-apple	S5			G5
Populus balsamifera	Balsam Poplar	S5			G5
Populus grandidentata	Large-toothed Aspen	S5			G5
Populus tremuloides	Trembling Aspen	S5			G5
Potentilla anserina	Silverweed	S5			G5
Prunella vulgaris	Common Self-heal	S5			G5
Prunus serotina	Black Cherry	S5			G5

SCIENTIFIC NAME	COMMON NAME	S RANK	SARO	SARA	G RANK
Prunus virginiana	Chokecherry	S5			G5
Pteridium aquilinum	Bracken Fern	S5			G5
Quercus rubra	Northern Red Oak	S5			G5
Ranunculus acris	Common Buttercup	SNA			G5
Rhamnus cathartica	Common Buckthorn	SNA			GNR
Rhus typhina	Staghorn Sumac	S5			G5
Ribes cynosbati	Eastern Prickly Gooseberry	S5			G5
Rubus idaeus	Red Raspberry	S5			G5
Rubus odoratus	Purple-flowering Raspberry	S5			G5
Rudbeckia hirta	Black-eyed Susan	S5			G5
Sambucus racemosa	Red Elderberry	S5			G5
Solidago canadensis	Canada Goldenrod	S5			G5
Streptopus lanceolatus	Rose Twisted-stalk	S5			G5
Symphyotrichum lateriflorum	Calico Aster	S5			G5
Symphyotrichum puniceum	Purple-stemmed Aster	S5			G5
Syringa vulgaris	Common Lilac	SNA			GNR
Taraxacum officinale	Common Dandelion	SNA			G5
Thalictrum dioicum	Early Meadow-rue	S5			G5
Thuja occidentalis	Eastern White Cedar	S5			G5
Tilia americana	Basswood	S5			G5
Toxicodendron radicans	Poison Ivy	S5			G5
Tragopogon dubius	Yellow Goatsbeard	SNA			GNR
Trifolium repens	White Clover	SNA			GNR
Trillium erectum	Red Trillium	S5			G5
Trillium grandiflorum	White Trillium	S5			G5
Vaccinium angustifolium	Low-Sweet Blueberry	S5			G5
Verbascum thapsus	Common Mullein	SNA			GNR
Viburnum acerifolium	Maple-leaved Viburnum	S5			G5
Vicia americana	American Vetch	S5			G5
Viola canadensis	Canada Violet	S5			G5
Vitis riparia	Riverbank Grape	S5			G5

Breeding Bird List (2022)
9332 CR 93, Midland

SCIENTIFIC NAME	COMMON NAME	S RANK	SARO	SARA	G RANK
Bonasa umbellus	Ruffed Grouse	S5			G5
Cardinalis cardinalis	Northern Cardinal	S5			G5
Catharus fuscescens	Veery	S5			G5
Certhia americana	Brown Creeper	S5			G5
Colaptes auratus	Northern Flicker	S4B			G5
Contopus virens	**Eastern Wood-pewee**	**S4B**	**SC**	**SC**	**G5**
Corvus brachyrhynchos	American Crow	S5B			G5
Cyanocitta cristata	Blue Jay	S5B			G5
Dryobates pubescens	Downy Woodpecker	S5			G5
Dryobates villosus	Hairy Woodpecker	S5			G5
Dryocopus pileatus	Pileated Woodpecker	S5			G5
Dumetella carolinensis	Gray Catbird	S4B			G5
Hylocichla mustelina	**Wood Thrush**	**S4B**	**SC**	**THR**	**G4**
Leiothlypis celata	Orange-crowned Warbler	S5			G5
Melanerpes carolinus	Red-bellied Woodpecker	S5			G5
Meleagris gallopavo	Wild Turkey	S5			G5
Melospiza melodia	Song Sparrow	S5B			G5
Mniotilta varia	Black-and-White Warbler	S5B			G5
Myiarchus crinitus	Great Crested Flycatcher	S5B			G5
Passer domesticus	House Sparrow	SNA			G5
Passerina cyanea	Indigo Bunting	S5B			G5
Pheucticus ludovicianus	Rose-breasted Grosbeak	S5B			G5
Piranga olivacea	Scarlet Tanager	S5B			G5
Poecile atricapillus	Black-capped Chickadee	S5B			G5
Quiscalus quiscula	Common Grackle	S5			G5
Sayornis phoebe	Eastern Phoebe	S5B			G5
Seiurus aurocapilla	Ovenbird	S5B			G5
Setophaga fusca	Blackburnian Warbler	S5B			G5
Setophaga pensylvanica	Chestnut-sided Warbler	S5B			G5
Setophaga petechia	Yellow Warbler	S5B			G5
Setophaga virens	Black-throated Green Warbler	S5B			G5
Sitta canadensis	Red-breasted Nuthatch	S5			G5
Spinus tristis	American Goldfinch	S5			G5
Spizella passerina	Chipping Sparrow	S5B,S3N			G5
Sturnus vulgaris	European Starling	SNA			G5
Turdus migratorius	American Robin	S5B			G5
Tyrannus tyrannus	Eastern Kingbird	S4B			G5
Vireo olivaceus	Red-eyed Vireo	S5B			G5
Zenaida macroura	Mourning Dove	S5			G5
Zonotrichia albicollis	White-throated Sparrow	S5			G5

APPENDIX C

Significant Wildlife Habitat Assessment

Seasonal Concentration of Areas of Animals				
Type	***ELC Codes***	***Habitat Criteria***	***Defining Criteria***	***Presence/Absence of Candidate SWH?***
Waterfowl Stopover and Staging Areas (Terrestrial)	CUM1 CUT1 *With evidence of annual flooding from melt water or run-off	Fields with sheet water during Spring (mid-March to May). Agricultural fields with waste grains are commonly used by waterfowl, these are not considered SWH unless they have spring sheet water available.	Any mixed species aggregations of 100 or more individuals required. The flooded field ecosite habitat plus a 100-300m radius area, dependant on local site conditions and adjacent land use is the significant wildlife habitat.	Not present – no flooding and habitat is not suitable.
Waterfowl Stopover and Staging Areas (Aquatic)	MAS1 MAS2 MAS3 SAS1 SAM1 SAF1 SWD1 SWD2 SWD3 SWD4 SWD5 SWD6 SWD7	Ponds, marshes, lakes, bays, coastal inlets, and watercourses used during migration. Sewage treatment ponds and storm water ponds do not qualify as a SWH, however a reservoir managed as a large wetland or pond/lake does qualify. These habitats have an abundant food supply (mostly aquatic invertebrates and vegetation in shallow water)	Aggregations of 100 or more of listed species for 7 days, results in > 700 waterfowl use days. Areas with annual staging of ruddy ducks, canvasbacks, and redheads are SWH. The combined area of the ELC ecosites and a 100m radius area is the SWH.	Not present – Ecosites not present in the development area or adjacent lands.
Shorebird Migratory Stopover Area	BBO1 BBO2 BBS1 BBS2 BBT1 BBT2 SDO1 SDS2 SDT1 MAM1 MAM2 MAM3 MAM4 MAM5	Shorelines of lakes, rivers and wetlands, including beach areas, bars and seasonally flooded, muddy and un-vegetated shoreline habitats. Great Lakes coastal shorelines, including groynes and other forms of armour rock lakeshores, are extremely important for migratory shorebirds in May to mid-June and early July to October. Sewage treatment ponds and storm water ponds do not qualify as a SWH.	Presence of 3 or more of listed species and > 1000 shorebird use days during spring or fall migration period. Any site with >100 Whimbrel used for 3 years, or more is significant. The area of significant shorebird habitat includes the mapped ELC shoreline ecosites plus a 100m radius area.	Not present – Ecosites not present in the development area or adjacent lands.
Raptor Wintering Area	Hawks/Owls: Combination of ELC Community Series; need to have present one Community Series from each land class: Forest: FOD FOM FOC Upland: CUM CUT CUS CUW Bald Eagle: Forest community Series: FOD, FOM, FOC, SWD, SWM or SWC on shoreline areas adjacent to large rivers or adjacent to lakes with open water (hunting area).	The habitat provides a combination of fields and woodlands that provide roosting, foraging and resting habitats for wintering raptors. Raptor wintering sites (hawk/owl) need to be > 20 ha with a combination of forest and upland. Least disturbed sites, idle/fallow or lightly grazed field/meadow (>15ha) with adjacent woodlands. Field area of the habitat is to be wind swept with limited snow depth or accumulation. Eagle sites have open water, large trees and snags available for roosting.	One or more Short-eared Owls or one or more Bald Eagles or At least 10 individuals and two of the listed hawk/owl species. To be significant a site must be used regularly (3 in 5 years) for a minimum of 20 days by the above number of birds. The habitat area for an Eagle winter site is the shoreline forest ecosites directly adjacent to the prime hunting area.	Not present – Trees within the development area are not large enough to support raptor nesting. No raptor nests observed during site investigations in 2022.
Bat Hibernacula	CCR1 CCR2 CCA1 CCA2 Buildings are not considered to be SWH.	Hibernacula may be found in caves, mine shafts, underground foundations and Karsts. Active mine sites should not be considered as SWH	All sites with confirmed hibernating bats are SWH. The habitat area includes a 200m radius around the entrance of the hibernaculum for most development types.	Not present – no hibernacula are found on site.
Bat Maternity Colonies	FOD FOM SWD SWM	Maternity colonies can be found in tree cavities, vegetation and often in buildings (buildings are not considered to be SWH).	Maternity Colonies with confirmed use by; >10 Big Brown Bats >5 Adult Female Silver- haired Bats	***Potential (Adjacent lands)*** – Treed habitats associated with community FOD5-10 to the northeast part of the

		Maternity colonies located in Mature deciduous or mixed forest stands with >10/ha large diameter (>25cm dbh) wildlife trees. Female Bats prefer wildlife tree (snags) in early stages of decay, class 1-3. Silver-haired Bats prefer older mixed or deciduous forest and form maternity colonies in tree cavities and small hollows. Older forest areas with at least 21 snags/ha are preferred.	The area of the habitat includes the entire woodland or a forest stand ELC Ecosite or an Eco element containing the maternity colonies.	development area may support bat maternity colonies.
Turtle Wintering Areas	Snapping and Midland Painted Turtles; ELC Community Classes; SW, MA, OA and SA, ELC Community Series; FEO and BOO. Northern Map Turtle: Open Water areas such as deeper rivers or streams and lakes with current can also be used as over-wintering habitat.	For most turtles, wintering areas are in the same general area as their core habitat. Water has to be deep enough not to freeze and have soft mud substrates. Over-wintering sites are permanent water bodies, large wetlands, and bogs or fens with adequate Dissolved Oxygen. Man-made ponds such as sewage lagoons or storm water ponds should not be considered SWH.	Presence of 5 over-wintering Midland Painted Turtles is significant. One or more Northern Map Turtle or Snapping Turtle over- wintering within a wetland is significant. The mapped ELC ecosite area with the over wintering turtles is the SWH. If the hibernation site is within a stream or river, the deep-water pool where the turtles are over wintering is the SWH.	Not present – No suitable ELC units found within the subject property.
Reptile Hibernaculum	For all snakes, habitat may be found in any ecosite other than very wet ones. For Five-lined Skink, ELC Community Series of FOD and FOM and Ecosites: FOC1 FOC3	For snakes, hibernation takes place in sites located below frost lines in burrows, rock crevices and other natural or naturalized locations. The existence of features that go below frost line; such as rock piles or slopes, old stone fences, and abandoned crumbling foundations assist in identifying candidate SWH. Wetlands can also be important over-wintering habitat in conifer or shrub swamps and swales, poor fens, or depressions in bedrock terrain with sparse trees or shrubs with sphagnum moss or sedge hummock ground cover. Five-lined skink prefer mixed forests with rock outcrop openings providing cover rock overlaying granite bedrock with fissures.	Presence of snake hibernacula used by a minimum of five individuals of a snake sp. or individuals of two or more snake spp. Congregations of a minimum of five individuals of a snake sp. or individuals of two or more snake spp. near potential hibernacula (e.g. foundation or rocky slope) on sunny warm days in Spring (Apr/May) and Fall (Sept/Oct) If there are Special Concern Species present, then site is SWH. The feature in which the hibernacula is located plus a 30 m radius area is the SWH.	Not present – No burrows, fissures, crevices or anthropogenic habitats (i.e., rock piles) were present. There are no records for five-lined skink in the immediate area and rock outcrops are not present.
Colonially - Nesting Bird Breeding Habitat (Bank and Cliff)	Eroding banks, sandy hills, borrow pits, steep slopes, and sand piles. Cliff faces, bridge abutments, silos, barns. Habitat found in the following ecosites: CUM1 CUT1 CUS BLO1 BLS1 BLT1 CLO1 CLS1 CLT1	Any site or areas with exposed soil banks, undisturbed or naturally eroding that is not a licensed/permitted aggregate area. Does not include man-made structures (bridges or buildings) or recently (2 years) disturbed soil areas, such as berms, embankments, soil or aggregate stockpiles. Does not include a licensed/permitted Mineral Aggregate Operation.	Presence of 1 or more nesting sites with 8 or more cliff swallow pairs and/or rough- winged swallow pairs during the breeding season. A colony identified as SWH will include a 50m radius habitat area from the peripheral nests.	Not present – suitable habitats (ELC units) not present on site.
Colonially - Nesting Bird Breeding Habitat (Tree/Shrubs)	SWM2 SWM3 SWM5 SWM6 SWD1 SWD2 SWD3 SWD4 SWD5 SWD6 SWD7 FET1	Nests in live or dead standing trees in wetlands, lakes, islands, and peninsulas. Shrubs and occasionally emergent vegetation may also be used. Most nests in trees are 11 to 15 m from ground, near the top of the tree.	Presence of 5 or more active nests of Great Blue Heron or other listed species. The habitat extends from the edge of the colony and a minimum 300m radius or extent of the Forest Ecosite containing the colony or any island <15.0ha with a colony is the SWH.	Not present – suitable ELC units not found within the subject property.

Colonially - Nesting Bird Breeding Habitat (Ground)	Any rocky island or peninsula (natural or artificial) within a lake or large river. Close proximity to watercourses in open fields or pastures with scattered trees or shrubs (Brewer's Blackbird) MAM1 – 6 MAS1 – 3 CUM CUT CUS	Nesting colonies of gulls and terns are on islands or peninsulas associated with open water or in marshy areas. Brewer's Blackbird colonies are found loosely on the ground in low bushes in close proximity to streams and irrigation ditches within farmlands.	Presence of > 25 active nests for Herring Gulls or Ring-billed Gulls, >5 active nests for Common Tern or >2 active nests for Caspian Tern. Presence of 5 or more pairs for Brewer's Blackbird. Any active nesting colony of one or more Little Gull, and Great Black-backed Gull is significant. The edge of the colony and a minimum 150m radius area of habitat, or the extent of the ELC ecosites containing the colony or any island <3.0ha with a colony is the SWH.	Not present – islands and peninsulas not present.
Migratory Butterfly Stopover Areas	Combination of ELC Community Series; need to have present one Community Series from each land class: Field: CUM CUT CUS Forest: FOC FOD FOM CUP	Minimum of 10 ha in size with a combination of field and forest habitat present and will be located within 5 km of Lake Ontario. Habitat is typically a combination of field and forest. The habitat should not be disturbed, fields/meadows with an abundance of preferred nectar plants and woodland edge providing shelter are requirements for this habitat.	The presence of Monarch Use Days (MUD) during fall migration (Aug/Oct). MUD of >5000 or >3000 with the presence of Painted Ladies or Red Admiral's is to be considered significant.	Not present – site not within 5km of Lake Ontario.
Landbird Migratory Stopover Areas	FOC FOM FOD SWC SWM SWD	Woodlots need to be >10 ha in size and within 5 km of Lake Ontario. If multiple woodlands are located along the shoreline those Woodlands <2km from Lake Ontario are more significant. Woodlots and forest fragments are important habitats to migrating birds, these features located along the shore and located within 5km of Lake Ontario are Candidate SWH cxlviii.	Use of the habitat by >200 birds/day and with >35 spp. with at least 10 bird spp. recorded on at least 5 different survey dates.	Not present - site not within 5 km of Lake Ontario.
Deer Yarding Areas	OMNRF to determine this habitat. FOM FOC SWM SWC CUP2 CUP3 FOD3 CUT	The yard is composed of two areas referred to as Stratum I and Stratum II. Stratum II covers the entire winter yard area and is usually a mixed or deciduous forest with plenty of browse available for food.	Deer Yards are mapped by MNR District offices.	Not present – MNR does not identify this site as part of a Deer Yard.
Deer Winter Congregation Areas	FOC FOM FOD SWC SWM SWD Conifer plantations much smaller than 50 ha may also be used.	Woodlots will typically be >100 ha in size. Woodlots <100ha may be considered as significant based on MNRF studies or assessment.	Deer winter congregation areas considered significant will be mapped by MNR.	Not present – MNR does not identify this site as part of a Deer Yard.
Rare Vegetation Communities				
Cliffs and Talus Slopes	TAO CLO TAS CLS TAT CLT	A Cliff is vertical to near vertical bedrock >3m in height. Most cliff and talus slopes occur along the Niagara Escarpment.	ELC Vegetation Type for Cliffs or Talus Slopes.	Not present – applicable ELC units are not present on site.
Sand Barren	SBO1 SBS1 SBT1	A sand barren area >0.5ha in size	ELC Vegetation Type for Sand Barrens. Site must not be dominated by exotic or introduced species (<50% vegetative cover are exotic sp.)	Not present – applicable ELC units are not present on site.
Alvar	ALO1 ALS1 ALT1 FOC1 FOC2 CUM2 CUS2 CUT2-1 CUW2	An Alvar site > 0.5 ha in size.	Field studies that identify four of the five Alvar Indicator Species at a Candidate Alvar site is Significant.	Not present – applicable ELC units are not present on site.

			Site must not be dominated by exotic or introduced species (<50% vegetative cover are exotic sp.).	
Old Growth Forest	FOD FOC FOM SWD SWC SWM	Woodland areas 30 ha or greater in size or with at least 10 ha interior habitat assuming 100 m buffer at edge of forest .	If dominant trees species of the are >140 years old, then the Ecosite or eco-element within an ecosite containing these trees is SWH. The forested area containing the old growth characteristics will have experienced no recognizable forestry activities.	Not present – woodlands on site are not > 140 years in age.
Savannah	TPS1 TPS2 TPW1 TPW2 CUS2	A Savannah is a tallgrass prairie habitat that has tree cover between 25 – 60%. No minimum size to site. Site must be restored or a natural site. Remnant sites such as railway right of ways are not considered to be SWH.	Confirm one or more of the Savannah indicator species. Area of the ELC Ecosite is the SWH. Site must not be dominated by exotic or introduced species (<50% vegetative cover are exotic sp.).	Not present – applicable ELC units are not present on site.
Tallgrass Prairie	TPO1 TPO2	An open Tallgrass Prairie habitat has < 25% tree cover. No minimum size to site. Site must be restored or a natural site. Remnant sites such as railway right of ways are not considered to be SWH.	Field studies confirm one or more of the Prairie indicator species. Area of the ELC Ecosite is the SWH. Site must not be dominated by exotic or introduced species (<50% vegetative cover are exotic sp.).	Not present – applicable ELC units are not present on site.
Other Rare Vegetation Communities	Provincially Rare S1, S2 and S3 vegetation communities.	The MNR/NHIC will have up to date listing for rare vegetation communities.	Area of the ELC Vegetation Type polygon is the SWH.	Not present – ELC units found on site are not provincially rare (S1-S3).
Specialized Habitat for Wildlife				
Waterfowl Nesting Area	All upland habitats located adjacent to these wetland ELC Ecosites are Candidate SWH: MAS1 MAS2 MAS3 SAS1 SAM1 SAF1 MAM1 MAM2 MAM3 MAM4 MAM5 MAM6 SWT1 SWT2 SWD1 SWD2 SWD3 SWD4	A waterfowl nesting area extends 120 m from a wetland (> 0.5 ha) or a wetland (>0.5ha) and any small wetlands (0.5ha) within 120m or a cluster of 3 or more small (<0.5 ha) wetlands within 120 m of each individual wetland where waterfowl nesting is known to occur. Upland areas should be at least 120 m wide so that predators such as racoons, skunks, and foxes have difficulty finding nests. Wood Ducks and Hooded Mergansers utilize large diameter trees (>40cm dbh) in woodlands for cavity nest sites.	Presence of 3 or more nesting pairs for listed species excluding Mallards, or; Presence of 10 or more nesting pairs for listed species including Mallards. Any active nesting site of an American Black Duck is considered significant.	Not present – applicable ELC units not found on site.
Bald Eagle and Osprey Nesting, Foraging and Perching Habitat	ELC Forest Community Series: FOD, FOM, FOC, SWD, SWM and SWC directly adjacent to riparian areas – rivers, lakes, ponds and wetlands.	Nests are associated with lakes, ponds, rivers or wetlands along forested shorelines, islands, or on structures over water. Nests located on man-made objects are not to be included as SWH (e.g. telephone poles and constructed nesting platforms).	For an Osprey, the active nest and a 300 m radius around the nest or the contiguous woodland stand is the SWH. For a Bald Eagle the active nest and a 400-800 m radius around the nest is the SWH. Area of the habitat from 400-800m. To be significant a site must be used annually. When found inactive, the site must be known to be inactive for > 3 years or suspected of not being used for >5 years before being considered not significant.	Not present – woodland communities on site are not adjacent to larger rivers, or lakes and wetlands. No detections were made for the Bald Eagle and Osprey.

Woodland Raptor Nesting Habitat	May be found in all forested ELC Ecosites.	All natural or conifer plantation woodland/forest stands >30ha with >10ha of interior habitat. Interior habitat determined with a 200m buffer.	Presence of 1 or more active nests from species list is considered significant. Red-shouldered Hawk and Northern Goshawk – A 400m radius around the nest or 28 ha area of habitat is the SWH. Barred Owl – A 200m radius around the nest is the SWH. Broad-winged Hawk and Coopers Hawk – A 100m radius around the nest is the SWH. Sharp-Shinned Hawk – A 50m radius around the nest is the SWH.	Not present – woodland communities on site do not contain older nesting trees. No raptor nests observed on site.
Turtle Nesting Areas	Exposed mineral soil (sand or gravel) areas adjacent (<100m) or within the following ELC Ecosites: MAS1 MAS2 MAS3 SAS1 SAM1 SAF1 BOO1 FEO1	Must provide sand and gravel that turtles are able to dig in and are in open, sunny areas. Nesting areas on the sides of municipal or provincial road embankments and shoulders are not SWH.	Presence of 5 or more nesting Midland Painted Turtles. One or more Northern Map Turtle or Snapping Turtle nesting is a SWH. The area or collection of sites within an area of exposed mineral soils where the turtle's nest, plus a radius of 30-100m around the nesting area is the SWH. Travel routes from wetland to nesting area are to be considered within the SWH as part of the 30-100m area of habitat.	Not present – applicable ELC Units are not present within adjacent areas to the site.
Seeps and Springs	Seeps/Springs are areas where ground water comes to the surface. Often, they are found within headwater areas within forested habitats. Any forested Ecosite within the headwater areas of a stream could have seeps/springs.	Any forested area (with <25% meadow/field/pasture) within the headwaters of a stream or river system.	Presence of a site with 2 or more seeps/springs should be considered SWH. The area of a ELC forest ecosite or an Eco element within ecosite containing the seeps/springs is the SWH.	Not present – no seeps/springs were observed on site.
Amphibian Breeding Habitat (Woodland)	FOC FOM FOD SWC SWM SWD	Presence of a wetland, pond or woodland pool (including vernal pools) >500m2 within or adjacent (within 120m) to a woodland (no minimum size). Woodlands with permanent ponds or those containing water in most years until mid-July are more likely to be used as breeding habitat.	Presence of breeding population of 1 or more of the listed newt/salamander species or 2 or more of the listed frog species with at least 20 individuals (adults or eggs masses) or 2 or more of the listed frog species with Call Level Codes of 3. The habitat is the wetland area plus a 230m radius of woodland area.	Absent – no vernal pools or swamp communities found within the subject property.
Amphibian Breeding Habitat (Wetlands)	Classes SW, MA, FE, BO, OA and SA.	Wetlands>500m2 (about 25m diameter). Bullfrogs require permanent water bodies with abundant emergent vegetation.	Presence of breeding population of 1 or more of the listed newt/salamander species or 2 or more of the listed frog/toad species with at least 20 individuals (adults or eggs masses) or 2 or more of the listed frog/toad species with Call Level Codes of 3; or; Wetland with confirmed breeding Bullfrogs are significant.	Not present – applicable ELC units are not present.

			The ELC ecosite wetland area and the shoreline are the SWH.	
Area-Sensitive Bird Breeding Habitat	FOC FOM FOD SWC SWM SWD	Habitats where interior forest breeding birds are breeding, typically large mature (>60 yrs old) forest stands or woodlots >30 ha. Interior forest habitat is at least 200 m from forest edge habitat.	Presence of nesting or breeding pairs of 3 or more of the listed wildlife species. Any site with breeding Cerulean Warblers or Canada Warblers is to be considered SWH.	Absent - woodland habitats in >200m from edges are not present.
Habitat for Species of Conservation Concern (not including Endangered or Threatened Species.)				
Marsh Breeding Bird Habitat	MAM1 MAM2 MAM3 MAM4 MAM5 MAM6 SAS1 SAM1 SAF1 FEO1 BOO1 For Green Heron: All SW, MA and CUM1 sites.	All wetland habitat is to be considered as long as there is shallow water with emergent aquatic vegetation present. For Green Heron, habitat is at the edge of water such as sluggish streams, ponds and marshes sheltered by shrubs and trees.	Presence of 5 or more nesting pairs of Sedge Wren or Marsh Wren or or 1 pair of Sandhill Cranes; or breeding by any combination of 5 or more of the listed species. Any wetland with breeding of 1 or more Black Terns, Trumpeter Swan, Green Heron or Yellow Rail is SWH. Area of the ELC ecosite is the SWH.	Not present – no applicable ELC units found on site.
Open Country Bird Breeding Habitat	CUM1 CUM2	Large grassland areas (includes natural and cultural fields and meadows) >30 ha. Grasslands not Class 1 or 2 agricultural lands, and not being actively used for farming (i.e. no row cropping or intensive hay or livestock pasturing in the last 5 years).	Presence of nesting or breeding of 2 or more of the listed species. A field with 1 or more breeding Short-eared Owls is to be considered SWH.	Not present – no applicable ELC units found on site.
Shrub/Early Successional Bird Breeding Habitat	CUT1 CUT2 CUS1 CUS2 CUW1 CUW2	Large field areas succeeding to shrub and thicket habitats >10ha in size. Shrub land or early successional fields, not class 1 or 2 agricultural lands, not being actively used for farming (i.e. no row-cropping, haying or live-stock pasturing in the last 5 years).	Presence of nesting or breeding of 1 of the indicator species and at least 2 of the common species. Habitat with breeding Yellow- breasted Chat or Golden-winged Warbler is to be considered as SWH. The area of the SWH is the contiguous ELC ecosite field/thicket area.	Not present – CUT1-1 community is not large enough (>10ha) to support this habitat.
Terrestrial Crayfish	MAM1 MAM2 MAM3 MAM4 MAM5 MAM6 MAS1 MAS2 MAS3 SWD SWT SWM CUM1 with inclusions of above meadow marsh or swamp ecosites can be used by terrestrial crayfish.	Wet meadow and edges of shallow marshes (no minimum size).	Presence of 1 or more individuals of species listed or their chimneys (burrows) in suitable meadow marsh, swamp or moist terrestrial sites. Area of ELC ecosite or an Eco element area of meadow marsh or swamp within the larger ecosite area is the SWH.	Not present – applicable ELC units not found within the subject property.
Special Concern and Rare Wildlife Species	All plant and animal element occurrences (EO) within a 1 or 10km grid.	When an element occurrence is identified within a 1 or 10 km grid for a Special Concern or provincially Rare species; linking candidate habitat on the site needs to be completed to ELC Ecosites.	The area of the habitat to the finest ELC scale that protects the habitat form and function is the SWH.	**Present** – woodland communities FOM5-2, FOD5-10 and FOD5-3 were found to provide habitat to two Special Concern species, the Eastern Wood-Pewee and Wood Thrush.
Animal Movement Corridors				
Amphibian Movement Corridors	Corridors may be found in all ecosites associated with water.	Movement corridors between breeding habitat and summer habitat.	Corridors should consist of native vegetation, with several layers of vegetation.	Absent – no Amphibian Breeding Habitat was identified within the subject property.

	Corridors will be determined based on identifying the significant breeding habitat.	Movement corridors must be determined when Amphibian breeding habitat is confirmed as SWH.	Corridors unbroken by roads, waterways or bodies, and undeveloped areas are most significant. Corridors should have at least 15m of vegetation on both sides of waterway or be up to 200m wide of woodland habitat and with gaps <20m.	
Deer Movement Corridors	Corridors may be found in all forested ecosites.	Movement corridor must be determined when Deer Wintering Habitat is confirmed as SWH.	Corridors that lead to a deer wintering habitat should be unbroken by roads and residential areas. Corridors should be at least 200m wide with gaps <20m and if following riparian area with at least 15m of vegetation on both sides of waterway.	Not present – no deer wintering habitat has been identified on site by MNRF.
Exceptions for EcoRegion 6E				
6E-14 Mast Producing Areas for Black Bear	FOM FOD	Woodland ecosites >30ha with mast-producing tree species, either soft (cherry) or hard (oak and beech).	All woodlands > 30 ha with a 50% composition of these ELC Vegetation Types are considered significant: FOM1-1 FOM2-1 FOM3-1 FOD1-1 FOD1-2 FOD2-1 FOD2-2 FOD2-3 FOD2-4 FOD4-1 FOD5-2 FOD5-3 FOD5-7 FOD6-5	N/A
6E- 17 Lek for Sharp-tailed Grouse	CUM CUS CUT	Grasslands (field/meadow) are to be >15ha when adjacent to shrubland and >30ha when adjacent to deciduous woodland. Grasslands are to be undisturbed with low intensities of agriculture (light grazing or late haying).	Any site confirmed with sharp-tailed grouse courtship activities is considered significant. The field/meadow ELC ecosites plus a 200 m radius area with shrub or deciduous woodland is the lek habitat.	N/A

APPENDIX D

Species at Risk Assessment

Species	Source	Status (SARO)	Habitat Preferences	Presence/Absence
Eastern Wood-Pewee (*Contopus virens*)	NHIC OBBA	SC	Found in forest clearings and edges of deciduous and mixed forests. Prefer intermediate-age mature forest stands with little understory vegetation.	***Present***– woodland habitats (FOD5-2, FOD5-10 and FOD5-3) had detections for the species. Detections were concentrated on adjacent lands to the west and north of the development area.
Wood Thrush (*Hylocichla mustelina*)	OBBA NHIC	SC	Mature deciduous and mixed (conifer-deciduous) forests.	***Present***– woodland habitats (FOD5-2, FOD5-10 and FOD5-3) had detections for the species. Detections were concentrated on adjacent lands to the north of the development area.
Red-headed Woodpecker (*Melanerpes erythrocephalus*)	OBBA	END	Lives in open woodland and woodland edges and is often found in parks, golf courses and cemeteries.	Absent – no detections in 2020 (Plan B) or 2021 (Roots). Further surveys in 2026 will be completed to confirm.
Eastern Meadowlark (*Sturnella magna*)	OBBA	THR	Breed primarily in moderately tall grasslands, such as pastures and hayfields, but are also found in alfalfa fields, weedy borders of croplands, roadsides, orchards, airports, shrubby overgrown fields, or other open areas.	Absent – suitable grassland habitat not found within the site or adjacent lands.
Bobolink (*Dolichonyx oryzivorus*)	OBBA	THR	Tallgrass prairie and other open meadows, including hayfields.	Absent – suitable grassland habitat not found within the site or adjacent lands.
Whip-poor-will (*Antrostomus vociferus*)	OBBA	SC	Mix of open and forested areas, such as savannahs, open woodlands or openings in more mature, deciduous, coniferous and mixed forests.	Absent – No detections of the species during surveys in 2022.

Bank Swallow (*Riparia riparia)*	OBBA	THR	Nest in burrows in natural and human-made settings where there are vertical faces in silt and sand deposits, including banks of rivers and lakes, and active sand and gravel pits.	Absent – no vertical faces with silt/sand deposits are present on site or adjacent lands.
Barn Swallow (*Hirundo rustica*)	OBBA	SC	Build nests almost exclusively on human-made structures such as open barns, under bridges and in culverts.	Absent – no suitable structures are present on site or adjacent lands.
Canada Warbler (*Cardellina canadensis*)	OBBA	SC	Breeds in a range of deciduous and coniferous forests, usually wet forest types, all with a well-developed, dense shrub layer.	Absent – Forest types on site not suitable and no detections were made in 2024.
Golden-winged Warbler (*Vermivora chrysoptera*)	NHIC OBBA		Nest in areas with young shrubs surrounded by mature forest – locations that have recently been disturbed, such as field edges, hydro or utility right-of-ways, or logged areas.	Absent – no detections for the species in 2024.
Grasshopper Sparrow (*Ammodramus savannarum*)	NHIC OBBA	SC	Open grassland areas with well-drained, sandy soil. Hayfields and pasture, as well as alvars, prairies and occasionally grain crops such as barley.	Absent – suitable grassland habitat not found within the site or adjacent lands.
Least Bittern (*Ixobrychus exilis*)	OBBA	THR	Found in a variety of wetland habitats but strongly prefers cattail marshes with a mix of open pools and channels.	Absent – suitable wetland habitats not found within the site or adjacent lands.
Chimney Swift (*Chaetura pelagica*)	OBBA	THR	Found in and around urban settlements where they nest and roost in chimneys and other manmade structures.	Absent – no suitable roosting structures found on site or within adjacent lands.
Snapping Turtle (*Chelydra serpentina*)	ONRAA	SC	Found in aquatic habitats such as ponds, marsh wetlands, shallow bays, slow moving streams/rivers and	Absent – wetland/aquatic habitats are not present on site or within adjacent lands.

			anthropogenic habits including golf course and aggregate ponds, irrigation canals, etc.	
Eastern Hog-nosed Snake (*Heterodon platirhinos*)	ONRAA	THR	Well–drained soil, loose or sandy soil; open vegetative cover such as open woods, brushland or forest edge; and proximity to water.	Absent – site largely bounded by urban/commercial development and roads making it unsuitable for movement into the area. No observations in 2022 and past observations are historic in this area.
Massasauga Rattlesnake (*Sistrurus catenatus*)	ONRAA	THR	Massasaugas live in different types of habitats throughout Ontario, including tall grass prairie, bogs, marshes, shorelines, forests and alvars. Massasaugas hibernate underground in crevices in bedrock, sphagnum swamps, tree root cavities and animal burrows where they can get below the frost line but stay above the water table.	Absent – records are historic (pre-1969) with no recent observations.
Northern Map Turtle (*Graptemys geographica*)	ONRAA	SC	Rivers and lakeshores where it basks on emergent rocks and fallen trees throughout the spring and summer. In winter, the turtles hibernate on the bottom of deep, slow-moving sections of river.	Absent – no suitable aquatic habitats present on site or adjacent lands.
Eastern Musk Turtle (*Sternotherus odoratus*)	ONRAA	SC	Ponds, lakes, marshes and rivers that are generally slow-moving have abundant emergent vegetation and muddy bottoms that they burrow into for winter hibernation.	Absent – no suitable aquatic habitats present on site or adjacent lands.

Blanding's Turtle (*Emydoidea blandingii*)	ONRAA	THR	Shallow water, usually in large wetlands and shallow lakes with lots of water plants. Hibernate in the mud at the bottom of permanent water bodies.	Absent – no suitable aquatic habitats present on site or adjacent lands.
Little Brown Myotis (*Myotis lucifugus*)	Habitat Assessment/ Distribution	END	Maternity roosts sites most often include buildings and large diameter trees with cracks, crevices, and/or exfoliating bark. Overwinters in caves and mines that maintain temperatures above 0°C.	Absent – No roost habitat was found within woodlands to be removed in the development area. Adjacent lands to the north and west may provide habitat based on the presence of mature deciduous stands.
Northern Myotis (*Myotis septentrionalis*)	Habitat Assessment/ Distribution	END	Maternity roosts most often include large diameter trees with cracks, crevices, and/or exfoliating bark. Overwinters in caves and mines that maintain temperatures above 0°C.	Absent - No roost habitat was found within woodlands to be removed in the development area. Adjacent lands to the north and west may provide habitat based on the presence of mature deciduous stands.
Tri-colored Bat (*Perimyotis subflavus*)	Habitat Assessment/ Distribution	END	Maternity roosts include Maple and Oak with dead/dying leaf clusters. Overwinters in caves and mines that maintain temperatures above 0°C.	Absent – No roost habitat was found within woodlands to be removed in the development area. Adjacent lands to the north and west may provide habitat based on the presence of mature deciduous stands.
Eastern Small-footed Myotis (*Myotis leibii*)	Habitat Assessment/ Distribution	END	Roost in a variety of habitats, including in or under rocks, in rock outcrops, in buildings, under bridges, or in caves, mines, or hollow trees. Hibernate, most often in caves and abandoned mines that maintain temperatures above 0°C.	Absent – no suitable rock outcrop or talus slopes to support habitat for the species.

Hoary Bat (*Lasiurus cinereus*)	Habitat Assessment/ Distribution	END	Deciduous and coniferous forests, with a preference for deciduous stands that have larger diameter canopy trees. Forage in the open habitats that may include wetlands, grasslands and open fields with patchily distributed trees.	Absent – No roost habitat was found within woodlands to be removed in the development area. Adjacent lands to the north and west may provide habitat based on the presence of mature deciduous stands.
Eastern Red Bat (*Lasiurus borealis*)	Habitat Assessment/ Distribution	END	Deciduous and coniferous forests, with a preference for deciduous stands that have larger diameter canopy trees. Forage in the open habitats that may include wetlands, grasslands and open fields with patchily distributed trees.	Absent – No roost habitat was found within woodlands to be removed in the development area. Adjacent lands to the north and west may provide habitat based on the presence of mature deciduous stands.
Silver-haired Bat (*Lasionycteris noctivagans*)	Habitat Assessment/ Distribution	END	Deciduous and coniferous forests, with a preference on larger diameter decaying trees with cavities and/or peeling bark. Forage in young and old forests, openings and along the edges.	Absent – No roost habitat was found within woodlands to be removed in the development area. Adjacent lands to the north and west may provide habitat based on the presence of mature deciduous stands.

Species Status:

SC: Special Concern

THR: Threatened

END: Endangered

Source References:

NHIC: Natural Heritage Information Centre (NHIC) https://www.ontario.ca/page/make-natural-heritage-area-map

ONRAA: Ontario Nature Reptile and Amphibian Atlas https://www.ontarioinsects.org/herp/

OBBA: Ontario Breeding Bird Atlas https://www.birdsontario.org/

APPENDIX E

CV for Kyle Fleming

Kyle Fleming, BSc. (Wildlife)

Senior Ecologist/President

Qualifications

Kyle has over 20 years experience as an ecologist where he has been responsible completing over 350 Environmental Impact Studies, Species at Risk Assessments, environmental monitoring, and related projects throughout Central, Southern and Eastern Ontario. He is a Qualified Wetland Evaluator & Certified Butternut Assessor by the MNRF, is trained and experienced in the use of Ecological Land Classification (ELC) and has been qualified as an expert at the Ontario Municipal Board/LPAT. His work is readily accepted by municipalities, conservation authorities and government agencies, and he is very familiar with provincial and federal policies and legislation.

Professional Experience

MAY 2019 - PRESENT

Senior Ecologist/President / Roots Environmental Inc., Barrie, ON

As the Senior Ecologist with Roots Environmental, Kyle is responsible the managing and implementation of environmental impact assessments, species at risk assessments and related studies for private and public sector clients throughout Ontario.

MAY 2004- MAY 2019

Senior Terrestrial Ecologist / Skelton, Brumwell & Associates, Barrie, ON

Responsible for completing Natural Environmental Reports, Environmental Impact Studies, Species at Risk Assessments for private and public sector clients throughout Ontario.

kyle@rootsenvironmental.ca 705.718.6153 65 Melrose Ave, Barrie, ON L4M 2B1

APRIL – AUGUST 2003

Project Supervisor/Field Biologist / Hamer Environmental L.P., Mt. Vernon, WA, USA

Responsible for supervising and managing a threatened seabird monitoring project on state lands.

NOVEMBER 2002 – JANAURY 2003

Environmental Technician / Aqua-Terre Solutions Inc., Toronto, ON

Responsible for data management of water and soil sampling for sites across the GTA.

APRIL – AUGUST 2002

Field Biologist / Hamer Environmental L.P., Mt. Vernon, WA, USA

Conducted threatened seabird surveys on state lands to determine presence/absence relative to forestry activities.

MAY – AUGUST 2001

Field Technician/ University of Washington, Forks, WA, USA

June-August 2001, Field Technician

Research project on nest predation of threatened seabirds and impacts of forestry practices on nesting sites.

Education

2002

Bachelor of Science in Wildlife Biology / University of Northern British Columbia, Prince George, BC

1998

Diploma in Fish and Wildlife Technology / Sir Sandford Fleming College, Lindsay, ON

Certifications/Courses

- Ontario Wetland Evaluation Training Course, 2004.
- Ecological Land Classification for Southern Ontario Training Course, 2005.
- Certificate of Participation: Wildlife Acoustics Bat Detector & Analysis Course, 2015.
- Ministry of Natural Resources (MNR) Butternut Assessment Course, 2009, 2014 & 2019.
- OPPI- The Planner at the Ontario Municipal Board Seminar, 2006.

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